

Linear Algebra Pearson New International Edition

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Linear Algebra - John B. Fraleigh 2013-11-01

Fraleigh and Beauregard's text is known for its clear presentation and writing style, mathematical appropriateness, and overall student usability. Its inclusion of calculus-related examples, true/false problems, section summaries, integrated applications, and coverage of C_n make it a superb text for the sophomore or junior-level linear algebra course. This Third Edition retains the features that have made it successful over the years, while addressing recent developments of how linear algebra is taught and learned. Key concepts are presented early on, with an emphasis on geometry.

Linear Algebra with Applications (Classic Version) - Otto Bretscher 2018-03-15

This title is part of the Pearson Modern Classics series. Pearson Modern Classics are acclaimed titles at a value price. Please visit www.pearsonhighered.com/math-classics-series for a complete list of titles. Offering the most geometric presentation available, **Linear Algebra with Applications**, Fifth Edition emphasizes linear transformations as a unifying theme. This elegant textbook combines a user-friendly presentation with straightforward, lucid language to clarify and organize the techniques and applications of linear algebra. Exercises and examples make up the heart of the text, with abstract exposition kept to a minimum. Exercise sets are broad and varied and reflect the author's creativity and passion for this course. This revision reflects careful review and appropriate edits throughout, while preserving the order of topics of the previous edition.

MATRIX AND LINEAR ALGEBRA AIDED WITH MATLAB - Kanti Bhushan Datta 2016-12-01

With the inclusion of applications of singular value decomposition (SVD) and principal component analysis (PCA) to image compression and data analysis, this edition provides a strong foundation of linear algebra needed for a higher study in signal processing. The use of MATLAB in the study of linear algebra for a variety of computational purposes and the programmes provided in this text are the most attractive features of this book which strikingly distinguishes it from the existing linear algebra books needed as pre-requisites for the study of engineering subjects. This book is highly suitable for undergraduate as well as postgraduate students of mathematics, statistics, and all engineering disciplines. The book will also be useful to Ph.D. students for relevant mathematical resources. NEW TO THIS EDITION The Third Edition of this book includes:

- Simultaneous diagonalization of two diagonalizable matrices
- Comprehensive exposition of SVD with applications in shear analysis in engineering
- Polar Decomposition of a matrix
- Numerical experimentation with a colour and a black-and-white image compression using MATLAB
- PCA methods of data analysis and image compression with a list of MATLAB codes

Elementary Linear Algebra with Applications - Bernard Kolman 2013-08-29

For introductory sophomore-level courses in Linear Algebra or Matrix Theory. This text presents the basic ideas of linear algebra in a manner that offers students a fine balance between abstraction/theory and computational skills. The emphasis is on not just teaching how to read a proof but also on how to write a proof.

Differential Equations and Linear Algebra - Stephen W. Goode 2013-07-23

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.

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Linear Algebra - Stephen H. Friedberg 2013-08-29

For courses in Advanced Linear Algebra. 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.

Linear Algebra - Kuldeep Singh 2013-10

"This book is intended for first- and second-year undergraduates arriving with average mathematics grades ... The strength of the text is in the large number of examples and the step-by-step explanation of each topic as it is introduced. It is compiled in a way that allows distance learning, with explicit solutions to all of the set problems freely available online <http://www.oup.co.uk/companion/singh>" -- From preface.

A First Course in Linear Algebra - Kenneth Kuttler 2020

"A First Course in Linear Algebra, originally by K. Kuttler, has been redesigned by the Lyryx editorial team as a first course for the general students who have an understanding of basic high school algebra and intend to be users of linear algebra methods in their profession, from business & economics to science students. All major topics of linear algebra are available in detail, as well as justifications of important results. In addition, connections to topics covered in advanced courses are introduced. The textbook is designed in a modular fashion to maximize flexibility and facilitate adaptation to a given course outline and student profile. Each chapter begins with a list of student learning outcomes, and examples and diagrams are given throughout the text to reinforce ideas and provide guidance on how to approach various problems. Suggested exercises are included at the end of each section, with selected answers at the end of the textbook." -- BCcampus website.

