

COURSE IN LINEAR ALGEBRA

COURSE IN LINEAR ALGEBRA IS A FUNDAMENTAL COMPONENT OF ADVANCED MATHEMATICS THAT PLAYS A CRUCIAL ROLE IN VARIOUS FIELDS SUCH AS ENGINEERING, COMPUTER SCIENCE, PHYSICS, AND MORE. THIS COURSE PROVIDES STUDENTS WITH A DEEP UNDERSTANDING OF VECTOR SPACES, LINEAR TRANSFORMATIONS, AND MATRIX THEORY, WHICH ARE ESSENTIAL FOR SOLVING COMPLEX PROBLEMS. THROUGH THIS ARTICLE, WE WILL EXPLORE THE KEY CONCEPTS OF LINEAR ALGEBRA, ITS APPLICATIONS, AND THE STRUCTURE OF A TYPICAL COURSE IN THIS DISCIPLINE. WE WILL ALSO DISCUSS THE IMPORTANCE OF LINEAR ALGEBRA IN MODERN TECHNOLOGY AND ITS RELEVANCE IN ACADEMIC AND PROFESSIONAL SETTINGS.

IN ADDITION, THIS ARTICLE WILL PROVIDE A COMPREHENSIVE OVERVIEW OF THE SKILLS AND KNOWLEDGE THAT STUDENTS CAN EXPECT TO GAIN FROM A COURSE IN LINEAR ALGEBRA, ALONG WITH THE PREREQUISITES AND RECOMMENDED RESOURCES FOR FURTHER STUDY.

- INTRODUCTION TO LINEAR ALGEBRA
- KEY CONCEPTS IN LINEAR ALGEBRA
- APPLICATIONS OF LINEAR ALGEBRA
- STRUCTURE OF A TYPICAL COURSE IN LINEAR ALGEBRA
- PREREQUISITES FOR STUDYING LINEAR ALGEBRA
- RECOMMENDED RESOURCES FOR LEARNING LINEAR ALGEBRA
- CONCLUSION

INTRODUCTION TO LINEAR ALGEBRA

LINEAR ALGEBRA IS THE BRANCH OF MATHEMATICS CONCERNING LINEAR EQUATIONS, LINEAR FUNCTIONS, AND THEIR REPRESENTATIONS THROUGH MATRICES AND VECTOR SPACES. IT SERVES AS A FOUNDATION FOR MANY AREAS OF MATHEMATICS AND IS VITAL IN PRACTICAL APPLICATIONS ACROSS VARIOUS DISCIPLINES. THE STUDY OF LINEAR ALGEBRA ALLOWS STUDENTS TO DEVELOP ANALYTICAL SKILLS THAT ARE ESSENTIAL FOR PROBLEM-SOLVING IN HIGH-DIMENSIONAL SPACES.

THE COURSE TYPICALLY BEGINS WITH AN INTRODUCTION TO THE BASIC CONCEPTS, SUCH AS VECTORS AND MATRICES. STUDENTS LEARN HOW TO PERFORM OPERATIONS ON THESE MATHEMATICAL ENTITIES, INCLUDING ADDITION, MULTIPLICATION, AND FINDING DETERMINANTS. UNDERSTANDING THESE FUNDAMENTAL OPERATIONS IS CRUCIAL FOR TACKLING MORE COMPLEX TOPICS LATER IN THE COURSE.

KEY CONCEPTS IN LINEAR ALGEBRA

VECTORS AND VECTOR SPACES

VECTORS ARE FUNDAMENTAL OBJECTS IN LINEAR ALGEBRA. A VECTOR CAN BE THOUGHT OF AS A QUANTITY WITH BOTH MAGNITUDE AND DIRECTION. VECTOR SPACES, ON THE OTHER HAND, ARE COLLECTIONS OF VECTORS THAT CAN BE SCALED AND ADDED TOGETHER WHILE STILL REMAINING WITHIN THE SET.

