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Lecture Capture is a comprehensive collection of audio-video classroom recordings. It is available on cloud and in the form of on-premise installations with live streaming functionality.

[www.pearsoned.co.in/web/lecturecapture.aspx](http://www.pearsoned.co.in/web/lecturecapture.aspx)

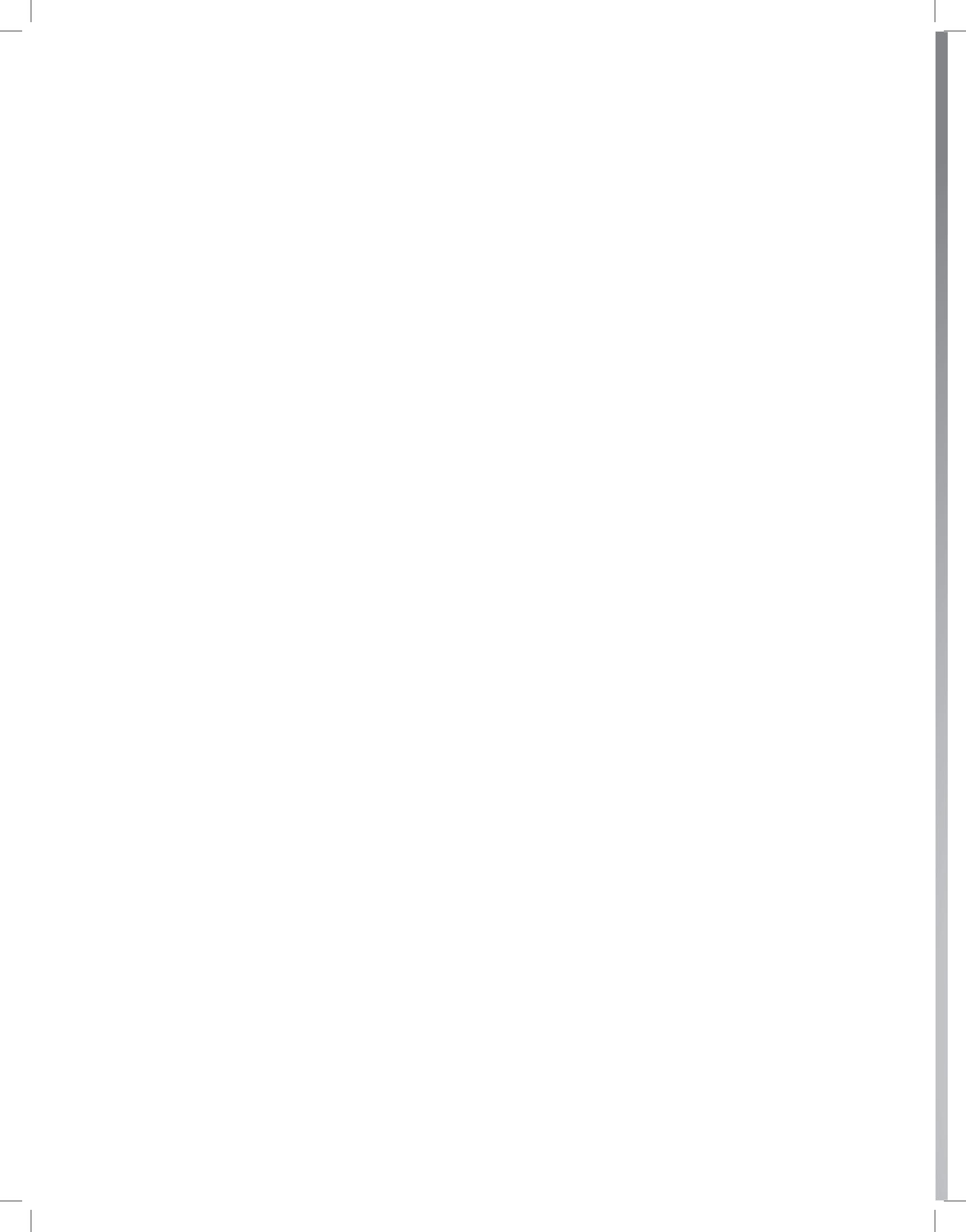


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## MATHEMATICS

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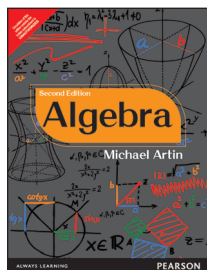


# MATHEMATICS





# Algebra



## Algebra, 2/e

Michael Artin

ISBN: 9789332549838

© 2015

Pages: 560



### About the Book

*Algebra, Second Edition*, by Michael Artin, is ideal for the honors undergraduate or introductory graduate course. The second edition of this classic text incorporates twenty years of feedback and the author's own teaching experience. The text discusses concrete topics of algebra in greater detail than most texts, preparing students for the more abstract concepts; linear algebra is tightly integrated throughout.

### Features

- High emphasis on concrete topics, such as symmetry, linear groups, quadratic number fields, and lattices, prepares students to learn more abstract concepts. The focus on these special topics also allows some abstractions to be treated more concisely, devoting more space to the areas students are the most interested in.
- The chapter organization emphasizes the connections between algebra and geometry at the start, with the beginning chapters containing the content most important for students in other fields. To counter the fact that arithmetic receives less initial emphasis, the later chapters have a strong arithmetic slant.
- Treatment beyond the basics sets this book apart from others. Students with a reasonably mature mathematical background will benefit from the relatively informal treatments the author gives to the more advanced topics.
- Content notes in the preface include teaching tips from the author's own classroom experience.
- Challenging exercises are indicated with an asterisk, allowing instructors to easily create the right assignments for their class.

### Contents

1. Matrices
2. Groups
3. Vector Spaces
4. Linear Operators
5. Applications of Linear Operators
6. Symmetry
7. More Group Theory
8. Bilinear Forms
9. Linear Groups
10. Group Representations
11. Rings
12. Factoring
13. Quadratic Number Fields
14. Linear Algebra in a Ring
15. Fields
16. Galois Theory

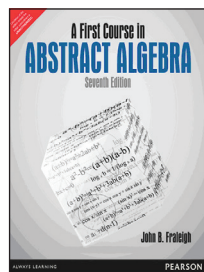
### About the Author

**Dale E. Kester** is Professor of Pomology emeritus at the University of California, Davis. During his 40 years at the University of California he taught courses in plant propagation and pomology. He has been a member of the American Society of Horticultural Science, becoming a Fellow in 1977. He

received jointly the Stark Award in 1980. He has published over 100 research and popular publications in plant propagation and pomology. He has had a lifelong collaboration with Dr. Hudson T. Hartmann which resulted in the publication of the first edition of *Plant Propagation: Principles and Practices* in 1959, followed by other editions in 1968, 1975, 1983, and 1990. One of the founders of the Western Region of the International Plant Propagators' Society (1960), he has served the society in various capacities including Vice-President, program chair (1996) and President (1997). He received the Curtis J. Alley Achievement Award in 1999.

**Fred T. Davies, Jr.**, Professor of Horticultural Sciences, and Molecular and Environmental Plant Sciences, Texas A&M University, has taught courses in plant propagation and nursery production and management since 1979. He has co-authored over 100 research and technical publications. He was a Fulbright Senior Fellow to Mexico (1993) and Peru (1999), and a J.S. Guggenheim Fellow (1999). He received the Distinguished Achievement Award for Nursery Crops from the American Society of Horticultural Sciences (1989), L.M. Ware Distinguished Research Award-ASHS-SR (1995), and S.B. Meadows Award of Merit-International Plant Propagator's Society-SR (1994). He is a recipient of the Association of Former Students Distinguished Achievement Award for Teaching-TAMU (1997), Chancellor of Agriculture's Award in Excellence in Undergraduate Teaching-TAMU (1998), L.M. Ware Distinguished Teaching Award, ASHS-SR (1998), and L.C. Chadwick Educator's Award, American Nursery and Landscape Association (1999). He is the International Division Vice-President-ASHS. He was President, and is currently Editor, of the IPPS-SR.

**Robert L. Geneve** is a Professor in the Department of Horticulture at the University of Kentucky. He teaches courses in plant propagation and seed biology. He has co-authored over 70 scientific and technical articles in seed biology, cutting propagation, and tissue culture. He is also the co-editor of the book *Biotechnology of Ornamental Plants* and author of *A Book of Blue Flowers*. He has served as a board member for the International Plant Propagators' Society-Eastern Region and serves on the Editor for the international horticulture journal, *Scientia Horticulturae*.



## A First Course in Abstract Algebra, 7/e

John B. Fraleigh

ISBN: 9789332519039

© 2014

Pages: 460

### About the Book

Considered a classic by many, *A First Course in Abstract Algebra* is an in-depth introduction to abstract algebra. Focused on groups, rings and fields, this text gives students a firm foundation for more specialized work by emphasizing an understanding of the nature of algebraic structures.

### Features

- This classical approach to abstract algebra focuses on applications.
- The text is geared toward high-level courses at schools with strong mathematics programs.
- Accessible pedagogy includes historical notes written by Victor Katz, an authority on the history of math.
- By opening with a study of group theory, this text provides students with an easy transition to axiomatic mathematics

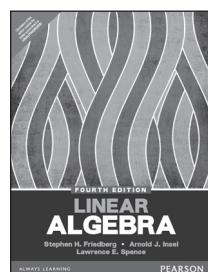
### Contents

- Chapter 0. Sets and Relations
- Chapter 1. Groups and Subgroups
- Chapter 2. Permutations, Cosets, and Direct Products

- Chapter 3. Homomorphisms and Factor Groups
- Chapter 4. Rings and Fields
- Chapter 5. Ideals and Factor Rings
- Chapter 6. Extension Fields
- Chapter 7. Advanced Group Theory
- Chapter 8. Factorization
- Chapter 9. Automorphisms and Galois Theory
- Appendix: Matrix Algebra

### About the Author

John B. Fraleigh, University of Rhode Island



### Linear Algebra, 4/e

**Stephen H. Friedberg**  
**Arnold J. Insel**  
**Lawrence E. Spence**

ISBN: 9789332549647  
 © 2015  
 Pages: 601



### About the Book

This top-selling, theorem-proof text presents a careful treatment of the principle topics of linear algebra, and illustrates the power of the subject through a variety of applications. It emphasizes the symbiotic relationship between linear transformations and matrices, but states theorems in the more general infinite-dimensional case where appropriate.

### Features

- NEW - Added section on the singular value decomposition which discusses the pseudoinverse of a matrix or a linear transformation between finite-dimensional inner product spaces.
- NEW - Revised proofs, added examples and exercises which improves the clarity of the text and enhances students' understanding of it.
- The friendliest treatment of rigor in linear algebra—Usually used for a 2nd course, but can be used for smart, fast students in first course.
- Numerous accessible exercises—Enriches and extends the text material.
- Real-world applications throughout.

### Contents

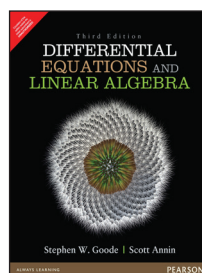
1. Vector Spaces.
2. Linear Transformations and Matrices.
3. Elementary Matrix Operations and Systems of Linear Equations.
4. Determinants.
5. Diagonalization.
6. Inner Product Spaces.

### Appendices.

Answers to Selected Exercises.

### About the Author

**Stephen H. Friedberg**, Illinois State University  
**Arnold J. Insel**, Illinois State University  
**Lawrence E. Spence**, Illinois State University



### Differential Equations and Linear Algebra, 3/e

**Stephen W. Goode**

ISBN: 9789332571631  
 © 2015  
 Pages: 800



### About the Book

“For combined differential equations and linear algebra courses teaching students who have successfully completed three semesters of calculus. This complete introduction to both differential equations and linear algebra presents a carefully balanced and sound integration of the two topics. It promotes in-depth understanding rather than rote memorization, enabling students to fully comprehend abstract concepts and leave the course with a solid foundation in linear algebra. Flexible in format, it explains concepts clearly and logically with an abundance of examples and illustrations, without sacrificing level or rigor. A vast array of problems supports the material, with varying levels from which students/instructors can choose.”

### Features

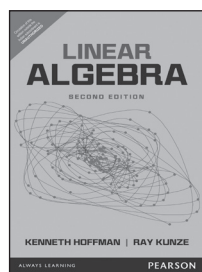
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### Contents

1. First-Order Differential Equations
2. Matrices and Systems of Linear Equations
3. Determinants
4. Vector Spaces
5. Linear Transformation
6. Linear Differential Equations of Order  $n$
7. Systems of Differential Equations
8. The Laplace Transform and Some Elementary Applications
9. Series Solutions to Linear Differential Equations
- Appendices
- A. Review of Complex Numbers
- B. Review of Partial Fractions
- C. Review of Integration Techniques
- D. Linearly Independent Solutions to  $x'' + p(x)y' + q(x)y = 0$
- E. Answers to Odd-Numbered Exercises”

### About the Author

**Stephen W. Goode**, California State University, Fullerton  
**Scott A. Annin**, California State University, Fullerton



### Linear Algebra, 2/e

**Kenneth M. Hoffman**  
**Ray Kunze**

ISBN: 9789332550070  
 © 2015  
 Pages: 592



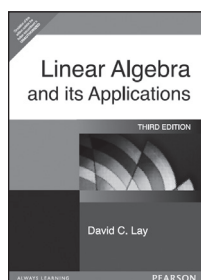
### About the Book

This introduction to linear algebra features intuitive introductions and examples to motivate important ideas and to illustrate the use of results of theorems.



## Contents

1. Linear Equations.
2. Vector Spaces.
3. Linear Transformations.
4. Polynomials.
5. Determinants.
6. Elementary canonical Forms.
7. Rational and Jordan Forms.
8. Inner Product Spaces.
9. Operators on Inner Product Spaces.
10. Bilinear Forms.



## Linear Algebra and Its Applications, 3/e

David C. Lay

ISBN: 9788177583335

© 2002

Pages: 580

### About the Book

Linear algebra is relatively easy for students during the early stages of the course, when the material is presented in a familiar, concrete setting. But when abstract concepts are introduced, students often hit a brick wall. Instructors seem to agree that certain concepts (such as linear independence, spanning, subspace, vector space, and linear transformations), are not easily understood, and require time to assimilate. Since they are fundamental to the study of linear algebra, students understanding of these concepts is vital to their mastery of the subject. Lay introduces these concepts early in a familiar, concrete  $\mathbb{R}^n$  setting, develops them gradually, and returns to them again and again throughout the text. Finally, when discussed in the abstract, these concepts are more accessible.

### Features

- Fundamental ideas of linear algebra are introduced within the first seven lectures, in the concrete setting of  $\mathbb{R}^n$ , and then gradually examined from different points of view. Later generalizations of these concepts appear as natural extensions of familiar ideas.
- Focus on visualization of concepts throughout the book.
- Icons in the margins to flag topics for which expanded or enhanced material is available on the Web.
- A modern view of matrix multiplication is presented. Definitions and proofs focus on the columns of a matrix rather than on the matrix entries.
- Numerical Notes give a realistic flavor to the text. Students are reminded frequently of issues that arise in the real-life use of linear algebra.
- Each major concept in the course is given a geometric interpretation because many students learn better when they can visualize an idea.

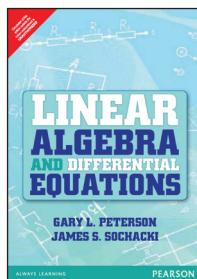
### Contents

1. Linear Equations in Linear Algebra.
2. Matrix Algebra.
3. Determinants.
4. Vector Spaces.
5. Eigenvalues and Eigenvectors.
6. Orthogonality and Least-Squares.
7. Symmetric Matrices and Quadratic Forms.

### About the Author

**David C. Lay** has been an educator and research mathematician since 1966, mostly at the University of Maryland, College Park. He has also served as

a visiting professor at the University of Amsterdam, the Free University in Amsterdam, and the University of Kaiserslautern, Germany. He has over 30 research articles published in functional analysis and linear algebra.