Linear Algebra - Richard Bronson 2013-10-08

In this appealing and well-written text, Richard Bronson starts with the concrete and computational, and leads the reader to a choice of major applications. The first three chapters address the basics: matrices, vector spaces, and linear transformations. The next three cover eigenvalues, Euclidean inner products, and Jordan canonical forms, offering possibilities that can be tailored to the instructor's taste and to the length of the course. Bronson's approach to computation is modern and algorithmic, and his theory is clean and straightforward. Throughout, the views of the theory presented are broad and balanced and key material is highlighted in the text and summarized at the end of each chapter. The book also includes ample exercises with answers and hints. Prerequisite: One year of calculus is recommended. Introduces deductive reasoning and helps the reader develop a facility with mathematical proofs Provides a balanced approach to computation and theory by offering computational algorithms for finding eigenvalues and eigenvectors Offers excellent exercise sets, ranging from drill to theoretical/challenging along with useful and interesting applications not found in other introductory linear algebra texts

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For courses in Advanced Linear Algebra. 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.

Differential Equations and Linear Algebra: Pearson New International Edition PDF eBook - C. Henry Edwards 2013-10-03

For courses in Differential Equations and Linear Algebra. Acclaimed authors Edwards and Penney combine core topics in elementary differential equations with those concepts and methods of elementary linear algebra needed for a contemporary combined introduction to differential equations and linear algebra. Known for its real-world applications and its blend of algebraic and geometric approaches, this text discusses mathematical modeling of real-world phenomena, with a fresh new computational and qualitative flavor evident throughout in figures, examples, problems, and applications. In the 3rd Edition, new graphics and narrative have been added as needed—yet the proven chapter and section structure remains unchanged, so that class notes and syllabi will not require revision for the new edition. The full text downloaded to your computer With eBooks you can: search for key concepts, words and phrases make highlights and notes as you study share your notes with friends eBooks are downloaded to your computer and accessible either offline through the Bookshelf (available as a free download), available online and also via the iPad and Android apps. Upon purchase, you will receive via email the code and instructions on how to access this product. Time limit The eBooks products do not have an expiry date. You will continue to access your digital ebook products whilst you have your Bookshelf installed.

Mathematics for Machine Learning - Marc Peter Deisenroth 2020-04-23

The fundamental mathematical tools needed to understand machine learning include linear algebra, analytic geometry, matrix decompositions, vector calculus, optimization, probability and statistics. These topics are traditionally taught in disparate courses, making it hard for data science or computer science students, or professionals, to efficiently learn the mathematics. This self-contained textbook bridges the gap between mathematical and machine learning texts, introducing the mathematical concepts with a minimum of prerequisites. It uses these concepts to derive four central machine learning methods: linear regression, principal component analysis, Gaussian mixture models and support vector machines. For students and others with a mathematical background, these derivations provide a starting point to machine learning texts. For those learning the mathematics for the first time, the methods help build intuition and practical experience with applying mathematical concepts. Every chapter includes worked examples and exercises to test understanding. Programming tutorials are offered on the book's web site.

Elementary Linear Algebra - C. H. Edwards 2013-11-01

An introduction to elementary linear algebra - designed especially for those interested in computer science, business and economics, the natural and social sciences, engineering, or mathematics.

Linear Algebra - M. Thamban Nair 2018-07-17

This book introduces the fundamental concepts, techniques and results of linear algebra that form the basis of analysis, applied mathematics and algebra. Intended as a text for undergraduate students of mathematics, science and engineering with a knowledge of set theory, it discusses the concepts that are constantly used by scientists and engineers. It also lays the foundation for the language and framework for modern analysis and its applications. Divided into seven chapters, it discusses vector spaces, linear transformations, best approximation in inner product spaces, eigenvalues and eigenvectors, block diagonalisation, triangularisation, Jordan form, singular value decomposition, polar decomposition, and many more topics that are relevant to applications. The topics chosen have become well-established over the years and are still very much in use. The approach is both geometric and algebraic. It avoids distraction from the main theme by deferring the exercises to the end of each section. These exercises aim at reinforcing the learned concepts rather than as exposing readers to the tricks involved in the computation. Problems included at the end of each chapter are relatively advanced and require a deep understanding and assimilation of the topics.