KEY PROPERTIES OF VECTOR SPACES INCLUDE:

- CLOSURE UNDER ADDITION AND SCALAR MULTIPLICATION
- EXISTENCE OF A ZERO VECTOR
- EXISTENCE OF ADDITIVE INVERSES
- ASSOCIATIVITY AND COMMUTATIVITY OF VECTOR ADDITION

UNDERSTANDING VECTOR SPACES IS ESSENTIAL FOR FURTHER STUDIES IN LINEAR TRANSFORMATIONS AND MATRIX REPRESENTATIONS.

MATRICES AND MATRIX OPERATIONS

MATRICES ARE RECTANGULAR ARRAYS OF NUMBERS THAT REPRESENT LINEAR TRANSFORMATIONS. THE STUDY OF MATRICES INVOLVES LEARNING VARIOUS OPERATIONS SUCH AS ADDITION, SUBTRACTION, MULTIPLICATION, AND FINDING INVERSES.

SOME IMPORTANT TOPICS RELATED TO MATRICES INCLUDE:

- DETERMINANTS: A SCALAR VALUE THAT CAN BE COMPUTED FROM THE ELEMENTS OF A SQUARE MATRIX, PROVIDING CRUCIAL INFORMATION ABOUT THE MATRIX.
- RANK: THE DIMENSION OF THE VECTOR SPACE GENERATED BY THE ROWS OR COLUMNS OF A MATRIX.
- EIGENVALUES AND EIGENVECTORS: THESE CONCEPTS RELATE TO THE SCALING FACTORS AND DIRECTION OF VECTORS UNDER LINEAR TRANSFORMATIONS.

THESE MATRIX OPERATIONS FORM THE BACKBONE OF MANY APPLICATIONS IN LINEAR ALGEBRA.

LINEAR TRANSFORMATIONS

LINEAR TRANSFORMATIONS ARE MAPPINGS BETWEEN VECTOR SPACES THAT PRESERVE THE OPERATIONS OF VECTOR ADDITION AND SCALAR MULTIPLICATION. UNDERSTANDING LINEAR TRANSFORMATIONS IS CRUCIAL FOR APPLYING LINEAR ALGEBRA IN REAL-WORLD SCENARIOS.

KEY ASPECTS OF LINEAR TRANSFORMATIONS INCLUDE:

- KERNEL: THE SET OF VECTORS THAT ARE MAPPED TO THE ZERO VECTOR UNDER THE TRANSFORMATION.
- IMAGE: THE SET OF ALL VECTORS THAT CAN BE EXPRESSED AS THE OUTPUT OF THE TRANSFORMATION.
- MATRIX REPRESENTATION: EVERY LINEAR TRANSFORMATION CAN BE REPRESENTED AS A MATRIX, LINKING THE THEORETICAL AND COMPUTATIONAL ASPECTS OF LINEAR ALGEBRA.

APPLICATIONS OF LINEAR ALGEBRA

LINEAR ALGEBRA HAS A WIDE ARRAY OF APPLICATIONS IN VARIOUS FIELDS, MAKING IT AN INDISPENSABLE TOOL FOR STUDENTS AND PROFESSIONALS ALIKE.

ENGINEERING

IN ENGINEERING, LINEAR ALGEBRA IS USED FOR MODELING AND SOLVING SYSTEMS OF EQUATIONS THAT DESCRIBE PHYSICAL PHENOMENA. APPLICATIONS INCLUDE:

- STRUCTURAL ANALYSIS
- ELECTRICAL CIRCUIT ANALYSIS
- CONTROL SYSTEMS

THESE APPLICATIONS REQUIRE AN UNDERSTANDING OF LINEAR EQUATIONS AND TRANSFORMATIONS TO DESIGN AND ANALYZE SYSTEMS EFFECTIVELY.

COMPUTER SCIENCE

IN COMPUTER SCIENCE, LINEAR ALGEBRA IS FUNDAMENTAL IN AREAS SUCH AS COMPUTER GRAPHICS, MACHINE LEARNING, AND DATA ANALYSIS. KEY APPLICATIONS INCLUDE:

- IMAGE PROCESSING AND TRANSFORMATION
- MACHINE LEARNING ALGORITHMS THAT RELY ON MATRIX FACTORIZATION
- GRAPH THEORY AND NETWORK ANALYSIS

THE ABILITY TO MANIPULATE DATA IN VECTOR SPACES IS ESSENTIAL FOR DEVELOPING EFFICIENT ALGORITHMS AND SOFTWARE.