## Linear Algebra and Differential Equations, 1/e

Gary L. Peterson  
James S. Sochacki

ISBN: 9789332552463

© 2015

Pages: 480



### About the Book

Linear Algebra and Differential Equations has been written for a one-semester combined linear algebra and differential equations course, yet it contains enough material for a two-term sequence in linear algebra and differential equations. By introducing matrices, determinants, and vector spaces early in the course, the authors are able to fully develop the connections between linear algebra and differential equations. The book is flexible enough to be easily adapted to fit most syllabi, including separate courses that cover linear algebra in the first followed by differential equations in the second. Technology is fully integrated where appropriate, and the text offers fresh and relevant applications to motivate student interest.

### Features

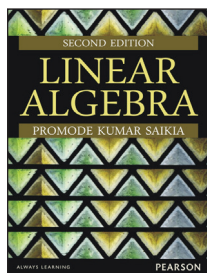
- Offers a solid foundation in both linear algebra and differential equations, with an emphasis on finding connections between the two subjects.
- Contains applications to many areas, including engineering, business, and life sciences.
- Maple exercises incorporated throughout; support is also offered to users of Mathematica and Matlab in the technology resource manual.

### Contents

1. Matrices and Determinants.
  2. Vector Spaces.
  3. First Order Ordinary Differential Equations.
  4. Linear Differential Equations.
  5. Linear Transformations and Eigenvalues and Eigenvectors.
  6. Systems of Differential Equations.
  7. The Laplace Transform.
  8. Power Series Solutions to Linear Differential Equations.
  9. Inner Product Spaces.
- Answers to Odd-Numbered Exercises.  
Index of Maple Commands.

### About the Author

**Gary L. Peterson**, James Madison University  
**James S. Sochacki**, James Madison University



## Linear Algebra, 2/e

Promode Kumar Saikia

ISBN: 9789332522145

© 2014

Pages: 456

### About the Book

Designed as a text on Linear Algebra for undergraduate and postgraduate students of Mathematics, this book explains the basics comprehensively and with clarity. The flowing narrative of the book provides a refreshing approach to the subject. Drawing on decades of experience from teaching and based on extensive discussions with teachers and students, the book simplifies proofs while doing away with needless burdensome textual details.

### Features

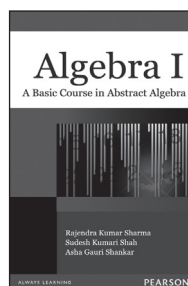
- Easy-paced treatment of basic concepts
- Re-arrangement of topics for better clarity and understanding (New)
- Coverage of additional topics such as LU factorization, definitions and examples of groups, rings and fields etc (New)
- Treatment of ranks of matrices through row and column spaces
- Explicit computations of bases of sums and intersections of subspaces
- Careful expositions of concepts such as minimal polynomial, invariant subspaces, etc.
- A simplified derivation of Jordan form
- Application of real quadratic forms to conic sections, constrained optimizations, etc.
- Introduction to singular value decomposition and generalized inverses
- Additional examples and exercises of varying difficulty
- Hints provided to selected questions
- Extensive supplements: Solution to end-of-chapter questions for Instructors and Hints and answers to selected questions for students and Additional Topics

### Contents

1. Matrices
  2. Systems of Linear Equations
  3. Vector Spaces
  4. Linear Maps and Matrices
  5. Linear Operators
  6. Canonical Forms
  7. Bilinear Forms
  8. Inner Product Spaces
- Bibliography

### About the Author

**Dr. Promode Kr. Saikia** has been teaching in the North Eastern Hill University, Shillong for over thirty three years. He also taught in the undergraduate college of St. Anthony's in Shillong for two years after completing his B. Sc and M.Sc. in Mathematics from Delhi University in 1972. He obtained his Ph. D. from the University of Wisconsin, Madison (U.S.A.), working under the supervision of Prof. Louis Solomon. His research interests are in the areas of number theory and p-adic analysis. Helping students enjoy mathematics and develop an interest in problem-solving has been the main goal of his long teaching career.



## Algebra I :A basic Course in Abstract Algebra

Rajendra Kumar Sharma

Sudesh Kumari Shah

Asha Gauri Shankar

ISBN: 9788131760864

© 2011

Pages: 780

### About the Book

Algebra is a compulsory paper offered to the undergraduate students of Mathematics. The majority of universities offer the subject as a two /three year paper or in two/three semester. In view of this, we are bringing out three books ranging from introductory to advance level course in Algebra. Algebra I is the first book of the series and covers the topic required for a basic course.

### Features

- Learning Objectives
- Chapter end summary for quick revision
- Geometric interpretation of the concept
- Answer to exercise
- Hints to difficult problems

### Contents

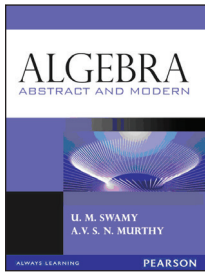
1. Sets & Relations
2. Binary Operations
3. Function
4. Number system
5. Group
6. Group, properties and characteristics
7. Subgroup
8. Cyclic Subgroup
9. Rings
10. System of Linear Equations
11. Matrices
12. Matrices & Linear Transformations
13. Vector Space
14. Basis & Dimensions
15. Linear Transformations
16. Change of Basis
17. Eigen Value & Eigen Vector
18. Markov Process

### About the Author

**Dr. Rajendra Kumar Sharma** is a Professor and Head of Department of Mathematics at Indian Institute of Technology Delhi. He has been teaching undergraduate and postgraduate students for more than 20 years.

**Dr. Sudesh Kumari Shah** is Associate Professor in Department of Mathematics at Sri Venkateshvara College, University of Delhi. She has been teaching the undergraduate and postgraduate students of Delhi University of more than 30 years.

**Dr. Asha Gauri Shankar** is Associate Professor in Department of Mathematics at Lakshmibai College, University of Delhi. She has received Shiksha Ratan Puraskar by India International Friendship Society.



## Algebra :Abstract and Modern

**U M Swamy**  
**AV S N Murty**

ISBN: 9788131758922  
© 2011  
Pages: 512

### About the Book

Spread across 16 chapters, this book introduces the readers to the preliminaries of algebra and then explains topics like group theory and field theory in depth. It also features a blend of numerous challenging exercises and examples that further enhance each chapter. Covering all the necessary topics on the subject, this text is an ideal text book for an undergraduate course on mathematics.

### Features

- Balanced and comprehensive coverage of ring theory
- An exclusive chapter on Galois theory and its application
- A real flavor of numerical notes to the text, which reminds the students of the real-life use of algebra
- Concepts are summarized visually using graphs and charts

### Contents

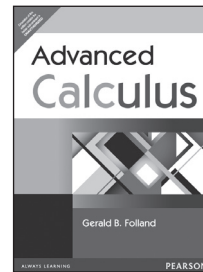
1. Sets and Relations
2. Real number system and matrices
3. Groups
4. Subgroups
5. Homomorphism of groups
6. Permutation Groups
7. Groups acting on sets
8. Structure theorem
9. Rings
10. Ideals and quotient rings
11. Polynomial rings
12. Divisibility in integral domains
13. Modules and Vector spaces
14. Extension fields
15. Galois Theory
16. Certain applications of Galois theory

### About the Author

U. M. Swamy is former Dean, Faculty of Science, Andhra University, Visakhapatnam, Andhra Pradesh.

A.V.S.N. Murty is a Professor of Mathematics, Srinivasa Institute of Engineering and Technology, Amalapuram, Andhra Pradesh.

## Calculus



### Advanced Calculus

**Gerald B Folland**

ISBN: 9788131768570  
© 2002  
Pages: 476

### About the Book

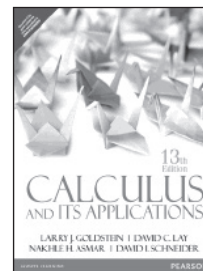
This text presents a unified view of calculus in which theory and practice reinforce each other. It covers the theory and applications of derivatives (mostly partial), integrals, (mostly multiple or improper), and infinite series (mostly of functions rather than of numbers), at a deeper level than is found in the standard advanced calculus books.

### Features

- Single and Multivariable Analysis equally balanced
- A focus on calculus itself and its applications
- Numerous worked-out examples and exercises throughout
- A chapter on Fourier analysis

### Contents

1. Setting the Stage.
2. Differential Calculus
3. The Implicit Function Theorem and Its Applications
4. Integral Calculus
5. Line and Surface Integrals; Vector Analysis
6. Infinite Series
7. Fourier Series
8. Fourier Series



### Calculus & Its Applications, 13/e

**Larry J. Goldstein**  
**David Lay**  
**Nakhle I Asmar**  
**David I. Schneider**

ISBN: 9789332535244  
© 2014  
Pages: 576

### About the Book

Calculus and Its Applications, Thirteenth Edition is a comprehensive, yet flexible, text for students majoring in business, economics, life science, or social sciences. The authors delve into greater mathematical depth than other texts while motivating students through relevant, up-to-date, applications drawn from students' major fields of study. The authors motivate key ideas geometrically and intuitively, providing a solid foundation for the more abstract treatments that follow. Every chapter includes a large quantity of exceptional exercises—a hallmark of this text—that address skills, applications, concepts, and technology. The MyMathLab® course for the text features thousands of assignable exercises, built-in support for gaps in basic skills, and an array of interactive figures designed to help students visualize key concepts. The Thirteenth Edition includes updated applications, exercises, and technology coverage. The authors have also added more study tools, including a prerequisite skills diagnostic test and a greatly improved end-of-chapter summary, and made content improvements based on user reviews.

## Features

- The **student-oriented presentation** helps students as they complete homework. The text's numerous examples are designed to help students learn independently.
- **Time-tested exercise sets** have been carefully designed and sorted by level of difficulty, allowing instructors to choose the most appropriate exercises for their students. Each section also has technology exercises, encouraging students to use technology to solve problems. These problems are clearly labeled for instructor convenience.
- **Applications** contain up-to-date data to illustrate the relevance of the mathematical concepts. Topics include health expenditures, the federal deficit, mortgages, debt per capita, and price of gasoline.
- **Check Your Understanding** exercises at the end of each section target the concepts that can cause confusion for students. Complete solutions are provided for these unique exercises following the exercise sets within the text.
- **"Caution!" notes** provide tips on common pitfalls and mistakes by students and appear at relevant times throughout the text.
- **Incorporating Technology** features at the end of most sections include useful information about the use of graphing calculators. These features are optional and clearly marked. Additional support material can be downloaded from this book's Companion Website.

## Contents

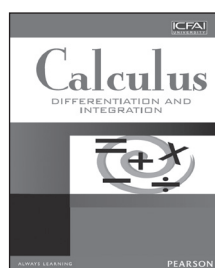
0. Functions
  1. The Derivative
  2. Applications of the Derivative
  3. Techniques of Differentiation
  4. The Exponential and Natural Logarithm Functions
  5. Applications of the Exponential and Natural Logarithm Functions
  6. The Definite Integral
  7. Functions of Several Variables
  8. The Trigonometric Functions
  9. Techniques of Integration
  10. Differential Equations
- Appendix: Areas under the Standard Normal Curve  
Answers to Exercises

## About the Author

**Larry Goldstein** has received several distinguished teaching awards, given more than fifty Conference and Colloquium talks & addresses, and written more than fifty books in math and computer programming. He received his PhD at Princeton and his BA and MA at the University of Pennsylvania. He also teaches part time at Drexel University.

**David Schneider**, who is known widely for his tutorial software, holds a BA degree from Oberlin College and a PhD from MIT. He is currently an associate professor of mathematics at the University of Maryland. He has authored eight widely used math texts, fourteen highly acclaimed computer books, and three widely used mathematics software packages. He has also produced instructional videotapes at both the University of Maryland and the BBC.

**Martha Siegel** holds a BA from Russell Sage College, attended Rensselaer Polytechnic Institute as a special student, and received his PhD at the University of Rochester. From 1966 until 1971 she taught at Goucher University in Baltimore. Since 1971 she has been a professor at Towson State University, also in Maryland. Professor Siegel has been on the writing team of this book since the fifth edition and is also the co-author of a precalculus reform book.



## Calculus : Differentiation and Integration

ICFAI University Press

ISBN: 9788131758908

© 2012

Pages: 680

## About the Book

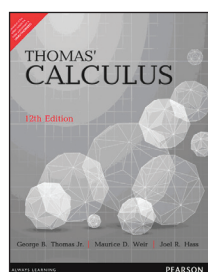
Calculus " Differentiation and Integration focuses on the introductory aspects of the course. This book has been tailor made for the UG students' in an elegant way without unnecessary jargon. Adequate emphasis has been given on basic principles, theory and pedagogy.

## Features

- Tailor-made for undergraduates and designed to inform without overwhelming students with unnecessary jargon
- Comprehensively covers the key ideas of calculus over 17 chapters, with 3 chapters covering the preliminaries, 7 chapters dedicated to differential calculus and 7 chapters dedicated to integral calculus
- In-depth theoretical analysis of each and every topic
- Comprehensive coverage on topics such as successive differentiation and maxima and minima
- Practical applications of the concepts of differentiation and integration are explained in detail to give students firm perspective on the subject

## Contents

1. Real Numbers
2. Functions and Graphs
3. Limits and Continuity
4. Differentiation
5. Successive Differentiation
6. Applications of the Derivative to Geometry
7. Maxima and Minima
8. Indeterminate Forms
9. Mean Value Theorems
10. Differential Operators
11. Integration
12. Methods of Integration
13. Integration of Algebraic Rational Functions
14. Integration of Irrational Functions
15. Applications of Integration
16. Successive Partial Integration
17. Infinite Sequences and Series



## Thomas' Calculus, 12/e

George B. Thomas  
Jr., Maurice D. Weir  
Joel Hass

ISBN: 9789332542426

© 2014

Pages: 1144



## About the Book

Calculus hasn't changed, but your students have. Today's students have been raised on immediacy and the desire for relevance, and they come to calculus with varied mathematical backgrounds. Thomas' Calculus, Twelfth Edition, helps your students successfully generalize and apply the key ideas of calculus through clear and precise explanations, clean design, thoughtfully chosen

examples, and superior exercise sets. Thomas offers the right mix of basic, conceptual, and challenging exercises, along with meaningful applications. This significant revision features more examples, more mid-level exercises, more figures, improved conceptual flow, and the best in technology for learning and teaching

### Features

- Strong exercise sets feature a great breadth of problems-progressing from skills problems to applied and theoretical problems-to encourage students to think about and practice the concepts until they achieve mastery.
- Figures are conceived and rendered to provide insight for students and support conceptual reasoning.
- The flexible table of contents divides complex topics into manageable sections, allowing instructors to tailor their course to meet the specific needs of their students. For example, the precise definition of the limit is contained in its own section and may be skipped.
- Complete and precise multivariable coverage enhances the connections of multivariable ideas with their single-variable analogues studied earlier in the book.

### Contents

1. Functions
  2. Limits and Continuity
  3. Differentiation
  4. Applications of Derivatives
  5. Integration
  6. Applications of Definite Integrals
  7. Transcendental Functions
  8. Techniques of Integration
  9. First-Order Differential Equations
  10. Infinite Sequences and Series
  11. Parametric Equations and Polar Coordinates
  12. Vectors and the Geometry of Space
  13. Vector-Valued Functions and Motion in Space
  14. Partial Derivatives
  15. Multiple Integrals
  16. Integration in Vector Fields
  17. Second-Order Differential Equations
- Appendices
1. A Brief Table of Integrals
  2. Answers to Odd-Numbered Exercise

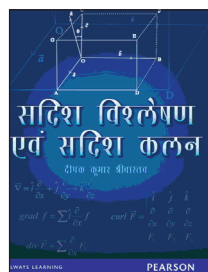
### About the Author

**Joel Hass** received his PhD from the University of California Berkeley. He is currently a professor of mathematics at the University of California Davis. He has coauthored six widely used calculus texts as well as two calculus study guides. He is currently on the editorial board of *Geometriae Dedicata* and *Media-Enhanced Mathematics*. He has been a member of the Institute for Advanced Study at Princeton University and of the Mathematical Sciences Research Institute, and he was a Sloan Research Fellow. Hass's current areas of research include the geometry of proteins, three dimensional manifolds, applied math, and computational complexity. In his free time, Hass enjoys kayaking.

**Maurice D. Weir** holds a DA and MS from Carnegie-Mellon University and received his BS at Whitman College. He is a Professor Emeritus of the Department of Applied Mathematics at the Naval Postgraduate School in Monterey, California. Weir enjoys teaching Mathematical Modeling and Differential Equations. His current areas of research include modeling and simulation as well as mathematics education. Weir has been awarded the Outstanding Civilian Service Medal, the Superior Civilian Service Award, and the Schieffelin Award for Excellence in Teaching. He has coauthored eight books, including the University Calculus series and the twelfth edition of Thomas' Calculus.