Linear Algebra with Applications: Pearson New International Edition - Steve Leon 2013-08-29

This book is for sophomore-level or junior/senior-level first courses in

linear algebra and assumes calculus as a prerequisite. This thorough and accessible text, from one of the leading figures in the use of technology in linear algebra, gives students a challenging and broad understanding of the subject. The author infuses key concepts with their modern practical applications to offer students examples of how mathematics is used in the real world. Each chapter contains integrated worked examples and chapter tests. The book stresses the important roles geometry and visualization play in understanding linear algebra.

Elementary Linear Algebra - Lawrence E. Spence 2013-07-29

For a sophomore-level course in Linear Algebra. Based on the recommendations of the Linear Algebra Curriculum Study Group, this introduction to linear algebra offers a matrix-oriented approach with more emphasis on problem solving and applications. Throughout the text, use of technology is encouraged. The focus is on matrix arithmetic, systems of linear equations, properties of Euclidean n -space, eigenvalues and eigenvectors, and orthogonality. Although matrix-oriented, the text provides a solid coverage of vector spaces.

Differential Equations and Linear Algebra, Global Edition - C. HENRY. PENNEY EDWARDS (DAVID E.. CALVIS, DAVID.) 2020-07-08

Linear Algebra and Its Applications, Global Edition - David C. Lay 2015-08-11

For courses in linear algebra. With traditional linear algebra texts, the course is relatively easy for students during the early stages as material is presented in a familiar, concrete setting. However, when abstract concepts are introduced, students often hit a 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. These concepts are fundamental to the study of linear algebra, so students' understanding of them is vital to mastering the subject. This text makes these concepts more accessible by introducing them early in a familiar, concrete R^n setting, developing them gradually, and returning to them throughout the text so that when they are discussed in the abstract, students are readily able to understand. The full text downloaded to your computer With eBooks you can: search for key concepts, words and phrases make highlights and notes as you study share your notes with friends eBooks are downloaded to your computer and accessible either offline through the Bookshelf (available as a free download), available online and also via the iPad and Android apps. Upon purchase, you'll gain instant access to this eBook. Time limit The eBooks products do not have an expiry date. You will continue to access your digital ebook products whilst you have your Bookshelf installed.

Differential Equations and Linear Algebra - Charles Henry Edwards 2013-08-27

For courses in Differential Equations and Linear Algebra. Acclaimed authors Edwards and Penney combine core topics in elementary differential equations with those concepts and methods of elementary linear algebra needed for a contemporary combined introduction to differential equations and linear algebra. Known for its real-world applications and its blend of algebraic and geometric approaches, this text discusses mathematical modeling of real-world phenomena, with a fresh new computational and qualitative flavor evident throughout in figures, examples, problems, and applications. In the Third Edition, new graphics and narrative have been added as needed—yet the proven chapter and section structure remains unchanged, so that class notes and syllabi will not require revision for the new edition.

Elementary Linear Algebra - Lawrence E. Spence 2013-08-29

For a sophomore-level course in Linear Algebra. Based on the recommendations of the Linear Algebra Curriculum Study Group, this introduction to linear algebra offers a matrix-oriented approach with more emphasis on problem solving and applications. Throughout the text, use of technology is encouraged. The focus is on matrix arithmetic, systems of linear equations, properties of Euclidean n -space, eigenvalues and eigenvectors, and orthogonality. Although matrix-oriented, the text provides a solid coverage of vector spaces

Introduction to Applied Linear Algebra - Stephen Boyd 2018-06-07

A groundbreaking introduction to vectors, matrices, and least squares for engineering applications, offering a wealth of practical examples.