PHYSICS

IN PHYSICS, LINEAR ALGEBRA IS USED TO DESCRIBE SYSTEMS IN QUANTUM MECHANICS, RELATIVITY, AND CLASSICAL MECHANICS. ITS APPLICATIONS INCLUDE:

- DESCRIBING PHYSICAL STATES AS VECTORS IN HILBERT SPACE
- ANALYZING SYSTEMS OF PARTICLES
- MODELING WAVE FUNCTIONS AND TRANSFORMATIONS

THE MATHEMATICAL RIGOR PROVIDED BY LINEAR ALGEBRA ALLOWS PHYSICISTS TO DEVELOP PREDICTIVE MODELS OF NATURAL

PHENOMENA.

STRUCTURE OF A TYPICAL COURSE IN LINEAR ALGEBRA

A COURSE IN LINEAR ALGEBRA TYPICALLY FOLLOWS A STRUCTURED SYLLABUS THAT GRADUALLY BUILDS UPON FUNDAMENTAL CONCEPTS.

COURSE OUTLINE

THE COURSE IS GENERALLY DIVIDED INTO SEVERAL MODULES, EACH FOCUSING ON DIFFERENT ASPECTS OF LINEAR ALGEBRA:

- INTRODUCTION TO VECTORS AND MATRICES
- VECTOR SPACES AND SUBSPACES
- LINEAR TRANSFORMATIONS AND MATRIX REPRESENTATIONS
- DETERMINANTS AND EIGENVALUES
- APPLICATIONS OF LINEAR ALGEBRA IN VARIOUS FIELDS

EACH MODULE INCLUDES LECTURES, PROBLEM SETS, AND PROJECTS THAT ENCOURAGE PRACTICAL APPLICATION OF THE CONCEPTS LEARNED.

ASSESSMENT AND EVALUATION

ASSESSMENT IN A LINEAR ALGEBRA COURSE TYPICALLY INVOLVES:

- HOMEWORK ASSIGNMENTS TO PRACTICE PROBLEM-SOLVING SKILLS
- QUIZZES AND EXAMS TO TEST UNDERSTANDING OF THEORETICAL CONCEPTS
- PROJECTS THAT APPLY LINEAR ALGEBRA TO REAL-WORLD PROBLEMS

THIS COMBINATION ENSURES THAT STUDENTS NOT ONLY GRASP THEORETICAL KNOWLEDGE BUT ALSO DEVELOP PRACTICAL SKILLS.

PREREQUISITES FOR STUDYING LINEAR ALGEBRA

BEFORE ENROLLING IN A COURSE IN LINEAR ALGEBRA, STUDENTS SHOULD HAVE A SOLID FOUNDATION IN MATHEMATICS. RECOMMENDED PREREQUISITES TYPICALLY INCLUDE:

- HIGH SCHOOL ALGEBRA: UNDERSTANDING BASIC ALGEBRAIC OPERATIONS IS ESSENTIAL.

- **CALCULUS:** FAMILIARITY WITH DERIVATIVES AND INTEGRALS IS BENEFICIAL.
- **BASIC GEOMETRY:** KNOWING GEOMETRIC INTERPRETATIONS OF VECTORS AND MATRICES CAN HELP.

THESE PREREQUISITES ENSURE THAT STUDENTS ARE ADEQUATELY PREPARED TO TACKLE THE COMPLEXITIES OF LINEAR ALGEBRA.