**George B. Thomas, Jr.** (late) of the Massachusetts Institute of Technology, was a professor of mathematics for thirty-eight years; he served as the executive officer of the department for ten years and as graduate registration officer for five years. Thomas held a spot on the board of governors of the Mathematical Association of America and on the executive committee of the mathematics

division of the American Society for Engineering Education. His book, *Calculus and Analytic Geometry*, was first published in 1951 and has since gone through multiple revisions. The text is now in its twelfth edition and continues to guide students through their calculus courses. He also co-authored monographs on mathematics, including the text *Probability and Statistics*.



### Vector Analysis

**Dr. Deepak Kumar Srivastava**

ISBN: 9789332515284

© 2014

Pages: 184

### About the Book

Sadish visleshad avam sadish kaln gadiit ki do awashyak dharaey hai. Iss puctak ko bhart dhesk ke sabhi Hindi Bhashi razzyo ke unn chatra chaatrao ke samshyao ko dhyan mei rakh kar kiya gaya hai. Is pustak mei trastut sabhi addhye bharat desh ke Hindi vashi Razzyo ke vishwavidhyalyo mei chalne wale sadish vishlation avam sadish kalan adharit pathyekaramo ke anurup hai. Gandit ke sabhi sabdo ko vagyanik and takniki sabdawali ayaog, manav vikas sansadhan mantralaye, bharat sarkar, dwara pramadit shabd sangrah avam sabdawali ke anusar prayog mai laya gaya hai.

### Features

- The book is for everyone who want some direction and clarity on how to feel happier and more fulfilled
- A humorous book from an author with an established readership
- Lots of Simple ,easily achievable strategies
- The book is about practical approach

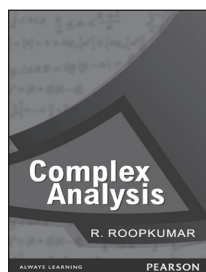
### Contents

- Sadish visleshan
- Mulbhut tathaye
- Sadish rashiyo ke sadish tatha adish gudan
- Sadishiyo ke jayemitiye anupryoge
- Sadish kalan
- Sadish awkalan
- Pyarwakta, apasarita, karl ya gradient, diverjence, karl
- Sadish samakalan

### About the Author

**Dr. Deepak Kumar Srivastava** is reader in Mathmatices Dept B.S.N.V.P.G College(Lucknow)

# Complex Analysis



## Complex Analysis

R Roopkumar

ISBN: 9789332537613

© 2014

Pages: 472

### About the Book

This text book is intended for both under graduate and post graduate Courses in complex analysis. The book has been written on complex analysis by explaining each and every argument in any proof in a lucid manner so that the Book would be an ideal self study material for the students. Since many concepts in complex analysis are geometrical in nature, more geometrical arguments are given, without any compromise in rigor.

### Contents

Preface

Chapter 1 Preliminaries

Chapter 2 Analytic Functions

Chapter 3 Rational Functions and Multivalued Functions

Chapter 4 Complex Integration

Chapter 5 Series Developments and Infinite Products

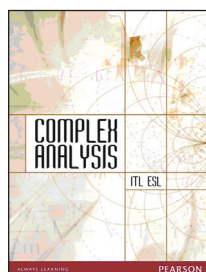
Chapter 6 Residue Calculus

Chapter 7 Some Interesting Theorems

Chapter 8 Elliptic Functions

Bibliography

Index



## Complex Analysis

ITL Education Solutions Limited

ISBN: 9788131772492

© 2012

Pages: 480

### About the Book

Complex Analysis presents a comprehensive and student-friendly introduction to the important concepts of the subject. Its clear, concise writing style and numerous applications make the basics easily accessible to students, and serves as an excellent resource for self-study. Its comprehensive coverage includes:

• Cauchy-Goursat theorem, along with the description of connected domains and its extensions

• A separate chapter on Analytic Functions explaining the concepts of limits, continuity and differentiability

### Features

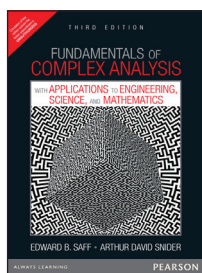
- Over 150 illustrations to help the reader visualize complex relationships
- 180 solved problems and 729 unsolved problems for practice
- Answers to unsolved problems included

### Contents

1. Complex Numbers
2. Analytic Functions
3. Elementary Functions
4. Complex Integration
5. Sequence and Series
6. Singularities and Residues
7. Applications of Residues
8. Bilinear and Conformal Transformations
9. Special Topics

### About the Author

ITL Education Solutions Limited (ITL ESL) is a part of the ITL group, which has operations all over the world with a significant presence in education and IT-enabled services. It specializes in handling educational projects in IT domains with a dedicated R&D wing of industry experts that helps in designing and developing content.



## Fundamentals of Complex Analysis with Applications to Engineering, Science, and Mathematics, 3/e

Edward B. Saff

ISBN: 9789332535091

© 2014

Pages: 520

### About the Book

This is the best seller in this market. It provides a comprehensive introduction to complex variable theory and its applications to current engineering problems. It is designed to make the fundamentals of the subject more easily accessible to students who have little inclination to wade through the rigors of the axiomatic approach. Modeled after standard calculus books—both in level of exposition and layout—it incorporates physical applications throughout the presentation, so that the mathematical methodology appears less sterile to engineering students.

### Features

- **NEW—Downloadable MATLAB toolbox**—A state-of-the-art computer aid.
- **NEW—Modern exposition of the use of complex numbers in linear analysis**—AC circuits, kinematics, signal processing.
- **NEW—Section on Julia sets**—The graphical depiction of iterated complex functions leads to interesting fractal patterns.
- **NEW—Early introduction of Euler's formula.**
- Physical interpretation of properties of analytic function as equilibrium temperature profiles
- **Two alternative presentations of Cauchy's theorem are given (Ch. 4)**—The first is based on the deformation of contours (homotopy). The second interprets contour integrals in terms of line integrals and invokes Green's theorem to complete the argument. These developments are presented parallel to one another. Either one may be read, and the other omitted, without disrupting the exposition.
- **Frequent use of analogies from elementary calculus or algebra to introduce complex concepts.**
- **Applications to "real world" engineering problems.**

### Contents

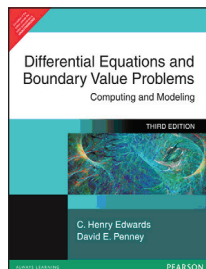
1. Complex Numbers.
2. Analytic Functions.
3. Elementary Functions.

4. Complex Integration.
  5. Series Representations for Analytic Functions.
  6. Residue Theory.
  7. Conformal Mapping.
- Answers to Odd-Numbered Problems.

### About the Author

**Edward B. Saff**, Vanderbilt University

## Differential Equations



### Differential Equations and Boundary Value Problems : Computing and Modeling, 3/e

**C. Henry Edwards**  
**David E. Penney**

ISBN: 9788131728222  
© 2010  
Pages: 708

### About the Book

This best-selling text by these well-known authors blends the traditional algebra problem solving skills with the conceptual development and geometric visualization of a modern differential equations course that is essential to science and engineering students. It reflects the new qualitative approach that is altering the learning of elementary differential equations, including the wide availability of scientific computing environments like Maple, Mathematica, and MATLAB. Its focus balances the traditional manual methods with the new computer-based methods that illuminate qualitative phenomena and make accessible a wider range of more realistic applications. Seldom-used topics have been trimmed and new topics added: it starts and ends with discussions of mathematical modeling of real-world phenomena, evident in figures, examples, problems, and applications throughout the text.

### Features

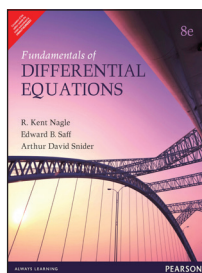
- **Approximately 2000 problems**—These problems span the range from computational problems to applied and conceptual problems. There are over 300 new qualitative problems in this edition.
- **NEW - Emphasis on the intersection of technology and ODEs**—Recognizes the need to instruct students in the new methods of computing differential equations.
- **NEW - 300 new computer-generated graphics**—Show vivid pictures of slope fields, solution curves, and phase plane portraits.
  - **NEW - Extensive expansion of qualitative solutions to the problem sets.**
  - **NEW - Fresh numerical methods emphasis**—Made possible by the early introduction of numerical solution techniques, mathematical modeling, stability and qualitative properties of differential equations. The text includes generic numerical algorithms that can be implemented in various technologies.
  - **NEW - Application Modules**—Follow key sections throughout the text; while many involve computational investigations, they are written in a technology-neutral manner. Technology-specific systems modules are available in the accompanying Applications Manual.
  - **NEW - Leaner and more streamlined coverage**—Shaped by the availability of computational aids.

### Contents

1. First Order Differential Equations.
  2. Mathematical Models and Numerical Methods.
  3. Linear Equations of Higher Order.
  4. Introduction to Systems of Differential Equations.
  5. Linear Systems of Differential Equations.
  6. Nonlinear Systems and Phenomena.
  7. Laplace Transform Methods.
  8. Power Series Methods.
  9. Fourier Series Methods.
  10. Eigenvalues and Boundary Value Problems.
- Appendix: Existence and Uniqueness of Solutions.  
Answers to Selected Problems.

### About the Author

**C. Henry Edwards**, University of Georgia, Athens  
**David E. Penney**, University of Georgia, Athens



### Fundamentals of Differential Equations, 8/e

**R Kent Nagle**

ISBN: 9789332570979  
© 2016  
Pages: 696



### About the Book

Fundamentals of Differential Equations presents the basic theory of differential equations and offers a variety of modern applications in science and engineering. Available in two versions, these flexible texts offer the instructor many choices in syllabus design, course emphasis (theory, methodology, applications, and numerical methods), and in using commercially available computer software. Fundamentals of Differential Equations, Eighth Edition is suitable for a one-semester sophomore- or junior-level course. Fundamentals of Differential Equations with Boundary Value Problems, Sixth Edition, contains enough material for a two-semester course that covers and builds on boundary value problems. The Boundary Value Problems version consists of the main text plus three additional chapters (Eigenvalue Problems and Sturm-Liouville Equations; Stability of Autonomous Systems; and Existence and Uniqueness Theory).

### Features

- Applications-driven sections are included in the chapter on linear second-order equations.
- Modernized treatment of the chapter on the introduction to systems and phase plane analysis increases student comprehension of the material.
- Group Projects relating to the material covered appear at the end of each chapter. They may involve more challenging applications, delve deeper into theory, or introduce more advanced topics.
- The expanded coverage of dynamical systems is consistent with the level of the text.
- The phase line is covered at the beginning of the text.
- Updated Instructor Manuals for MAPLE/Matlab/Mathematica, tied to the development of the text, Included are suggestions on incorporating these technologies into the courses, along with sample worksheets for labs.

### Contents

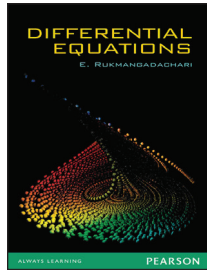
1. Introduction
2. First-Order Differential Equations
3. Mathematical Models and Numerical Methods Involving First Order Equations
4. Linear Second-Order Equations

5. Introduction to Systems and Phase Plane Analysis
6. Theory of Higher-Order Linear Differential Equations
7. Laplace Transforms
8. Series Solutions of Differential Equations
9. Matrix Methods for Linear Systems
10. Partial Differential Equations

#### Appendices

#### About the Author

R Kent Nagle / Edward B. Saff / Arthur David Snider



## Differential Equations

E. Rukmangadachari

ISBN: 9788131770375

© 2012

Pages: 472

#### About the Book

This book presents the basics of differential equations, adhering to the UGC curriculum for undergraduate courses on differential equations offered by all Indian universities. With equal emphasis on theoretical and practical concepts, the book provides a balanced coverage of all topics essential to master the subject at the undergraduate level, making it an ideal classroom text. Written in lucid, easy-to-understand language, the topics discussed in this student-friendly book are amply supported by exhaustive number of problems as well as over 300 solved examples and 400 end-of-chapter exercises.

#### Features

- Detailed coverage of integration in series
- In-depth coverage of differential equations of first order and first degree and linear equations with constant coefficients
- Focus on application-oriented concepts and problems
- Extensive coverage of Fourier integral transforms and partial differential equations.

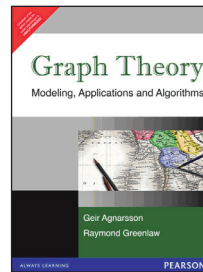
#### Contents

1. Formation of a Differential Equation
2. Differential Equations of First Order and First Degree
3. Linear Differential Equations with Constant Coefficients
4. Differential Equations of the First Order but not of the First Degree
5. Linear Equation of the Second Order with Variable Coefficients
6. Integration in Series: Legendre, Bessel and Chebyshev Functions
7. Fourier Integral Transforms
8. Partial Differential Equations

#### About the Author

**E. Rukmangadachari** is former head of the departments of computer science and engineering as well as humanities and sciences at Malla Reddy Engineering College, Secunderabad. A recipient of the Andhra Pradesh State Meritorious Teachers' Award in 1981, Professor Rukmangadachari has over 45 years' experience in teaching mathematics to undergraduate, postgraduate and engineering students.

## Discrete Mathematics and Graph Theory



## Graph Theory : Modeling, Applications and Algorithms

Geir Aagnarsson

Raymond Greenlaw

ISBN: 9788131717288

© 2008

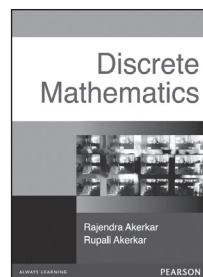
Pages: 464

#### About the Book

Once considered an "unimportant" branch of topology, graph theory has come into its own through many important contributions to a wide range of fields " and is now one of the fastest-growing areas in discrete mathematics and computer science. This new text introduces basic concepts, definitions, theorems, and examples from graph theory. The authors present a collection of interesting results from mathematics that involve key concepts and proof techniques; covers design and analysis of computer algorithms for solving problems in graph theory; and discuss applications of graph theory to the sciences. It is mathematically rigorous, but also practical, intuitive, and algorithmic.

#### Contents

1. Introduction to Graph Theory
2. Basic Concepts in Graph Theory
3. Trees and Forests
4. Spanning Trees
5. Fundamental Properties of Graphs and Digraphs
6. Connectivity and Flow
7. Planar Graphs
8. Graph Coloring
9. Coloring Enumerations and Chordal Graphs
10. Independence, Dominance, and Matchings
11. Cover Parameters and Matching Polynomials
12. Graph Counting
13. Graph Algorithms



## Discrete Mathematics

Rajendra Akerkar

Rupali Akerkar

ISBN: 9788131717943

© 2004

Pages: 332

#### About the Book

Discrete Mathematics provides an introduction to some of the fundamental concepts in modern mathematics. Abundant examples help explain the principles and practices of Discrete Mathematics. The book intends to cover material required by readers for whom mathematics is just a tool, as well as provide a strong foundation for mathematics majors. The vital role that Discrete Mathematics plays in computer science is strongly emphasized as well. The book is useful for students and instructors, and also software professionals.

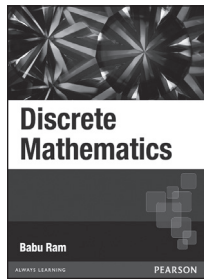


## Features

- User-friendly, conversational style of writing
- Covers topics such as combinatorics, proof methods, induction, sets, theory of automata
- Examples in each chapter bring clarity to the most complex concepts

## Contents

1. Proof Methods and Induction
2. Symbolic Logic
3. Set Theory
4. Relations
5. Functions and Recursion
6. Algebraic Structures
7. Graph Theory
8. Counting
9. Combinatorics
10. Automata
11. Program Verification
12. Design of Algorithms



## Discrete Mathematics

**Babu Ram**

ISBN: 9788131733103  
© 2011  
Pages: 584

## About the Book

*Discrete Mathematics* is an integral part of any undergraduate as well as post graduate courses in Computer Science and Mathematics. The syllabi of all these courses have been studied in depth and utmost care has been taken to ensure that all the essential topics in discrete structures are adequately emphasized. The book will enable the students to develop the requisite computational skills needed in software engineering.