Introductory Technical Mathematics for Engineering Technology (UTeM Press) - Adam Samsudin 2019-01-01

Teaching & Learning Series Modul of Introductory Technical Mathematics for Engineering Technology is a reference guidebook specially designed and written for Engineering Technology students of Universiti Teknikal Malaysia Melaka (UTeM). Its is based on the latest

syllabus of BEEU1013 and BMMU1013: Technical Mathematics that had been taught in Faculty of Engineering Technology Electric and Electronic (FTKEE) and Faculty of Engineering Technology Mechanical and Manufacturing (FTKMP). This compact guidebook uses simple language to help students master this subject efficiently in order to achieve good understanding and results.

Linear Algebra and Its Applications, Global Edition - David C. Lay
2015-06-03

NOTE: Before purchasing, check with your instructor to ensure you select the correct ISBN. Several versions of Pearson's MyLab & Mastering products exist for each title, and registrations are not transferable. To register for and use Pearson's MyLab & Mastering products, you may also need a Course ID, which your instructor will provide. Used books, rentals, and purchases made outside of PearsonIf purchasing or renting from companies other than Pearson, the access codes for Pearson's MyLab & Mastering products may not be included, may be incorrect, or may be previously redeemed. Check with the seller before completing your purchase. Note: You are purchasing a standalone product; MyMathLab does not come packaged with this content.

MyMathLab is not a self-paced technology and should only be purchased when required by an instructor. If you would like to purchase "both" the physical text and MyMathLab, search for: 9780134022697 / 0134022696 Linear Algebra and Its Applications plus New MyMathLab with Pearson eText -- Access Card Package, 5/e With traditional linear algebra texts, the course is relatively easy for students during the early stages as material is presented in a familiar, concrete setting. However, when abstract concepts are introduced, students often hit a 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. These concepts are fundamental to the study of linear algebra, so students' understanding of them is vital to mastering the subject. This text makes these concepts more accessible by introducing them early in a familiar, concrete "Rn" setting, developing them gradually, and returning to them throughout the text so that when they are discussed in the abstract, students are readily able to understand.

Linear Algebra: - Saikia, Promode Kumar

Linear Algebra is designed for postgraduate and undergraduate 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 decad

Algebra - Michael Artin 2013-10-03

The full text downloaded to your computer With eBooks you can: search for key concepts, words and phrases make highlights and notes as you study share your notes with friends eBooks are downloaded to your computer and accessible either offline through the Bookshelf (available as a free download), available online and also via the iPad and Android apps. Upon purchase, you'll gain instant access to this eBook. Time limit The eBooks products do not have an expiry date. You will continue to access your digital ebook products whilst you have your Bookshelf installed. Algebra, 2nd Edition, by Michael Artin, is ideal for the honors undergraduate or introductory graduate course. This 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.

Linear Algebra And Its Applications - Tzuong-tsieng Moh 2020-10-21 From Tzuong-Tsieng Moh, a seasoned expert in algebra, comes a new book for students to better understand linear algebra. Writing from an experienced standpoint, Moh covers the many standard aspects comprising linear algebra, such as echelon forms, matrix algebra, linear transformations, and more. Moh further includes several advanced topics and applications, as well as self-correcting codes, Heisenberg's uncertainty principle, Maxwell's equations in relativity form, Google's search engine, and the theory of finitely generated modules over a PID. This book is ideal for both newcomers and experienced readers who want to attain a deeper understanding on both the basics and advanced topics of linear algebra and its vast applications. The wide range of topics combined with the depth of each discussion make it essential to be on the shelf of every mathematical beginner and enthusiast.

Linear Algebra with Applications - Otto Bretscher 2013-08-27

Offering the most geometric presentation available, Linear Algebra with Applications, Fifth Edition emphasizes linear transformations as a unifying theme. This elegant textbook combines a user-friendly presentation with straightforward, lucid language to clarify and organize

the techniques and applications of linear algebra. Exercises and examples make up the heart of the text, with abstract exposition kept to a minimum. Exercise sets are broad and varied and reflect the author's creativity and passion for this course. This revision reflects careful review and appropriate edits throughout, while preserving the order of topics of the previous edition.