RECOMMENDED RESOURCES FOR LEARNING LINEAR ALGEBRA

TO EXCEL IN A COURSE IN LINEAR ALGEBRA, STUDENTS CAN UTILIZE VARIOUS RESOURCES:

- **TEXTBOOKS:** COMPREHENSIVE TEXTS SUCH AS "LINEAR ALGEBRA AND ITS APPLICATIONS" BY DAVID C. LAY PROVIDE THOROUGH EXPLANATIONS AND PRACTICE PROBLEMS.
- **ONLINE COURSES:** PLATFORMS LIKE COURSERA AND EDX OFFER STRUCTURED COURSES ON LINEAR ALGEBRA.
- **VIDEO LECTURES:** WEBSITES LIKE KHAN ACADEMY PROVIDE FREE VIDEO TUTORIALS ON KEY CONCEPTS.

THESE RESOURCES CAN GREATLY ENHANCE UNDERSTANDING AND PROVIDE ADDITIONAL PRACTICE OUTSIDE THE CLASSROOM.

CONCLUSION

UNDERSTANDING A COURSE IN LINEAR ALGEBRA IS VITAL FOR STUDENTS PURSUING CAREERS IN MATHEMATICS, ENGINEERING, COMPUTER SCIENCE, AND MANY OTHER FIELDS. THE CONCEPTS LEARNED IN THIS COURSE NOT ONLY PROVIDE A FOUNDATION FOR ADVANCED STUDIES BUT ALSO EQUIP STUDENTS WITH PROBLEM-SOLVING SKILLS APPLICABLE TO REAL-WORLD CHALLENGES. WITH A STRUCTURED APPROACH, PROPER PREREQUISITES, AND THE RIGHT RESOURCES, STUDENTS CAN SUCCESSFULLY NAVIGATE THROUGH THE COMPLEXITIES OF LINEAR ALGEBRA AND ITS APPLICATIONS.

Q: WHAT IS A COURSE IN LINEAR ALGEBRA?

A: A COURSE IN LINEAR ALGEBRA TEACHES CONCEPTS RELATED TO VECTORS, MATRICES, AND LINEAR TRANSFORMATIONS. IT COVERS OPERATIONS ON THESE MATHEMATICAL ENTITIES AND THEIR APPLICATIONS IN VARIOUS FIELDS SUCH AS ENGINEERING, COMPUTER SCIENCE, AND PHYSICS.

Q: WHAT ARE THE KEY TOPICS COVERED IN A LINEAR ALGEBRA COURSE?

A: KEY TOPICS INCLUDE VECTOR SPACES, MATRIX OPERATIONS, DETERMINANTS, EIGENVALUES AND EIGENVECTORS, AND LINEAR TRANSFORMATIONS. THE COURSE ALSO EXPLORES APPLICATIONS IN REAL-WORLD SCENARIOS.

Q: WHY IS LINEAR ALGEBRA IMPORTANT?

A: LINEAR ALGEBRA IS CRUCIAL BECAUSE IT PROVIDES TOOLS FOR MODELING AND SOLVING PROBLEMS IN MULTIPLE DISCIPLINES, INCLUDING ENGINEERING, COMPUTER SCIENCE, AND PHYSICS. IT HELPS IN UNDERSTANDING COMPLEX SYSTEMS AND DATA STRUCTURES.

Q: WHAT PREREQUISITES ARE NEEDED FOR STUDYING LINEAR ALGEBRA?

A: PREREQUISITES TYPICALLY INCLUDE HIGH SCHOOL ALGEBRA, BASIC CALCULUS, AND SOME UNDERSTANDING OF GEOMETRY. A SOLID FOUNDATION IN THESE AREAS PREPARES STUDENTS FOR THE CONCEPTS IN LINEAR ALGEBRA.

Q: WHAT RESOURCES ARE RECOMMENDED FOR LEARNING LINEAR ALGEBRA?

A: RECOMMENDED RESOURCES INCLUDE TEXTBOOKS LIKE "LINEAR ALGEBRA AND ITS APPLICATIONS," ONLINE COURSES FROM PLATFORMS LIKE COURSERA, AND VIDEO LECTURES FROM EDUCATIONAL WEBSITES LIKE KHAN ACADEMY.

Q: HOW IS A LINEAR ALGEBRA COURSE TYPICALLY STRUCTURED?