## Features

- C Programs of important algorithms
- Extensive coverage of Boolean Algebra, Algebraic Structures and Graph Theory
- 550 Solved examples and 170 practice problems with hints/answers

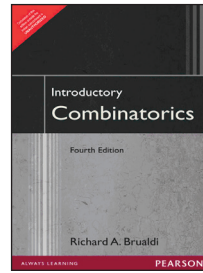
## Contents

1. Sets, Relations and Functions
2. Counting
3. Recurrence Relations
4. Logic
5. Algebraic Structures
6. Lattices
7. Boolean Algebra
8. Graphs
9. Finite State Automata
10. Languages and Grammars

## About the Author

**Babu Ram** received his Ph.D. degree in mathematics in 1973 from Kurukshetra University, Kurukshetra, India. He was formerly Professor of Mathematics and Dean, Faculty of Physical Sciences at Maharshi Dayanand University, Rohtak and has been teaching mathematics for the past 36 years. A member of Indian Mathematical Society and the American Mathematical Society, Professor Babu Ram has published 42 research papers in Real and Functional Analysis in international journals of repute. He is on the board

of reviewers of both American Mathematical Reviews and Zentralblatt für Mathematik und ihre Grenzgebiete, Berlin. Presently, he is working as Director MCA at Manav Rachna International University, Faridabad.



## Introductory Combinatorics, 4/e

**Richard A. Brualdi**

ISBN: 9788131718827  
© 2008  
Pages: 640

## About the Book

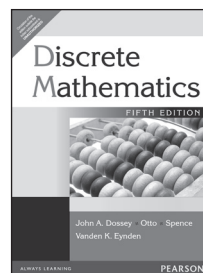
This, the best selling book in its market, emphasizes combinatorial ideas including the pigeon-hole principle, counting techniques, permutations and combinations, Pólya counting, binomial coefficients, inclusion-exclusion principle, generating functions and recurrence relations, and combinatorial structures (matchings, designs, graphs), flows in networks.

## Features

- **NEW - New problems in each chapter**-Many more challenging problem sets have been added.
- **Presents an excellent treatment of Pólya's Counting Theorem that doesn't assume students have seen group theory.**
- **Many worked examples.**

## Contents

1. What Is Combinatorics?
2. The Pigeonhole Principle.
3. Permutations and Combinations.
4. Generating Permutations and Combinations.
5. The Binomial Coefficients.
6. The Inclusion-Exclusion Principle and Applications.
7. Recurrence Relations and Generating Functions.
8. Special Counting Sequences.
9. Matchings in Bipartite Graphs.
10. Combinatorial Designs.
11. Introduction to Graph Theory.
12. Digraphs and Networks.
13. More on Graph Theory.
14. Pólya Counting.



## Discrete Mathematics, 5/e

**John A. Dossey**  
**Charles Vanden Eynden**  
**Albert D. Otto**  
**Lawrence E. Spence**

ISBN: 9788131766262  
© 2006  
Pages: 684

## About the Book

An ever-increasing percentage of mathematic applications involve discrete rather than continuous models. Driving this trend is the integration of the computer into virtually every aspect of modern society. Intended for a one-semester introductory course, the strong algorithmic emphasis of Discrete Mathematics is independent of a specific programming language, allowing students to concentrate on foundational problem-solving and analytical skills.

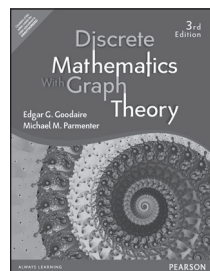
Instructors get the topical breadth and organizational flexibility to tailor the course to the level and interests of their students.

### Features

- **Approach:** A strong algorithmic emphasis serves to unify the material. Algorithms are presented in English, eliminating the need for knowledge of a particular programming language.
- **Supplementary Exercises:** Ending each chapter, these sets of supplementary exercises reprise the most important concepts and techniques of the chapter and explore new ideas not covered elsewhere.
- **Coding Theory:** A new chapter 3 has been added that includes material on Matrix Codes, Error Correcting Codes, Congruence, Euclidean Algorithm and Diophantine Equations, and the RSA Algorithm.
- **Choice of Topics:** Based upon the recommendations of respected professional organizations--the MAA's Panel on Discrete Mathematics in the First Two Years, the NCTM's Principles and Standards for School Mathematics, and the CBMS's recommendations for the mathematical education of teachers--this text offers a solid, comprehensive introduction to discrete mathematics.

### Contents

1. An Introduction to Combinatorial Problems and Techniques
2. Recurrence Relations and Generating Functions
3. Combinatorial Circuits and Finite State Machines
4. Sets, Relations, and Functions
5. Coding Theory
6. Graphs
7. Trees
8. Matching
9. Network Flows
10. Counting Techniques



## Discrete Mathematics with Graph Theory, 3/e

Edgar G. Goodaire  
Michael M. Parmenter

ISBN: 9789332549777  
© 2015  
Pages: 592



### About the Book

Far more "user friendly" than the vast majority of similar books, this text is truly written with the "beginning" reader in mind. The pace is tight, the style is light, and the text emphasizes theorem proving throughout. The authors emphasize "Active Reading," a skill vital to success in learning how to think mathematically (and write clean, error-free programs).

### Features

- A friendly, conversational, humorous style – Makes this top seller stimulating and engaging for the reader.
- More than 150 Pauses (short questions) – Inserted at strategic points. Full solutions to Pauses are included at the end of each section.
- Emphasis on writing and critical-thinking skills.
- More than 300 worked examples and 3500 exercises. The problem sets are carefully graded by level of difficulty.
- Topics in discrete math are used as a vehicle for teaching proofs.
- An unusually strong emphasis on graph theory, incorporating its coverage throughout six chapters.
- A glossary of definitions and a list of symbols and notation.

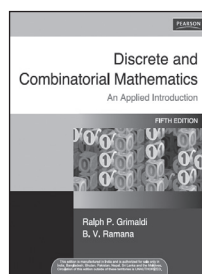
### Contents

0. Yes, There Are Proofs!
1. Logic
2. Sets and Relations
3. Functions
4. The Integers
5. Induction and Recursion
6. Principles of Counting
7. Permutations and Combinations
8. Algorithms
9. Graphs
10. Paths and Circuits
11. Applications of Paths and Circuits
12. Trees
13. Planar Graphs and Colorings
14. The Max Flow – Min Cut Theorem

### About the Author

Edgar G. Goodaire, *Memorial University of Newfoundland*

Michael M. Parmenter, *Memorial University of Newfoundland*



## Discrete and Combinatorial Mathematics, 5/e

Ralph P. Grimaldi  
B. V. Ramana

ISBN: 9788177584240  
© 2006  
Pages: 1056

### About the Book

This fifth edition continues to improve on the features that have made it the market leader. The text offers a flexible organization, enabling instructors to adapt the book to their particular courses. The book is both complete and careful, and it continues to maintain its emphasis on algorithms and applications. Excellent exercise sets allow students to perfect skills as they practice. This new edition continues to feature numerous computer science applications-making this the ideal text for preparing students for advanced study.

### Features

- Historical reviews and biographies bring a human element to their assignments.
- Chapter summaries allow students to review what they have learned.
- Expanded treatment of discrete probability in Chapter 3.
- New material on cryptology, private-key cryptosystems in Chapter 13, public-key RSA cryptosystems in Chapter 15.

### Contents

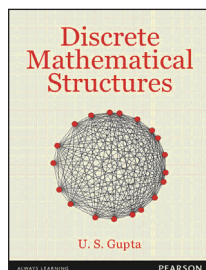
1. Fundamental Principles of Counting
2. Fundamentals of Logic
3. Set theory
4. Properties of the integers: Mathematical Induction
5. Relations and Functions
6. Language: Finite State Machines
7. Relations: The Second Time Around
8. The Principle of Inclusion and Exclusion
9. Generating Functions
10. Recurrence Relations
11. An introduction to graph theory
12. Trees
13. Rings and modular arithmetic
14. Boolean algebra and switching functions
15. Algebraic structures, semigroups, monoids, groups, coding theory and

polya's method of enumeration

16. Finite fields and combinatorial designs

### About the Author

**Ralph P. Grimaldi**, Rose-Hulman Institute of Technology **B.V. Ramana**, Professor of Mathematics, JNTU College of Engineering, Kakinada, India & Professor of Mathematics, Eritrean Institute of Technology, Eritrea (N.E. Africa) (On Special duty)



## Discrete Mathematical Structures

**U.S. Gupta**

ISBN: 9789332521391

© 2014

Pages: 576

### About the Book

Discrete Mathematical Structures provides comprehensive, reasonably rigorous and simple explanation of the concepts with the help of numerous applications from computer science and engineering.

Every chapter is equipped with a good number of solved examples that elucidates the definitions and theorems discussed. Chapter-end exercises are graded, with the easier ones in the beginning and then the complex ones, to help students for easy solving.

### Features

- Over 250 unsolved questions
- Around 400 solved examples

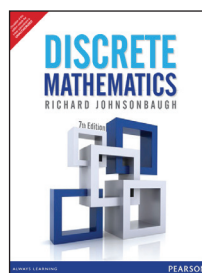
### Contents

1. Set Theory
2. Relations and Digraphs
3. Functions
4. Mathematical Logic and Methods of Proofs
5. Combinatorics
6. Recurrence Relations and Generating Functions
7. Algebraic Structures
8. Ordered Sets and Lattices
9. Boolean Algebra
10. Graph Theory
11. Trees
12. Vector Spaces

### About the Author

**Uma Shanker Gupta** joined the department of mathematics, the University of Roorkee (presently IIT-Roorkee), in 1967, after teaching for five years at Ewing Christian Degree College, Allahabad. He was awarded PhD (Mathematics) by the University of Roorkee in 1971.

He has been a reviewer of many International journals like Journal of Applied Mechanics, Journal of Sound and Vibration to name a few. He became EMERITUS FELLOW in 2004 and held this position till 2006.



## Discrete Mathematics, 7/e

**Richard Johnsonbaugh**

ISBN: 9789332535183

© 2014

Pages: 768

### About the Book

Focused on helping students understand and construct proofs and expanding their mathematical maturity, this best-selling text is an accessible introduction to discrete mathematics. Johnsonbaugh's algorithmic approach emphasizes problem-solving techniques. The Seventh Edition reflects user and reviewer feedback on both content and organization.

### Features

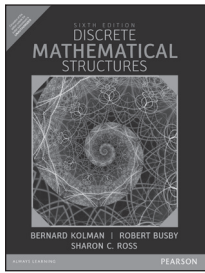
- **Strong emphasis on reading and writing proofs** – Illustrates most proofs of theorems with annotated figures to provide additional explanation and insight into the proofs.
- **Extensive discussion of algorithms, recursive algorithms, and the analysis of algorithms** – The algorithms are written in a flexible form of pseudocode, which resembles currently popular languages such as C, C++, and Java.
- **Over 500 worked examples** throughout the text.
- **Over 3500 exercises** – Approximately one third have answers at the back of the book.
- **Extensive applications** with an emphasis on computer science.
- **Figures and tables** – Illustrate concepts, show how algorithms work, elucidate proofs, and motivate the material. Figure captions provide additional explanation and insight into figures accompanying proofs.

### Contents

- 1 Sets and Logic
  - 2 Proofs
  - 3 Functions, Sequences, and Relations
  - 4 Algorithms
  - 5 Introduction to Number Theory
  - 6 Counting Methods and the Pigeonhole Principle
  - 7 Recurrence Relations
  - 8 Graph Theory
  - 9 Trees
  - 10 Network Models
  - 11 Boolean Algebras and Combinatorial Circuits
  - 12 Automata, Grammars, and Languages
- Appendix
- A Matrices
  - B Algebra Review
  - C Pseudocode
- References  
Hints and Solutions to Selected Exercises Index

### About the Author

**Richard Johnsonbaugh** is Professor Emeritus of Computer Science, Telecommunications and Information Systems, DePaul University, Chicago. Prior to his 20-year service at DePaul University, he was a member and sometime chair of the mathematics departments at Morehouse College and Chicago State University. He has a B.A. degree in mathematics from Yale University, M.A. and Ph.D. degrees in mathematics from the University of Oregon, and an M.S. degree in computer science from the University of Illinois, Chicago. His most recent research interests are in pattern recognition, programming languages, algorithms, and discrete mathematics. He is the author or co-author of numerous books and articles in these areas. Several of his books have been translated into various languages. He is a member of the Mathematical Association of America.



## Discrete Mathematical Structures, 6/e

**Bernard Kolman**  
**Robert Busby, Sharon C. Ross**

ISBN: 9789332549593

© 2015

Pages: 552

### About the Book

Discrete Mathematical Structures, Sixth Edition, offers a clear and concise presentation of the fundamental concepts of discrete mathematics. Ideal for a one-semester introductory course, this text contains more genuine computer science applications than any other text in the field.

This book is written at an appropriate level for a wide variety of majors and non-majors, and assumes a college algebra course as a prerequisite.

### Features

- The focus on computer science prepares students for future computer science careers.
- The emphasis on proof lays the foundation for mathematical thinking.
- Clear organization of topics prevents students from being overwhelmed. The authors treat relations and digraphs as two aspects of the same fundamental idea, which is then used as the basis of virtually all the concepts introduced in the book.
- Vignettes of mathematical history open each chapter, providing students with a practical background of how these ideas were developed.
- Additional number theory coverage provides more information on the properties of integers, including base  $n$  representations, and gives more contexts for isomorphism.
- Cryptology is explored throughout the book, introducing students to this exciting field.
- Coverage of coding provides students with a full picture of all of its aspects, including efficiency, effectiveness, and security. A set of coding exercises for each chapter is also included in Appendix C.
- Exercises emphasize multiple representations of concepts, and provide practice on reading and writing mathematical proofs.
- Experiments provide opportunities for in-depth exploration and discovery, as well as for writing and for working in groups. Topics include weighted voting systems, Petri nets, Catalan numbers, and others.
- End-of-chapter material includes Tips for Proofs, a summary of Key Ideas, and a Self-Test, which contains a set of conceptual review questions to help students identify and synthesize the main ideas of each chapter.

### Contents

1. Fundamentals
2. Logic
3. Counting
4. Relations and Digraphs
5. Functions
6. Order Relations and Structures
7. Trees
8. Topics in Graph Theory
9. Semigroups and Groups
10. Groups and Coding
11. Languages and Finite-State Machines

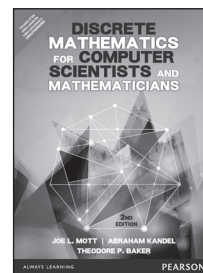
### About the Author

**Bernard Kolman** received his BS in mathematics and physics from Brooklyn College in 1954, his ScM from Brown University in 1956, and his PhD from the University of Pennsylvania in 1965, all in mathematics. He has worked as a mathematician for the US Navy and IBM. He has been a member of the mathematics department at Drexel University since 1964, and has served as Acting Head of the department. His research activities have included Lie

algebra and operations research. He belongs to a number of professional associations and is a member of Phi Beta Kappa, Pi Mu Epsilon, and Sigma Xi.

**Robert C. Busby** received his BS in physics from Drexel University in 1963, his AM in 1964 and PhD in 1966, both in mathematics from the University of Pennsylvania. He has served as a faculty member of the mathematics department at Drexel since 1969. He has consulted in applied mathematics and industry and government, including three years as a consultant to the Office of Emergency Preparedness, Executive Office of the President, specializing in applications of mathematics to economic problems. He has written a number of books and research papers on operator algebra, group representations, operator continued fractions, and the applications of probability and statistics to mathematical demography.

**Sharon Cutler Ross** received a SB in mathematics from the Massachusetts Institute of Technology in 1965, an MAT in secondary mathematics from Harvard University in 1966, and a PhD in mathematics from Emory University in 1976. She has taught junior high, high school, and college mathematics, and has taught computer science at the collegiate level. She has been a member of the mathematics department at DeKalb College. Her current professional interests are in undergraduate mathematics education and alternative forms of assessment. Her interests and associations include the Mathematical Association of America, the American Mathematical Association of Two-Year Colleges, and UME Trends. She is a member of Sigma Xi and other organizations.