Linear Algebra and Its Applications - David C. Lay 2013-07-29

NOTE: This edition features the same content as the traditional text in a convenient, three-hole-punched, loose-leaf version. Books a la Carte also offer a great value--this format costs significantly less than a new textbook. Before purchasing, check with your instructor or review your course syllabus to ensure that you select the correct ISBN. Several versions of Pearson's MyLab & Mastering products exist for each title, including customized versions for individual schools, and registrations are not transferable. In addition, you may need a CourseID, provided by your instructor, to register for and use Pearson's MyLab & Mastering products. xxxxxxxxxxxxxxxx For courses in linear algebra. This package includes MyMathLab(R). With traditional linear algebra texts, the course is relatively easy for students during the early stages as material is presented in a familiar, concrete setting. However, when abstract concepts are introduced, students often hit a 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. These concepts are fundamental to the study of linear algebra, so students' understanding of them is vital to mastering the subject. This text makes these concepts more accessible by introducing them early in a familiar, concrete "Rn" setting, developing them gradually, and returning to them throughout the text so that when they are discussed in the abstract, students are readily able to understand. Personalize learning with MyMathLab MyMathLab is an online homework, tutorial, and assessment program designed to work with this text to engage students and improve results. MyMathLab includes assignable algorithmic exercises, the complete eBook, interactive figures, tools to personalize learning, and more.

Linear Algebra and Analytic Geometry for Physical Sciences - Giovanni Landi 2018-05-12

A self-contained introduction to finite dimensional vector spaces, matrices, systems of linear equations, spectral analysis on euclidean and hermitian spaces, affine euclidean geometry, quadratic forms and conic sections. The mathematical formalism is motivated and introduced by problems from physics, notably mechanics (including celestial) and electro-magnetism, with more than two hundreds examples and solved exercises. Topics include: The group of orthogonal transformations on euclidean spaces, in particular rotations, with Euler angles and angular velocity. The rigid body with its inertia matrix. The unitary group. Lie algebras and exponential map. The Dirac's bra-ket formalism. Spectral theory for self-adjoint endomorphisms on euclidean and hermitian spaces. The Minkowski spacetime from special relativity and the Maxwell equations. Conic sections with the use of eccentricity and Keplerian motions. An appendix collects basic algebraic notions like group, ring and field; and complex numbers and integers modulo a prime number. The book will be useful to students taking a physics or engineer degree for a basic education as well as for students who wish to be competent in the subject and who may want to pursue a post-graduate qualification.

Linear Algebra and Differential Equations - Gary L. Peterson 2014-11-17

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 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.

Linear Algebra with Applications, Global Edition - Steven Leon 2020-11-16

This book is for junior/senior-level first courses in linear algebra and assumes calculus as a prerequisite. This thorough and accessible text, from one of the leading figures in the use of technology in linear algebra, gives students a challenging and broad understanding of the subject. The author infuses key concepts with their modern practical applications to

offer students examples of how mathematics is used in the real world. Each chapter contains integrated worked examples and chapter tests. The book stresses the important roles geometry and visualisation play in understanding linear algebra.

Introduction to Linear Algebra - Gilbert Strang 1993

Book Description: Gilbert Strang's textbooks have changed the entire approach to learning linear algebra -- away from abstract vector spaces to specific examples of the four fundamental subspaces: the column space and nullspace of A and A' . Introduction to Linear Algebra, Fourth Edition includes challenge problems to complement the review problems that have been highly praised in previous editions. The basic course is followed by seven applications: differential equations, engineering, graph theory, statistics, Fourier methods and the FFT, linear programming, and computer graphics. Thousands of teachers in colleges and universities and now high schools are using this book, which truly explains this crucial subject.

Advanced Linear Algebra with Applications - Mohammad Ashraf 2022

This book provides a comprehensive knowledge of linear algebra for graduate and undergraduate courses. As a self-contained text, it aims at covering all important areas of the subject, including algebraic structures, matrices and systems of linear equations, vector spaces, linear transformations, dual and inner product spaces, canonical, bilinear, quadratic, sesquilinear, Hermitian forms of operators and tensor products of vector spaces with their algebras. The last three chapters focus on empowering readers to pursue interdisciplinary applications of linear algebra in numerical methods, analytical geometry and in solving linear system of differential equations. A rich collection of examples and exercises are present at the end of each section to enhance the conceptual understanding of readers. Basic knowledge of various notions, such as sets, relations, mappings, etc., has been pre-assumed.