## Discrete Mathematics for Computer Scientists

**Joe L. Mott**  
**Abraham Kandel**

ISBN: 9789332550490

© 2015

Pages: 768



### About the Book

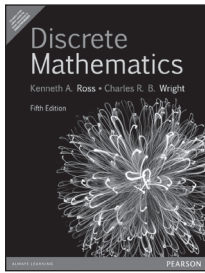
This is a lucidly written fine-tuned introduction to discrete mathematics. It is eminently suited for students pursuing BCA, MCA and B.E./B.Tech courses. Considering the importance of the subject, quite a number of universities have sought to introduce discrete mathematics as a core subject in the engineering curriculum.

### Features

- Comprehensive discussions on graph theory, mathematical induction, Boolean algebras, logic and other proof techniques and recurrence relations have been dealt with.
- Gives good insights into graphs as a modeling tool.
- Gives better understanding of computer solutions of differential equations.
- Many worked out examples and solutions follow each section.

### Contents

Acknowledgments  
A Note to the Reader  
Foundations  
Elementary Combinatorics  
Recurrence Relations  
Relations and Digraphs  
Graphs  
Boolean Algebras  
Network Flows  
Representation and Manipulation of Imprecision  
Bibliography



## Discrete Mathematics, 5/e

**Kenneth A. Ross**  
**Charles R. Wright**

ISBN: 9788131790618  
© 2012  
Pages: 635

### About the Book

Revised for extra clarity, the distinguishing characteristic of Ross and Wright is a sound mathematical treatment that increases smoothly in sophistication. The text presents utility-grade discrete math tools so students can understand them, use them, and move on to more advanced mathematical topics

### Features

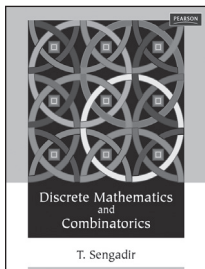
- NEW - Over 270 supplementary exercises All with answers
- NEW - Full chapter on discrete probability
- NEW - Chapter on algebraic structures
- Comprehensive coverage of logic and proofs
- Full chapter on recursion

### Contents

1. Sets, Sequences, and Functions
2. Elementary Logic
3. Relations
4. Induction and Recursion
5. Counting
6. Introduction to Graphs and Trees
7. Recursion, Trees and Algorithms
8. Digraphs
9. Discrete Probability
10. Boolean Algebra
11. More on Relations
12. Algebraic Structures
13. Predicate Calculus and Infinite Sets

### About the Author

**Kenneth A. Ross**, University of Oregon  
**Charles R. Wright**, University of Oregon



## Discrete Mathematics and Combinatorics

**T. Sengadir**

ISBN: 9788131714058  
© 2009  
Pages: 568

### About the Book

*Discrete Mathematics and Combinatorics* provides a concise and practical introduction to the core components of discrete mathematics, featuring a balanced mix of basic theories and applications. The book covers both fundamental concepts such as sets and logic, as well as advanced topics such as graph theory and Turing machines. The example-driven approach will help readers in understanding and applying the concepts. Other pedagogical tools illustrations, practice questions, and suggested reading facilitate learning and mastering the subject.

### Features

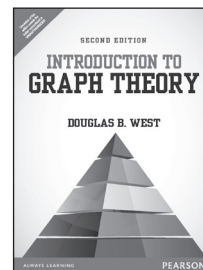
- Mathematical concepts explained in a simple and understandable form.
- Well-structured organization of chapters, moving from simple to complex.
- Numerous worked examples and illustrations to introduce concepts
- A rich and varied set of practice questions to reinforce the concepts.
- Appendices on mathematical prerequisites trigonometry, matrices and basic algebra.

### Contents

1. Equations, Inequalities and Basic Logic
2. Sets, Functions and Relations
3. Logic
4. Permutations and Combinations
5. Mathematical Induction, Principle of Inclusion and Exclusion and Pigeon Hole Principle
6. Recurrence Relations
7. Number Theory
8. Groups, Rings and Fields
9. Graph Theory
10. Posets, Lattices and Boolean Algebras
11. Formal Languages and Language Acceptors
12. Turing Machines and Computable Functions
13. Coding Theory
14. Discrete Probability

### About the Author

**T. Sengadir** is an Associate Professor in the Department of Mathematics at SSN College of Engineering, Chennai.



## Introduction to Graph Theory, 2/e

**Douglas B. West**

ISBN: 9789332549654  
© 2015  
Pages: 470



### About the Book

For undergraduate or graduate courses in Graph Theory in departments of mathematics or computer science.

This text offers a comprehensive and coherent introduction to the fundamental topics of graph theory. It includes basic algorithms and emphasizes the understanding and writing of proofs about graphs. Thought-provoking examples and exercises develop a thorough understanding of the structure of graphs and the techniques used to analyze problems. The first seven chapters form the basic course, with advanced material in Chapter 8.

### Features

**NEW** - Appendix of Mathematical Background—Appendix A presents background material on logical statements, basic set theory, equivalence relations, and elementary counting.

Makes review material easily accessible for beginning students (Chapter 1 still discusses central proof techniques).

**NEW** - Expanded and improved selection of exercises—Exercises have been added, especially easier exercises, and many exercises have been further clarified.

Enlarged selection of easier exercises provides greater encouragement for beginning students and makes the material useful for a broader range of students.

NEW - Reorganization of material. Some material has been reorganized to provide a smoother development and clearer focus on essential material with optional material clearly designated or removed.  
Facilitates more efficient learning by aiding instructors in designing courses and students in seeing what is important.

NEW - Definitions more prominent. Terms being defined are in bold type and most important definitions occur in numbered items.  
Makes definitions easier for students to find.

NEW - Hints for selected exercises—More hints have been added as Appendix C. Allows students to learn at their own pace; weaker students have more opportunity to be successful; stronger students have more opportunity to be stimulated.

Logical organization—Concepts are introduced as needed, achieving a gradual increase in intellectual difficulty.  
Allows students to find fundamental results in the early sections of chapters and to master elementary concepts in preparation for later applications.

Additional topics—Final chapter is a bridge to advanced topics.  
Provides supplementary reading for good students and flexibility in advanced courses.

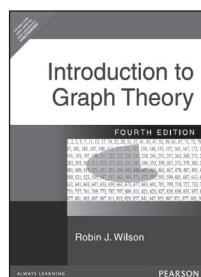
Over 400 illustrations.  
Allows students to check their understanding of definitions and of steps in proofs.

Over 1200 exercises—Ranging from relatively straightforward applications of ideas in the text to subtle problems requiring some ingenuity.  
Helps students to understand the ideas of the course and to improve their presentation of coherent arguments.

Graduation of exercises—Denotes easier exercises by (-), harder by (+), and particularly valuable or instinctive exercises by (!).  
Aids instructor in selecting appropriate exercises and students in practicing for tests.

### Contents

1. Fundamental Concepts.  
What Is a Graph? Paths, Cycles, and Trails. Vertex Degrees and Counting. Directed Graphs.
  2. Trees and Distance.  
Basic Properties. Spanning Trees and Enumeration. Optimization and Trees.
  3. Matchings and Factors.  
Matchings and Covers. Algorithms and Applications. Matchings in General Graphs.
  4. Connectivity and Paths.  
Cuts and Connectivity.  $k$ -connected Graphs. Network Flow Problems.
  5. Coloring of Graphs.  
Vertex Colorings and Upper Bounds. Structure of  $k$ -chromatic Graphs. Enumerative Aspects.
  6. Planar Graphs.  
Embeddings and Euler's Formula. Characterization of Planar Graphs. Parameters of Planarity.
  7. Edges and Cycles.  
Line Graphs and Edge-Coloring. Hamiltonian Cycles. Planarity, Coloring, and Cycles.
  8. Additional Topics (Optional).  
Perfect Graphs. Matroids. Ramsey Theory. More Extremal Problems. Random Graphs. Eigenvalues of Graphs.
- Appendix A: Mathematical Background.  
Appendix B: Optimization and Complexity.  
Appendix C: Hints for Selected Exercises.  
Appendix D: Glossary of Terms.  
Appendix E: Supplemental Reading.  
Appendix F: References.



## Introduction to Graph Theory, 4/e

Robin J. Wilson

ISBN: 9788131706985

© 1996

Pages: 184

### About the Book

Graph Theory has recently emerged as a subject in its own right, as well as being an important mathematical tool in such diverse subjects as operational research, chemistry, sociology, and genetics. This book provides a comprehensive introduction to the subject.

### Features

- Provides a basic foundation for the course.
- Text has been completely revised.
- Includes full range of exercises of varying difficulty.
- Incorporates new material on algorithms, tree-searches, and graph-theoretical puzzles.
- Full solutions are provided for many of the exercises.
- Includes a chapter on matroid theory, which is used to consolidate some of the material from earlier chapters.

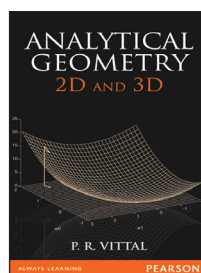
### Contents

1. Introduction.
2. Definitions and Examples.
3. Paths and Cycles.
4. Trees.
5. Planarity.
6. Coloring Graphs.
7. Digraphs.
8. Matching, Marriage and Menger's Theorem.
9. Matroids.

### About the Author

Robin J. Wilson is Dean and Director of Studies in the Faculty of Mathematics and Computing at the Open University.

## Geometry



## Analytical Geometry: 2D and 3D

P R Vittal

ISBN: 9788131773604

© 2013

Pages: 752

### About the Book

Designed to meet the requirements of UG students, the book deals with the theoretical as well as the practical aspects of the subject. Equal emphasis has been given to both 2D as well as 3D geometry. The book follows a systematic approach with adequate examples for better understanding of the concepts.

## Features

Designed to meet the requirements of UG students, the book deals with the theoretical as well as the practical aspects of the subject. Equal emphasis has been given to both 2D as well as 3D geometry. The book follows a systematic approach with adequate examples for better understanding of the concepts.

## Contents

### PART I

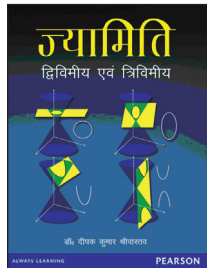
1. Coordinate Geometry
2. Straight Line
3. Pair of straight lines
4. Circle
5. System of circles
6. Parabola
7. Ellipse
8. Hyperbola
9. Polar co-ordinates
10. Tracing of Curves

### PART II

11. Three dimension
12. Plane
13. Straight line
14. Sphere
15. Cone
16. Cylinder

## About the Author

**P. R. Vittal** was a postgraduate professor of mathematics at Ramakrishna Mission Vivekananda College, Chennai, from where he retired as principal in 1996. His assignments as visiting professor took him to Western Carolina University, USA. Currently, Vittal is a visiting professor at the Department of Statistics, University of Madras; The Institute of Chartered Accountants of India, Chennai; the Institute for Technology and Management, Chennai; and National Management School, Chennai, besides being a research guide for management science at BITS Pilani.



## Geometry-Hindi

**Dr. Deepak Kumar Srivastava**

ISBN: 9788131791226

© 2013

Pages: 660

## About the Book

The Book is based on the introductory topic of Geometry at the BSC level. This text is a first of its kind which facilitates the understanding of the subject for readers of all level.

## Features

Based on the revised syllabus of all Universities, Upgraded Discussion on Geometry. The subject matter is explained with help of different detailed diagrams. The important areas of geometry has been explained in easy & Lucid language.

## Contents

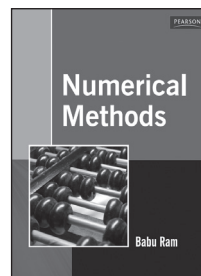
1. Prammbhik vivechna.
2. Dhuvriya samikaran(saral rekha aur virrt)
3. Shankav ka dhuvriya samikaran.
4. Shankav ka dwighatiya samikarn.
5. Vyapak shankav,dwik shampark/sparsh,shanabhi shankav.

6. Shankav anurekhan.
7. Adharbhut jaankari.
8. Dwik kojya aur Dwik anupat.
9. Samtal.
10. Saral rekha.
11. Gola.
12. Belan.
13. Shanku.
14. Kendriya shankvaj.
15. Shankvaj ki samtal Kaat.
16. Dwighatiya samikaran ka samayan.
17. Janak rekhaye.

## About the Author

**Dr D.K Srivastava Reader** in the department of Mathematics in Bappab Sri- Narayanan Post Graduate college. He has published a number of Journals & Articles in different National Seminars.

## Mathematical/Numerical Methods



## Numerical Methods

**Babu Ram**

ISBN: 9788131732212

© 2010

Pages: 520

## About the Book

**Numerical Methods** is a mathematical tool used by engineers and mathematicians to do scientific calculations. It is used to find solutions to applied problems where ordinary analytical methods fail. This book is intended to serve for the needs of courses in Numerical Methods at the Bachelors' and Masters' levels at various universities.

## Features

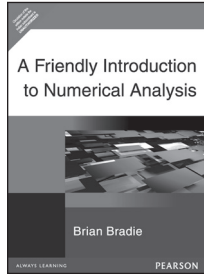
- Concise and easy-to-understand treatment of concepts
- Most of the numerical methods have been described technically along with the convergence and error propagation
- 260 solved examples
- 160 practice problems
- Error analysis using various methods
- C programs of important numerical methods

## Contents

1. Preliminaries
2. Non-Linear Equations
3. Linear Systems of Equations
4. Eigenvalues and Eigenvectors
5. Finite Differences and Interpolation
6. Curve Fitting
7. Numerical Differentiation
8. Numerical Quadrature
9. Difference Equations
10. Ordinary Differential Equations
11. Partial Differential Equations
12. Elements of C Language

## About the Author

**Babu Ram** received his Ph.D. degree in Mathematics in 1973 from Kurukshetra University, Kurukshetra, India. He retired from Maharshi Dayanand University, Rohtak in 2006 as Professor of Mathematics and Dean, Faculty of Physical Sciences. Currently, he is Programme Director (MCA) at Manav Rachna International University, Faridabad (Haryana). He has published 42 research papers in Real and Functional Analysis in international journals of repute.



## A Friendly Introduction to Numerical Analysis

**Brian Bradie**

ISBN: 9788131709429

© 2007

Pages: 974

## About the Book

This student-friendly text develops concepts and techniques in a clear, concise, easy-to-read manner, followed by fully-worked examples. Application problems drawn from the literature of many different fields prepares students to use the techniques covered to solve a wide variety of practical problems.

## Features

- A theme of comparing/ contrasting numerical methods for accuracy, error, boundaries, and speed of convergence
- Chapters organized thematically around mathematical problems—Each chapter is devoted to a single type of problem. Within each chapter, the presentation begins with the simplest, most basic methods and progresses gradually to more advanced topics.
- Exercise Sets—Features roughly 1000 numbered exercises (many with multiple parts). An appropriate balance of theoretical, applications, and coding questions.

## Contents

Getting Started.

Root finding.

Systems of Equations.

Eigenvalues and Eigenvectors.

Interpolation and Curve Fitting.

Numerical Differentiation and Integration.

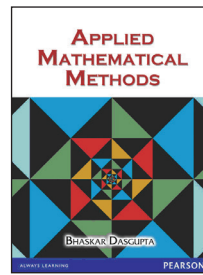
Numerical Methods for Initial Value Problems of Ordinary Differential Equations.

Second-Order One-Dimensional Two-Point Boundary Value Problems.

Finite Difference Method for Elliptic Partial Differential Equations.

Finite Difference Method for Parabolic Partial Differential Equations.

Finite Difference Method for Hyperbolic Partial Differential Equations and the Convection-Diffusion Equation



## Applied Mathematical Methods

**Bhaskar Dasgupta**

ISBN: 9788131700686

© 2006

Pages: 524

## About the Book

This book covers the material vital for research in today's world and can be covered in a regular semester course. It is the consolidation of the efforts of teaching the compulsory first semester post-graduate applied mathematics course at the Department of Mechanical Engineering at IIT Kanpur in two successive years.

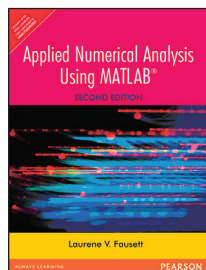
## Contents

1. Preliminary Background
2. Matrices and Linear Transformations
3. Operational Fundamentals of Linear Algebra
4. Systems of Linear Equations
5. Gauss Elimination Family of Methods
6. Special Systems and Special Methods
7. Numerical Aspects in Linear Systems
8. Eigenvalues and Eigenvectors
9. Diagonalization and Similarity Transformations
10. Jacobi and Givens Rotation Methods
11. Householder Transformation and Tridiagonal Matrices
12. QR Decomposition Method
13. Eigenvalue Problem of General Matrices
14. Singular Value Decomposition
15. Vector Spaces: Fundamental Concepts\*
16. Topics in Multivariate Calculus
17. Vector Analysis: Curves and Surfaces
18. Scalar and Vector Fields
19. Polynomial Equations
20. Solution of Nonlinear Equations and Systems
21. Optimization: Introduction
22. Multivariate Optimization
23. Methods of Nonlinear Optimization\*
24. Constrained Optimization
25. Linear and Quadratic Programming Problems\*
26. Interpolation and Approximation
27. Basic Methods of Numerical Integration
28. Advanced Topics in Numerical Integration\*
29. Numerical Solution of Ordinary Differential Equations
30. ODE Solutions: Advanced Issues
31. Existence and Uniqueness Theory
32. First Order Ordinary Differential Equations
33. Second Order Linear Homogeneous ODE's
34. Second Order Linear Non-Homogeneous ODE's
35. Higher Order Linear ODE's
36. Laplace Transforms
37. ODE Systems
38. Stability of Dynamic Systems
39. Series Solutions and Special Functions
40. Sturm-Liouville Theory
41. Fourier Series and Integrals
42. Fourier Transforms
43. Minimax Approximation\*
44. Partial Differential Equations
45. Analytic Functions
46. Integrals in the Complex Plane
47. Singularities of Complex Functions
48. Variational Calculus\*



## About the Author

**Bhaskar Dasgupta** is associate professor in the Department of Mechanical Engineering at Indian Institute of Technology Kanpur. He received his doctorate from the Indian Institute of Science, Bangalore, India in 1997. His ever-expanding research interests include topics in robotics such as serial and parallel manipulators, and motion planning methods; as well as nonlinear optimization, domain mapping, geometric modelling and protein docking. In his spare time, he takes a zealous interest in languages, literature, history and philosophy.



## Applied Numerical Analysis Using MATLAB, 2/e

**Laurene V. Fausett**

ISBN: 9788131728536

© 2009

Pages: 688

## About the Book

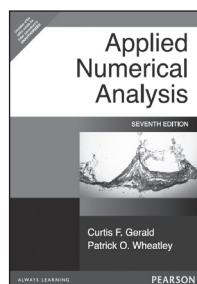
This text is appropriate for undergraduate courses on numerical methods and numerical analysis found in engineering, mathematics & computer science departments. Each chapter uses introductory problems from specific applications. These easy-to-understand problems clarify for the reader the need for a particular mathematical technique. Numerical techniques are explained with an emphasis on why they work.

## Features

- Full-page overview for each chapter “ Includes two applications to introduce each chapter (except the first introductory chapter)
- End-of-chapter “Beyond the Basics” or “Further Topics” “ Introduce more advanced methods, often including those used by MATLAB and other professionally developed software packages.
- Chapter Wrap-Up “ Includes a summary of the formulas for the basic methods presented in the chapter, suggestions for further reading, and several types of exercises.
- Practice the Techniques problems “ Present fairly straightforward problems that encourage “practice by hand” or verification of simple MATLAB programs.

## Contents

1. Foundations
2. Functions of One Variable
3. Solving Linear Systems: Direct Methods
4. LU and QR Factorization
5. Eigenvalues and Eigenvectors
6. Solving Linear Systems: Iterative Methods
7. Nonlinear Functions of Several Variables
8. Interpolation
9. Approximation
10. Fourier Methods
11. Numerical Differentiation and Integration
12. Ordinary Differential Equations: Fundamentals
13. ODE: Systems, Stiffness, Stability
14. ODE: Boundary-Value Problems
15. Partial Differential Equations



## Applied Numerical Analysis, 7/e

**Curtis F. Gerald**

ISBN: 9788131717400

© 2007

Pages: 624

## About the Book

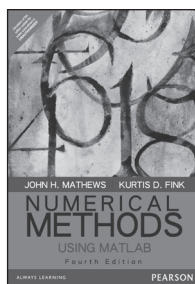
The seventh edition of this classic text has retained the features that make it popular, while updating its treatment and inclusion of Computer Algebra Systems and Programming Languages. The exercise sets include additional challenging problems and projects which show practical applications of the material. Also, sections which discuss the use of computer algebra systems such as Maple®, Mathematica®, and MATLAB®, facilitate the integration of technology in the course. Furthermore, the text incorporates programming material in both FORTRAN and C. The breadth of topics, such as partial differential equations, systems of nonlinear equations, and matrix algebra, provide comprehensive and flexible, coverage of all aspects of numerical analysis.

## Features

- Applied problems and applications emphasize real applications not detailed mathematical theorems
- Computer programs in either Fortran 90 or C are given at the conclusion of each chapter.
- Treats Linear systems before non-linear systems.
- The pace of topic presentation is appropriate for the audience.
- Excellent treatment of parallel processing.

## Contents

1. Solving Nonlinear Equations.
2. Solving Sets of Equations.
3. Interpolation and Curve Fitting.
4. Approximation of Functions.
5. Numerical Differentiation and Integration.
6. Numerical Solution of Ordinary Differential Equations.
7. Optimization.
8. Partial Differential Equations.
9. Finite Element Analysis.



## Numerical Methods Using Matlab, 4/e

**John H. Mathews**

**Kurtis K. Fink**

ISBN: 9789332549357

© 2015

Pages: 696

New

## About the Book

This book provides a fundamental introduction to numerical analysis for undergraduate students in the areas of mathematics, computer science, physical sciences, and engineering. Knowledge of calculus is assumed.

## Features

- NEW - Expanded emphasis on analysis of competing methods and issues of error.
- NEW - Rewritten chapter on numerical optimization.

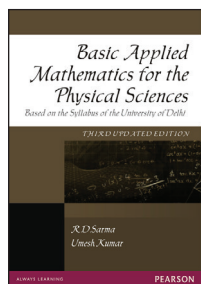
- NEW - New topics for minimization of  $z = f(x,y)$  are included.
- NEW - Projects for undergraduate library research experience have been added.
- Explicit use of the software MATLAB is offered.
- Each numerical method is presented in a self-contained format.
- Balance of theory and application.
- A variety of problems to sharpen students skills with extensive problem sets with a wide variety of activities.
- A wealth of tables and graphs which illustrates computer calculations in examples making the resulting numerical approximations easier to interpret.

### Contents

1. Preliminaries.
  2. The Solution of Nonlinear Equations  $f(x) = 0$ .
  3. The Solution of Linear Systems  $AX = B$ .
  4. Interpolation and Polynomial Approximation.
  5. Curve Fitting.
  6. Numerical Differentiation.
  7. Numerical Integration.
  8. Numerical Optimization.
  9. Solution of Differential Equations.
  10. Solution of Partial Differential Equations.
  11. Eigenvalues and Eigenvectors.
- Appendix: An Introduction to MATLAB.  
Answers to Selected Exercises.

### About the Author

**John H. Mathews**, *California State University, Fullerton*  
**Kurtis K. Fink**, *Northwest Missouri State University*



### Basic Applied Mathematics for the Physical Sciences, third updated edition : Based on the syllabus of the University of Delhi, 3/e

**R. D. Sarma**  
**Umesh kumar**

ISBN: 9788131787823  
© 2012  
Pages: 440

### About the Book

*Basic Applied Mathematics for the Physical Sciences* offers an introductory course in mathematics for the undergraduate students of physical sciences and applied physical sciences in the University of Delhi. Well structured into three parts, this book presents an in-depth study of matrices, calculus and complex numbers. It provides a perfect blend of theoretical principles and numerical problems to help students enhance their understanding of mathematical concepts and their applications. A student-friendly approach and an easy-paced treatment of all relevant topics make this book useful for students of mathematics.

### Features

- Completely covers the semester-wise revised syllabus of the University of Delhi
- Includes the University of Delhi's solved question papers for the years 2010-11 and 2011-12
- Mathematical concepts explained using illustrative examples, diagrams and problems from various domains of science
- More than 350 solved examples interspersed in the text
- 700 practice problems

- Statistical, logarithmic and exponential tables provided, making the text completely self-contained

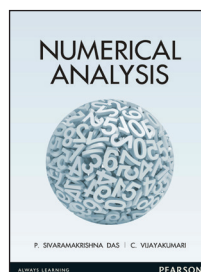
### Contents

1. Matrices
2. Vectors in  $R^2$  and  $R^3$
3. Linear Transformations
4. Eigenvalues and Eigenvectors
5. Sequences
6. Functions and Their Graphs
7. Differential Equations in Mathematical Modelling
8. Successive Differentiation
9. Polynomial Approximation of Functions
10. Functions of Two Variables
11. Geometry of Complex Numbers
12. De Moivre's Theorem

### About the Author

**R. D. Sarma** is an associate professor in the Department of Mathematics at Rajdhani College, New Delhi. He has over 19 years of teaching experience at the undergraduate and postgraduate levels. He has published 28 research papers in various international journals and has worked on several research projects under the UGC and CSIR. His primary areas of interest are fuzzy set theory and topology. He has attended several international conferences and has been involved in guiding students for their Ph.D. degrees. He has also worked as an associate professor in mathematics in the Eritrea Institute of Technology, under the aegis of the Ministry of Education, Eritrea.

**Umesh Kumar** is an assistant professor in the Department of Mathematics at Rajdhani College, New Delhi. He is an active member of the Mathematical Association of India and a life member of the Indian Mathematical Society and Indian Science Congress Association. His area of research is topology. He was recently awarded 'The Worshipful Company of International Bankers' Prize' for securing the first position in M.Sc. (Financial Mathematics) from King's College, London. Presently, he is deputed as a faculty member in the Cluster Innovation Centre, University of Delhi.



### Numerical Analysis

**Dr. Siva Ramakrishna Das**  
**Dr. Vijayakumari**

ISBN: 9788131776469  
© 2014  
Pages: 768

### About the Book

A text book designed exclusively for the undergraduate students. With a complete presentation on theoretical and numerical derivations supported with rich pedagogy for practice. All chapters begin with theoretical presentation emphasizing the practical computation which addresses the accurate approximation. Subsequently, the book provides a detailed explanation on Errors in Numerical Computation, Algebraic and Transcendental Equations, Solution of Linear System of Equation, Curve Fitting, Initial value problem for ordinary differential equation, Boundary value problems of second order partial differential equation and Solution of difference equation with constant coefficient.

### Features

- An exclusive coverage on Boundary value problems of second order partial differential equation and solution of difference equation with constant coefficient
- Over 200 line diagrams

- 400 solved problems
- 250 unsolved problems for practice.

## Contents

1. Errors in Numerical Computations
2. Solution of Algebraic and Transcendental Equations
3. Polynomial Interpolation
4. Inverse Interpolation
5. Numerical Differentiation
6. Numerical Integration
7. Curve Fitting
8. Initial value Problems for Ordinary Differential Equations
9. Boundary Value problems in Ordinary and Partial Differential Equation
10. Differential Equations

## About the Author

**P. Sivaramkrishna Das** started his career as Assistant Professor of Mathematics at Ramakrishna Mission Vivekananda College, Chennai, his alma mater, and retired as Professor and Head of the Department of Mathematics from the same college after an illustrious career spanning 36 years. Currently, he is Professor of Mathematics and Head of the Department of Science and Humanities, K.C.G. College of Technology, Chennai

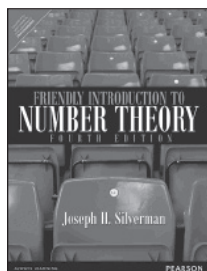
**C. Vijayakumari** began her career as Assistant Professor of Mathematics at Government Arts College for Women, Thanjavur, and has taught at various government arts and science colleges across Tamil Nadu before retiring as Professor of Mathematics, Queen Mary's College, Chennai, with 40 years of teaching experience behind her.

- o Hypothesis testing
- o Formal proof
- **RSA cryptosystem, elliptic curves, and Fermat's Last Theorem are featured**, showing the real-life applications of mathematics.

## Contents

1. What Is Number Theory?
2. Pythagorean Triples
3. Pythagorean Triples and the Unit Circle
4. Sums of Higher Powers and Fermat's Last Theorem
5. Divisibility and the Greatest Common Divisor
6. Linear Equations and the Greatest Common Divisor
7. Factorization and the Fundamental Theorem of Arithmetic
8. Congruences
9. Congruences, Powers, and Fermat's Little Theorem
10. Congruences, Powers, and Euler's Formula
11. Euler's Phi Function and the Chinese Remainder Theorem
12. Prime Numbers
13. Counting Primes
14. Mersenne Primes
15. Mersenne Primes and Perfect Numbers
16. Powers Modulo  $m$  and Successive Squaring
17. Computing  $k$ th Roots Modulo  $m$
18. Powers, Roots, and "Unbreakable" Codes
19. Primality Testing and Carmichael Numbers
20. Squares Modulo  $p$
21. Quadratic Reciprocity
22. Proof of Quadratic Reciprocity
23. Which Primes Are Sums of Two Squares?
24. Which Numbers Are Sums of Two Squares?
25. Euler's Phi Function and Sums of Divisors
26. Powers Modulo  $p$  and Primitive Roots
27. Primitive Roots and Indices
28. The Equation  $X^4 + Y^4 = Z^4$
29. Square-Triangular Numbers Revisited
30. Pell's Equation
31. Diophantine Approximation
32. Diophantine Approximation and Pell's Equation
33. Number Theory and Imaginary Numbers
34. The Gaussian Integers and Unique Factorization
35. Irrational Numbers and Transcendental Numbers
36. Binomial Coefficients and Pascal's Triangle
37. Fibonacci's Rabbits and Linear Recurrence Sequences
38. Cubic Curves and Elliptic Curves
39. Elliptic Curves with Few Rational Points
40. Points on Elliptic Curves Modulo  $p$
41. Torsion Collections Modulo  $p$  and Bad Primes
42. Defect Bounds and Modularity Patterns
43. Elliptic Curves and Fermat's Last Theorem

# Number Theory



## A Friendly Introduction to Number Theory, 4/e

Joseph H. Silverman

ISBN: 9789332535237

© 2014

Pages: 480

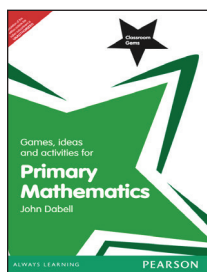
## About the Book

**A Friendly Introduction to Number Theory, Fourth Edition** is designed to introduce students to the overall themes and methodology of mathematics through the detailed study of one particular facet—number theory. Starting with nothing more than basic high school algebra, students are gradually led to the point of actively performing mathematical research while getting a glimpse of current mathematical frontiers. The writing is appropriate for the undergraduate audience and includes many numerical examples, which are analyzed for patterns and used to make conjectures. Emphasis is on the methods used for proving theorems rather than on specific results.

## Features

- **50 short chapters** provide flexibility and options for instructors and students. A flowchart of chapter dependencies is included in this edition.
- **Five basic steps** are emphasized throughout the text to help readers develop a robust thought process:
  - o Experimentation
  - o Pattern recognition
  - o Hypothesis formation

## Primary Mathematics



### Classroom Gems: Games, Ideas and Activities for Primary Mathematics

John Dabell

ISBN: 9789332517332

© 2014

Pages: 392

#### About the Book

Games, Ideas and Activities for Primary Mathematics draws together over 150 practical, tried-and-tested, off-the-shelf ideas and activities that can be easily incorporated into any Maths lesson. This invaluable resource is divided into key teaching areas and will help make learning and teaching Maths fun and engaging. Step-by-step instructions are provided for each activity, and ideas include brainteasers, number tricks and investigations. Activities can be easily adapted to suit different classes or topics, and will instantly brighten up your classroom!