Linear Algebra with Applications, Alternate Edition - Gareth Williams 2011-08-24

Building upon the sequence of topics of the popular 5th Edition, Linear Algebra with Applications, Alternate Seventh Edition provides instructors with an alternative presentation of course material. In this edition earlier chapters cover systems of linear equations, matrices, and determinates. The vector space \mathbb{R}^n is introduced in chapter 4, leading directly into general vector spaces and linear transformations. This order of topics is ideal for those preparing to use linear equations and matrices in their own fields. New exercises and modern, real-world applications allow students to test themselves on relevant key material and a MATLAB manual, included as an appendix, provides 29 sections of computational problems.

Differential Equations and Linear Algebra - Stephen W. Goode 2007

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.

Linear Algebra with Applications, Books a la Carte Edition - Steven J. Leon 2014-08-05

This edition features the same content as the traditional text in a convenient, three-hole-punched, loose-leaf version. Books a la Carte also offer a great value-this format costs significantly less than a new textbook. Before you purchase, check with your instructor or review your

course syllabus to ensure that you select the correct ISBN. Several versions of Pearson's MyLab & Mastering products exist for each title, including customized versions for individual schools, and registrations are not transferable. In addition, you may need a CourseID, provided by your instructor, to register for and use Pearson's MyLab & Mastering products. This book is for sophomore-level or junior/senior-level first courses in linear algebra and assumes calculus as a prerequisite. This thorough and accessible text, from one of the leading figures in the use of technology in linear algebra, gives students a challenging and broad understanding of the subject. The author infuses key concepts with their modern practical applications to offer students examples of how mathematics is used in the real world. Each chapter contains integrated worked examples and chapter tests. The book stresses the important roles geometry and visualization play in understanding linear algebra.

Linear Algebra - Kenneth Hoffman 1971

Applied Linear Algebra - Peter J. Olver 2018-05-30

This textbook develops the essential tools of linear algebra, with the goal of imparting technique alongside contextual understanding. Applications go hand-in-hand with theory, each reinforcing and explaining the other. This approach encourages students to develop not only the technical proficiency needed to go on to further study, but an appreciation for when, why, and how the tools of linear algebra can be used across modern applied mathematics. Providing an extensive treatment of essential topics such as Gaussian elimination, inner products and norms, and eigenvalues and singular values, this text can be used for an in-depth first course, or an application-driven second course in linear algebra. In this second edition, applications have been updated and expanded to include numerical methods, dynamical systems, data analysis, and signal processing, while the pedagogical flow of the core material has been improved. Throughout, the text emphasizes the conceptual connections between each application and the underlying linear algebraic techniques, thereby enabling students not only to learn how to apply the mathematical tools in routine contexts, but also to understand what is required to adapt to unusual or emerging problems. No previous knowledge of linear algebra is needed to approach this text, with single-variable calculus as the only formal prerequisite. However, the reader will need to draw upon some mathematical maturity to engage in the increasing abstraction inherent to the subject. Once equipped with the main tools and concepts from this book, students will be prepared for further study in differential equations, numerical analysis, data science and statistics, and a broad range of applications. The first author's text, Introduction to Partial Differential Equations, is an ideal companion volume, forming a natural extension of the linear mathematical methods developed here.

Linear Algebra: A Modern Introduction - David Poole 2014-03-19

David Poole's innovative LINEAR ALGEBRA: A MODERN INTRODUCTION, 4e emphasizes a vectors approach and better prepares students to make the transition from computational to theoretical mathematics. Balancing theory and applications, the book is written in a conversational style and combines a traditional presentation with a focus on student-centered learning. Theoretical, computational, and applied topics are presented in a flexible yet integrated way. Stressing geometric understanding before computational techniques, vectors and vector geometry are introduced early to help students visualize concepts and develop mathematical maturity for abstract thinking. Additionally, the book includes ample applications drawn from a variety of disciplines, which reinforce the fact that linear algebra is a valuable tool for modeling real-life problems. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.