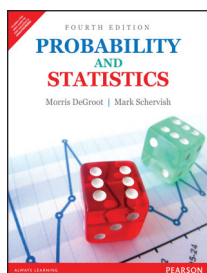
#### Contents

- Chapter 1 Place value
- Chapter 2 Addition
- Chapter 3 Subtraction
- Chapter 4 Multiplication
- Chapter 5 Division
- Chapter 6 Logical reasoning
- Chapter 7 Number tricks
- Chapter 8 Mixed problems
- Chapter 9 Investigations
- Chapter 10 Brain-teasers

#### About the Author

**John Dabell** trained as a primary teacher 12 years ago. Since then he has worked as a national in-service provider, writer and project manager. He now works back in the classroom at a primary school in Derby, and has written over 300 education articles.

## Probability and Statistics



### Probability and Statistics, 4/e

Morris H. DeGroot, Mark J. Schervish

ISBN: 9789332573871

© 2016

Pages: 840

New Edition

#### About the Book

The revision of this well-respected text presents a balanced approach of the classical and Bayesian methods and now includes a chapter on simulation (including Markov chain Monte Carlo and the Bootstrap), coverage of residual analysis in linear models, and many examples using real data.

Probability & Statistics, Fourth Edition, was written for a one- or two-semester probability and statistics course. This course is offered primarily at four-year institutions and taken mostly by sophomore and junior level students majoring in mathematics or statistics. Calculus is a prerequisite, and

a familiarity with the concepts and elementary properties of vectors and matrices is a plus.

#### Features

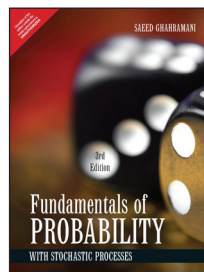
- Brief introductions in each technical section give readers a hint about what they are going to encounter, while summaries list the most important ideas.
- In addition to examples using current data, some elementary concepts of probability are illustrated by famous examples such as the birthday problem, the tennis tournament problem, the matching problem, and the collector's problem.
- Special features include sections on Markov chains, the gambler's ruin problem, and utility and preferences among gamblers. These topics are presented in an elementary fashion and can be omitted without loss of continuity.
- Optional sections of the book are indicated by an asterisk in the Table of Contents.
- Chapters 1—5 are devoted to probability and can serve as the text for a one-semester course on probability. Independence is now introduced after conditional probability.
- Chapters 6—10 are devoted to statistical inference. Both classical and Bayesian statistical methods are developed in an integrated presentation which will be useful to students when applying the concepts to the real world.

#### Contents

1. Introduction to Probability
2. Conditional Probability
3. Random Variables and Distributions
4. Expectation
5. Special Distributions
6. Large Random Samples
7. Estimation
8. Sampling Distributions of Estimators
9. Testing Hypotheses
10. Categorical Data and Nonparametric Methods
11. Linear Statistical Models

#### About the Author

**Morris H. DeGroot, Mark J. Schervish,**



### Fundamentals of Probability, with Stochastic Processes, 3/e

Saeed Ghahramani

ISBN: 9789332535107

© 2014

Pages: 640

#### About the Book

Probability is presented in a very clear way in this text: through interesting and instructive examples and exercises that motivate the theory, definitions, theorems, and methodology. Due to its unique organization, this text has also been successfully used in teaching courses in discrete probability.

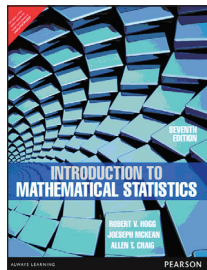
#### Features

- **NEW - An official reference for The American Actuarial Society.**
- **NEW - Chapter on Stochastic Processes** Covers more in-depth material on Poisson processes, presents the basics of Markov chains, continuous-time Markov chains, and Brownian Motion. This text is now the most comprehensive available in probability.

- **NEW - Applications of probability and stochastic processes in finance** Includes some practical, meaningful, non-trivial, and relevant applications of probability and stochastic processes in finance, economics, and actuarial sciences.
- **NEW - Comprehensive new section on applications to Genetics** Covers basic concepts of genetics including many important examples throughout the book.
- **NEW - New section on Survival Analysis and Hazard Functions.**
- **NEW - Fine-tuned for accuracy** Praised for being very accurate and virtually error free.
- **NEW - More explanations and clarifying comments.**
- **NEW - 276 new exercises and examples** Adds new application problems.
- **NEW - More insightful and better solutions.**
- **Historical roots and applications of many of the theorems and definitions.**
- **Simple probabilistic arguments** Given with the usual analytic proofs.

### Contents

1. Axioms of Probability.
  2. Combinatorial Methods.
  3. Conditional Probability and Independence.
  4. Distribution Functions and Discrete Random Variables.
  5. Special Discrete Distributions.
  6. Continuous Random Variables.
  7. Special Continuous Distributions.
  8. Bivariate Distributions.
  9. Multivariate Distributions.
  10. More Expectations and Variances.
  11. Sums of Independent Random Variables and Limit Theorems.
  12. Stochastic Processes.
  13. Simulation.
- Answers to Odd-Numbered Exercises.



## Introduction to Mathematical Statistics, 7/e

**Robert V. Hogg**  
**Allen T. Craig**  
**Joseph W. McKean**

ISBN: 9789332519114  
© 2014  
Pages: 656

### About the Book

*Introduction to Mathematical Statistics, Seventh Edition*, provides students with a comprehensive introduction to mathematical statistics. Continuing its proven approach, the Seventh Edition has been updated with new examples, exercises, and content for an even stronger presentation of the material.

### Features

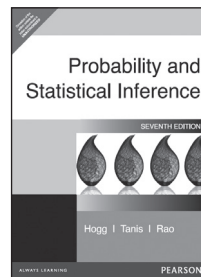
- Classical statistical inference procedures in estimation and testing are thoroughly covered.
- In-depth treatment of sufficiency and testing theory includes uniformly most powerful tests and likelihood ratio tests.
- Numerous illustrative examples and exercises enhance students' comprehension and retention as they progress through the material.
- Definitions, equations, and theorems are set in bold type help students study more effectively.
- The text's flexible organization makes it ideal for use with a range of mathematical statistics courses.

### Contents

1. Probability and Distributions
  2. Multivariate Distributions
  3. Some Special Distributions
  4. Some Elementary Statistical Inferences
  5. Consistency and Limiting Distributions
  6. Maximum Likelihood Methods
  7. Sufficiency
  8. Optimal Tests of Hypotheses
  9. Inferences about Normal Models
  10. Nonparametric and Robust Statistics
- Appendix A. Mathematical Comments  
Appendix B. R-Functions  
Appendix C. Tables of Distributions  
Appendix D. List of Common Distributions  
Appendix E. Answers to Selected Exercises

### About the Author

**Robert V. Hogg**  
**Joseph McKean**  
**Allen T. Craig**



## Probability and Statistical Inference, 7/e

**Robert V. Hogg**  
**Elliot A. Tanis**  
**M. Jagan Mohan Rao**

ISBN: 9788177585537  
© 2006  
Pages: 752

### About the Book

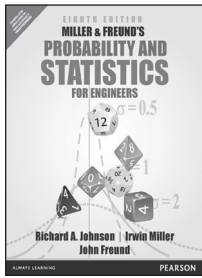
The book *Probability and Statistical Inference* emphasizes the existence of variation in almost every process, and how the study of probability and statistics helps us understand this variability. Designed for students with a background in calculus, it reinforces basic mathematical concepts with numerous real-world examples and applications to illustrate the relevance of key concepts.

### Features

- Student-friendly approach “ Reinforces basic mathematical concepts, while not requiring extensive knowledge of math beyond calculus.
- Integration of computer-based data and applications
- Application-oriented content “ Features more than 100 new real-world scenarios as exercises and examples, with applications in the areas of biology, economics, health, sociology, and sports.
- Updated material throughout “ Offers a brief history of probability in the chapter on normal distribution

### Contents

1. Prologue
2. Probability
3. Discrete Distributions
4. Continuous Distributions
5. The Normal Distribution
6. Bivariate Distributions
7. Centerpiece
8. Estimation
9. Tests of Statistical Hypotheses
10. Theory of Statistical Tests



## Miller & Freund's Probability and Statistics for Engineers, 8/e

Richard A. Johnson  
Irwin Miller  
John Freund

ISBN: 9789332550414  
© 2015  
Pages: 648



### About the Book

This text is rich in exercises and examples, and explores both elementary probability and basic statistics, with an emphasis on engineering and science applications. Much of the data have been collected from the author's own consulting experience and from discussions with scientists and engineers about the use of statistics in their fields. In later chapters, the text emphasizes designed experiments, especially two-level factorial design.

### Features

- Clear, concise presentation helps students quickly gain an understanding of the concepts.
- Rich problem sets give students the practice they need to learn the material.
- Do's and Don'ts at the end of each chapter help students to apply statistics correctly to avoid misuses.
- Computer exercises for MINITAB® help students learn and become familiar with this software.
- Many data sets are drawn from author Richard Johnson's own consulting activities as well as discussions with scientists and engineers about their statistical problems. This helps illustrate the statistical methods and reasoning required in order to draw generalizations from data collected in actual experiments.
- Content highlights:
  - Case studies in the first two chapters illustrate the power of even simple statistical methods to suggest changes that make major improvements in production processes.
  - Graphs of the sampling distribution show the critical region and P value, and accompany the examples of testing hypotheses.
  - Summary tables of testing procedures provide a convenient reference for students.
  - Solid treatment of confidence interval techniques and hypothesis testing procedures, which clearly and consistently delineates the steps for hypothesis testing in each application.
  - Clear, current coverage of two-level factorial design. To explore interactions, engineers have to know about experiments where more than one variable has been changed at the same time in design.
  - A full chapter on modern ideas of quality improvement provides up-to-date coverage of this popular significant trend in the field.

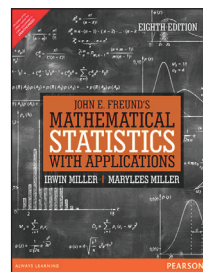
### Contents

1. Introduction
2. Organization and Description of Data
3. Probability
4. Probability Distributions
5. Probability Densities
6. Sampling Distributions
7. Inferences Concerning a Mean
8. Comparing Two Treatments
9. Inferences Concerning Variances
10. Inferences Concerning Proportions
11. Regression Analysis
12. Analysis of Variance
13. Factorial Experimentation
14. Nonparametric Tests

15. The Statistical Content of Quality-Improvement Programs
16. Application to Reliability and Life Testing

### About the Author

**Richard Johnson** is the co-author of seven statistics texts and monographs, including Probability and Statistics for Engineers and Applied Multivariate Statistical Analysis. He was the founding editor of Statistics and Probability Letters and served as editor for 25 years. Besides many years of experience in teaching all levels of statistics courses at the University of Wisconsin, he has published more than 120 technical papers concentrating in the areas of reliability and life testing, multivariate analysis, large sample theory, and applications to engineering. Johnson has presented talks on his research in 23 foreign countries. He is an elected member of the International Statistical Institute, a Fellow of the American Statistical Association, a Fellow of the Institute of Mathematical Statistics, and a Fellow of the Royal Statistical Society.



## John E. Freund's Mathematical Statistics with Applications, 8/e

Irwin Miller  
Marylees Miller

ISBN: 9789332519053  
© 2014  
Pages: 476

### About the Book

John E. Freund's Mathematical Statistics with Applications, Eighth Edition, provides a calculus-based introduction to the theory and application of statistics, based on comprehensive coverage that reflects the latest in statistical thinking, the teaching of statistics, and current practices.

This text is appropriate for a two-semester or three-quarter calculus-based course in Introduction to Mathematical Statistics. It can also be used for a single-semester course emphasizing probability, probability distributions and densities, sampling, and classical statistical inference

### Features

- "The Theory in Practice" sections at the end of every chapter give students the chance to apply the methods they've learned.
- More than 1,200 exercises offer a wide variety to choose from in creating assignments, tests, and class work. Many of these exercises offer the opportunity to use technology so that students can understand the role of computers in factoring and analyzing statistical data.
- Comprehensive coverage of statistical theories students have appreciated for generations.
- Comprehensive appendices summarize the properties of the special probability distributions and density functions, making this text an invaluable reference.

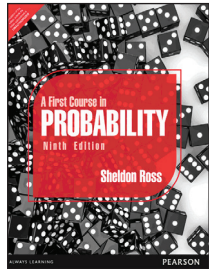
### Contents

1. Introduction
2. Probability
3. Probability Distributions and Probability Densities
4. Mathematical Expectation
5. Special Probability Distributions
6. Special Probability Densities
7. Functions of Random Variables
8. Sampling Distributions
9. Decision Theory
10. Point Estimation
11. Interval Estimation
12. Hypothesis Testing
13. Tests of Hypotheses Involving Means, Variances, and Proportions

14. Regression and Correlation  
Appendix: Sums and Products  
Appendix: Special Probability Distributions  
Appendix: Special Probability Densities  
Statistical tables

### About the Author

Irwin Miller  
Marylees Miller



## A First Course in Probability, 9/e

Sheldon Ross

ISBN: 9789332519077

© 2014

Pages: 458

### About the Book

A First Course in Probability, Ninth Edition, features clear and intuitive explanations of the mathematics of probability theory, outstanding problem sets, and a variety of diverse examples and applications. This book is ideal for an upper-level undergraduate or graduate level introduction to probability for math, science, engineering and business students. It assumes a background in elementary calculus

### Features

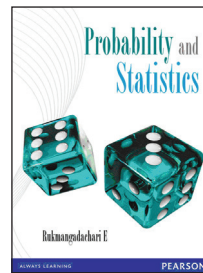
- Intuitive explanations are supported with an abundance of examples to give readers a thorough introduction to both the theory and applications of probability.
- Analysis is unique to the text and elegantly designed. Examples include the knockout tournament and multiple players gambling ruin problem, as well as the new results concerning the sum of uniform and the sum of geometric random variables.
- Three sets of exercises are given at the end of each chapter. These include Problems, Theoretical Exercises, and Self-Test Problems and Exercises. The Self-Test Problems and Exercises include complete solutions in the appendix, allowing students to test their comprehension and study for exams.

### Contents

1. Combinatorial Analysis
  2. Axioms of Probability
  3. Conditional Probability and Independence
  4. Random Variables
  5. Continuous Random Variables
  6. Jointly Distributed Random Variables
  7. Properties of Expectation
  8. Limit Theorems
  9. Simulation
- Appendix A. Answers to Selected Problems  
Appendix B. Solutions to Self-Test Problems and Exercises

### About the Author

**Sheldon M. Ross** is a professor in the Department of Industrial Engineering and Operations Research at the University of Southern California. He received his Ph.D. in statistics at Stanford University in 1968. He has published many technical articles and textbooks in the areas of statistics and applied probability. Among his texts are A First Course in Probability, Introduction to Probability Models, Stochastic Processes, and Introductory Statistics.



## Probability and Statistics

E. Rukmangadachari

ISBN: 9788131761366

© 2012

Pages: 258

### About the Book

This book is designed for engineering students studying the core paper on probability and statistics during their second or third years. It includes detailed explanation of theory with numerous examples and exercises, as well as relevant references to engineering applications. Each chapter also has numerous objective type questions, and answers and hints are provided for all the exercise problems and objective type questions.

### Features

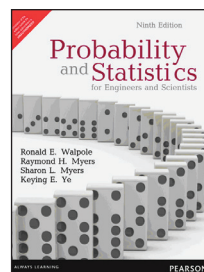
- Detailed examination of special probability distributions
- A separate chapter on estimation theory
- Detailed examination of regression and correlation analysis
- A separate chapter on queuing theory

### Contents

1. Probability
2. Probability Distribution
3. Special Distribution
4. Sampling Distributions
5. Estimation Theory
6. Inferences Concerning Means and Proportions
7. Tests of Significance
8. Curve Fitting: Regression and Correlation Analysis
9. Queuing Theory

### About the Author

**E Rukmangadachari** is former head of Computer Science and Engineering as well as Humanities and Sciences at Malla Reddy Engineering College, Secunderabad. He is an MA from Osmania University, and an M.PHIL. and Ph.D. degree holder from Sri Venkateswara University, Thirupathi.



## Probability and Statistics for Engineers and Scientists, 9/e

Ronald E. Walpole

Raymond H. Myers

Sharon L. Myers

Keying Ye

ISBN: 9789332519084

© 2014

Pages: 950

### About the Book

This classic text provides a rigorous introduction to basic probability theory and statistical inference, with a unique balance between theory and methodology. Interesting, relevant applications use real data from actual studies, showing how the concepts and methods can be used to solve problems in the field. This revision focuses on improved clarity and deeper understanding.

### Features

- The balance between theory and applications offers mathematical support to enhance coverage when necessary, giving engineers and

scientists the proper mathematical context for statistical tools and methods.

- **Mathematical level:** this text assumes one semester of differential and integral calculus as a prerequisite. Calculus is confined to elementary probability theory and probability distributions (Chapters 2-7). Matrix algebra is used modestly in coverage of linear regression material (Chapters 11-12). Linear algebra and the use of matrices are applied in Chapters 11-15, where treatment of linear regression and analysis of variance is covered.
- **Compelling exercise sets** challenge students to use the concepts to solve problems that occur in many real-life scientific and engineering situations. Many exercises contain real data from studies in the fields of biomedical, bioengineering, business, computing, etc. Real-life applications of the Poisson, binomial, and hypergeometric distributions generate student interest using topics such as flaws in manufactured copper wire, highway potholes, hospital patient traffic, airport luggage screening, and homeland security.

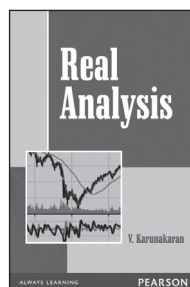
### Contents

1. Introduction to Statistics and Data Analysis
2. Probability
3. Random Variables and Probability Distributions
4. Mathematical Expectation
5. Some Discrete Probability Distributions
6. Some Continuous Probability Distributions
7. Functions of Random Variables (Optional)
8. Sampling Distributions and More Graphical Tools
9. One- and Two-Sample Estimation Problems
10. One- and Two-Sample Tests of Hypotheses
11. Simple Linear Regression and Correlation
12. Multiple Linear Regression and Certain Nonlinear Regression Models
13. One-Factor Experiments: General
14. Factorial Experiments (Two or More Factors)
15. 2k Factorial Experiments and Fractions
16. Nonparametric Statistics
17. Statistical Quality Control
- A. Statistical Tables and Proofs
- B. Answers to Odd-Numbered Non-Review Exercises

### About the Author

- Ronald E. Walpole
- Raymond H. Myers, Virginia Polytechnic Institute
- Sharon L. Myers
- Keying E. Ye, Virginia Polytechnic Institute & State University

## Real Analysis



### Real Analysis

V. Karunakaran

ISBN: 9788131757987

© 2011

Pages: 600

### About the Book

This text book is designed for an undergraduate course on mathematics. It covers the basic material that every graduate student should know in the classical theory of functions of real variables, measures, limits and continuity. This text book offers readability, practicality and flexibility. It presents fundamental theorems and ideas from a practical viewpoint, showing students the motivation behind mathematics.

### Features

- Comprehensive coverage of sequence and series
- Detailed coverage of topics like measure theory, set theory, limits and continuity
- A very flexible presentation with a uniform writing style and notation, covering the material in small sections, which allows instructors and students to adapt this book to their syllabus

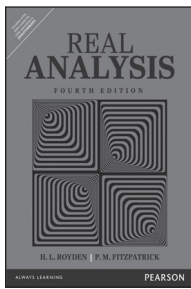
### Contents

1. Basic Properties of the Real number system
2. Some Finer Aspects of Set Theory
3. Sequences and Series
4. Topological aspects of the real line
5. Limits and Continuity
6. Differentiation
7. Functions of Bounded variation
8. Riemann Integration
9. Sequences and series of functions
10. Power series and special functions
11. Fourier Series
12. Real-valued Functions of two real variables
13. Lebesgue Measure and Integration
14.  $L_p$  Spaces

### About the Author

V. Karunakaran has 35 years of research experience specializing in real, complex and functional analysis. He was a life member of the Indian Mathematical Society, Association of Mathematics Teachers of India, a fellow of the Forum D'Analystes, Chennai, and a regular reviewer for Zentralblatt Mathematik.





## Real Analysis, 4/e

Halsey Royden  
Patrick Fitzpatrick

ISBN: 9789332551589  
© 2015  
Pages: 544



### About the Book

**Real Analysis, Fourth Edition**, covers the basic material that every graduate student should know in the classical theory of functions of a real variable, measure and integration theory, and some of the more important and elementary topics in general topology and normed linear space theory. This text assumes a general background in undergraduate mathematics and familiarity with the material covered in an undergraduate course on the fundamental concepts of analysis. Patrick Fitzpatrick of the University of Maryland—College Park spearheaded this revision of Halsey Royden's classic text

### Features

- Independent, modular chapters give instructors the freedom to arrange the material into a course according that suits their needs. A chart in the text gives the essential dependencies.
- Content is divided into three parts:
  - Part 1: Classical theory of functions, including the classical Banach spaces
  - Part 2: General topology and the theory of general Banach spaces
  - Part 3: Abstract treatment of measure and integration
- Throughout the text, an understanding of the linkages between the three parts is fostered. The expanded collection of problems range from those that confirm understanding of basic results and ideas to those that are quite challenging; many problems foreshadow future developments.

### Contents

#### PART I: LEBESGUE INTEGRATION FOR FUNCTIONS OF A SINGLE REAL VARIABLE

1. The Real Numbers: Sets, Sequences and Functions
2. Lebesgue Measure
3. Lebesgue Measurable Functions
4. Lebesgue Integration
5. Lebesgue Integration: Further Topics
6. Differentiation and Integration
7. The  $L^p$  Spaces: Completeness and Approximation
8. The  $L^p$  Spaces: Duality and Weak Convergence

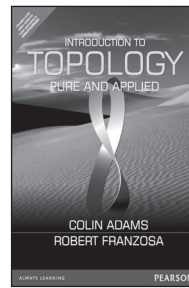
#### PART II: ABSTRACT SPACES: METRIC, TOPOLOGICAL, AND HILBERT

9. Metric Spaces: General Properties
10. Metric Spaces: Three Fundamental Theorems
11. Topological Spaces: General Properties
12. Topological Spaces: Three Fundamental Theorems
13. Continuous Linear Operators Between Banach Spaces
14. Duality for Normed Linear Spaces
15. Compactness Regained: The Weak Topology
16. Continuous Linear Operators on Hilbert Spaces

#### PART III: MEASURE AND INTEGRATION: GENERAL THEORY

17. General Measure Spaces: Their Properties and Construction
18. Integration Over General Measure Spaces
19. General  $L^p$  Spaces: Completeness, Duality and Weak Convergence
20. The Construction of Particular Measures
21. Measure and Topology
22. Invariant Measures

## Topology



## Introduction to Topology

Colin Adams  
Robert Franzosa

ISBN: 9788131726921  
© 2009  
Pages: 512

### About the Book

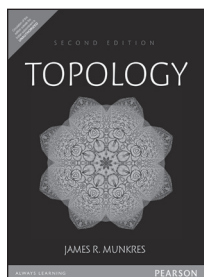
This book introduces topology as an important and fascinating mathematics discipline. Students learn first the basics of point-set topology, which is enhanced by the real-world application of these concepts to science, economics, and engineering as well as other areas of mathematics. The second half of the book focuses on topics like knots, robotics, and graphs. The text is written in an accessible way for a range of undergraduates to understand the usefulness and importance of the application of topology to other fields.

### Features

- Theoretical and applied approach- the authors focus on the basic concepts of
- Intuitive and accessibly written text
- Rigorous presentation of the mathematics with intuitive descriptions and discussions to increase student understand.
- Examples of real world application keep students engrossed in the material
- Numerous figures allow students to visualize and understand the material presented

### Contents

1. Introduction
2. Topological Spaces
3. Interior, Closure, and Boundary
4. Creating New Topological Spaces
5. Continuous Functions and Homeomorphisms
6. Metric Spaces
7. Connectedness
8. Compactness
9. Dynamical Systems and Chaos
10. Homotopy and Degree Theory
11. Fixed Point Theorems and Applications
12. Embeddings
13. Knots
14. Graphs and Topology
15. Manifolds and Cosmology



## Topology: Pearson New International Edition, 2/e

James Munkres

ISBN: 9789332549531

© 2015

Pages: 537



### About the Book

For a senior undergraduate or first year graduate-level course in Introduction to Topology. Appropriate for a one-semester course on both general and algebraic topology or separate courses treating each topic separately.

This text is designed to provide instructors with a convenient single text resource for bridging between general and algebraic topology courses. Two separate, distinct sections (one on general, point set topology, the other on algebraic topology) are each suitable for a one-semester course and are based around the same set of basic, core topics. Optional, independent topics and applications can be studied and developed in depth depending on course needs and preferences.

### Features

- **NEW** - Greatly expanded, full-semester coverage of algebraic topology—Extensive treatment of the fundamental group and covering spaces. What follows is a wealth of applications—to the topology of the plane (including the Jordan curve theorem), to the classification of compact surfaces, and to the classification of covering spaces. A final chapter provides an application to group theory itself.
- Follows the present-day trend in the teaching of topology which explores the subject much more extensively with one semester devoted to general topology and a second to algebraic topology.
- Advanced topics—Such as metrization and imbedding theorems, function spaces, and dimension theory are covered after connectedness and compactness.
- Order of topics proceeds naturally from the familiar to the unfamiliar—Begins with the familiar set theory, moves on to a thorough and careful treatment of topological spaces, then explores connectedness and compactness (with their many ties to calculus and analysis), and then branches out to the new and different topics mentioned above.
- Carefully guides students through transitions to more advanced topics being careful not to overwhelm them. Motivates students to continue into more challenging areas.
- One-or two-semester coverage—Provides separate, distinct sections on general topology and algebraic topology.
- Each of the text's two parts is suitable for a one-semester course, giving instructors a convenient single text resource for bridging between the courses. The text can also be used where algebraic topology is studied only briefly at the end of a single-semester course.
- Many examples and figures—Exploits six basic counterexamples repeatedly.
- Avoids overemphasis on “weird counterexamples.”
- Exercises—Varied in difficulty from the routine to the challenging. Supplementary exercises at the end of several chapters explore additional topics.
- Deepen students' understanding of concepts and theorems just presented rather than simply test comprehension. The supplementary exercises can be used by students as a foundation for an independent research project or paper.

### Contents

#### I. GENERAL TOPOLOGY.

1. Set Theory and Logic.
2. Topological Spaces and Continuous Functions.
3. Connectedness and Compactness.
4. Countability and Separation Axioms.
5. The Tychonoff Theorem.
6. Metrization Theorems and Paracompactness.
7. Complete Metric Spaces and Function Spaces.
8. Baire Spaces and Dimension Theory.

#### II. ALGEBRAIC TOPOLOGY.

9. The Fundamental Group.
10. Separation Theorems in the Plane.
11. The Seifert-van Kampen Theorem.
12. Classification of Covering Spaces.
13. Classification of Surfaces.

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# Your Nearest Pearson Contact

## NORTH

### Vishal Dhawan

vishal.dhawan@pearson.com  
9910105179

## DELHI NCR

### Binit Kumar Shukla

binit.shukla@pearson.com  
9871105803

### Sunil Sharma

sunil.sharma2@pearson.com  
9810038092

### Navdeep Singh Viridi

navdeep.singh@pearson.com  
9818692884

### Kamal Bisht

kamal.bisht@pearson.com  
9871877866

### Gaurav Sharma

gaurav.sharma5@pearson.com  
9650078659

### Mohd Suhail

mohd.suhail@pearson.com  
9871437770

### Avinash Kumar Shukla

avinash.kumar2@pearson.com  
97187 07999

### Sahil Kumar

sahil.kumar@pearson.com  
8447920102

### Pallav Jain

pallav.jain@pearson.com  
9654011114

### Arvind Kumar Rai

arvind.raai@pearson.com  
9350401333/9015400000

### Ishaan Yadav

ishaan.yadav@pearson.com  
9999811082

### Anuj Agrawal

anuj.agrawal@pearson.com  
8826465888

### Manoj Tyagi

manoj.tyagi@pearson.com

## PUNJAB

### Chandigarh

### Sarvendra Singh

Sarvendra.Singh@pearson.com  
9871424307

## MADHYA PRADESH

### Bhopal

### Gaurav Singh Yadav

gaurav.yadav@pearson.com  
9981593703

### Dev keshri

dev.keshri@pearson.com

## RAJASTHAN

### Jaipur

### Dushyant Singh

dushyant.singh@pearson.com  
9314020121

## UTTAR PRADESH

### Lucknow

### Santosh Kumar

santosh.kumar2@pearson.com  
9415517650

## EAST

### Niraj Mishra

niraj.mishra@pearson.com  
9830714147

## WEST BENGAL

### Kolkata

### Syed Belaluddin

syed.belal@pearson.com  
9831105388

### Tapan Kumar Saha

tapan.saha@pearson.com  
9830137194

### Vishwajeet Banick

vishwajeet.banick@pearson.com  
9831499052

### Surajit Kumar Kalita

surajit.kumar@pearson.com  
9007490111

## BIHAR

### Patna

### Satyendra Sahay

satendra.sahay@pearson.com  
9334391431

## ODISHA

### Bhubaneshwar

### Ranjan Kumar Mishra

ranjan.mishra@pearson.com  
9437276051

## WEST

### Vishal Dhawan

Vishal.dhawan@pearson.com  
9910105179

### Himadri Mandal

himadri.mandal@pearson.com  
9650069984

## MAHARASHTRA

### Mumbai

### Vikas Misar

vikas.misar@pearson.com  
9820062721

### Dhiren Chandramohan Vakharia

dhiren.vakharia@pearson.com  
9833320212

### Siddhesh Gaikwad

siddhesh.gaikwad@pearson.com  
9930022807

## GUJARAT

### Ahmedabad

### Gaurav Gagwani

gaurav.gagwani@pearson.com  
9898813419

## PUNE

### Bhoopesh Bhondle

bhoopesh.bhondle@pearson.com  
9372524543

### Dheeraj Gujrati

dheeraj.gujrati@pearson.com  
9890491116

**Kedar Vinod Pise**  
kedar.pise@pearson.com  
9923505251

**Naren Mahato**  
naren.mahato@pearson.com  
8238388926

## SOUTH

**A.K Dhanpal**  
dhanpal.ak@pearson.com  
9840866113

## TAMIL NADU

**Chennai**  
**G. Mark Pani Jino**  
mark.jino@pearson.com  
9003258275

**G. Shankar**  
g.shankar@pearson.com  
9003130680

**Jayaraj V.S**  
vs.jayaraj@pearson.com  
9994070570

**A. Jerom Richerd**  
jerom.richerd@pearson.com  
9842593027

**Robert Tim Wilton**  
robert.wilton@pearson.com  
9566918567

## Trichy

**John Peter L.**  
john.peter@pearson.com  
8508164386

## Coimbatore

**S. Gopinath**  
s.gopinath@pearson.com  
9655627617

**Natesa Deepan**  
natesa.deepan@pearson.com  
8220015269

## Madurai

**D. Satheesh**  
satheesh.d@pearson.com  
9677666014

## ANDHRA PRADESH & TELANGANA

### Hyderabad

**Santosh Thadakamadla**  
t.santosh@pearson.com  
9959444413

**Kadium Mallikharjun**  
k.mallikharjun@pearson.com  
9603877224

**G.V. Kishore**  
gv.kishore@pearson.com  
8897667666

**Naveen Bojja**  
naveen.bojja@pearson.com  
9966685001

### Vijayawada

**Vuppanapalli Jayaprakash Narayana**  
jayaprakash.vuppanapalli@pearson.com  
9603109934

### Visakhapatnam

**A Venu Kumar**  
venu.kumar@pearson.com  
9676771407

## KARNATAKA

### Bangalore

**Vishal Bajpai**  
vishal.bajpai@pearson.com  
9663526715

**Ramesh Shankaran**  
ramesh.shankaran@pearson.com  
9845537670

**Arun Kumar R**  
arun.kumar1@pearson.com  
9538100777

**K.J. Vinay Kumar**  
vinay.kumar@pearson.com  
9538239890

**Mohan Kumar**  
mohan.nagappa@pearson.com  
9739731924

## KERALA

**B Muneer**  
b.muneer@pearson.com  
9847505010

**Ashik Thomas**  
ashik.thomas@pearson.com  
9745160027

**Sankar Krishnakumar**  
sankar.krishnakumar@pearson.com  
8891323817