A: A LINEAR ALGEBRA COURSE IS STRUCTURED INTO MODULES COVERING TOPICS SUCH AS VECTORS, MATRICES, VECTOR SPACES, AND APPLICATIONS. ASSESSMENT USUALLY INCLUDES HOMEWORK, QUIZZES, AND PROJECTS.

Q: WHAT ARE EIGENVALUES AND EIGENVECTORS?

A: EIGENVALUES AND EIGENVECTORS ARE CONCEPTS THAT DESCRIBE THE CHARACTERISTICS OF A LINEAR TRANSFORMATION REPRESENTED BY A MATRIX. AN EIGENVALUE INDICATES A SCALING FACTOR, WHILE THE EIGENVECTOR INDICATES THE DIRECTION THAT REMAINS UNCHANGED UNDER THE TRANSFORMATION.

Q: IN WHAT FIELDS IS LINEAR ALGEBRA APPLIED?

A: LINEAR ALGEBRA IS APPLIED IN VARIOUS FIELDS INCLUDING ENGINEERING FOR MODELING SYSTEMS, COMPUTER SCIENCE FOR DATA ANALYSIS AND ALGORITHMS, AND PHYSICS FOR DESCRIBING PHYSICAL PHENOMENA.

Q: CAN I STUDY LINEAR ALGEBRA ONLINE?

A: YES, MANY PLATFORMS OFFER ONLINE COURSES IN LINEAR ALGEBRA, INCLUDING MOOCs AND EDUCATIONAL WEBSITES, MAKING IT ACCESSIBLE FOR SELF-STUDY.

Q: WHAT TYPE OF ASSESSMENT CAN I EXPECT IN A LINEAR ALGEBRA COURSE?

A: ASSESSMENT TYPICALLY INCLUDES HOMEWORK ASSIGNMENTS, QUIZZES, EXAMS, AND PROJECTS THAT APPLY LINEAR ALGEBRA CONCEPTS TO PRACTICAL PROBLEMS.

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subject since it contains complete solutions to all 283 exercises in the book.

course in linear algebra: A First Course in Linear Algebra Robert A. Beezer, 2012-12-01 An introduction to the basic concepts of linear algebra, along with an introduction to the techniques of formal mathematics. Numerous worked examples and exercises, along with precise statements of definitions and complete proofs of every theorem, make the text ideal for independent study.

course in linear algebra: A Course in Linear Algebra David B. Damiano, John B. Little, 2011-01-01 Suitable for advanced undergraduates and graduate students, this text introduces basic concepts of linear algebra. Each chapter contains an introduction, definitions, and propositions, in addition to multiple examples, lemmas, theorems, corollaries, and proofs. Each chapter features numerous supplemental exercises, and solutions to selected problems appear at the end. 1988 edition--

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course in linear algebra: Linear Algebra Arak M. Mathai, Hans J. Haubold, 2017-10-23 In order not to intimidate students by a too abstract approach, this textbook on linear algebra is written to be easy to digest by non-mathematicians. It introduces the concepts of vector spaces and mappings between them without dwelling on statements such as theorems and proofs too much. It is also designed to be self-contained, so no other material is required for an understanding of the topics covered. As the basis for courses on space and atmospheric science, remote sensing, geographic information systems, meteorology, climate and satellite communications at UN-affiliated regional centers, various applications of the formal theory are discussed as well. These include differential equations, statistics, optimization and some engineering-motivated problems in physics. Contents Vectors Matrices Determinants Eigenvalues and eigenvectors Some applications of matrices and determinants Matrix series and additional properties of matrices

course in linear algebra: A First Course In Linear Algebra Shou-te Chang, Minking Eie, 2016-07-13 A First Course in Linear Algebra is written by two experts from algebra who have more than 20 years of experience in algebra, linear algebra and number theory. It prepares students with no background in Linear Algebra. Students, after mastering the materials in this textbook, can already understand any Linear Algebra used in more advanced books and research papers in Mathematics or in other scientific disciplines. This book provides a solid foundation for the theory dealing with finite dimensional vector spaces. It explains in details the relation between linear transformations and matrices. One may thus use different viewpoints to manipulate a matrix instead of a one-sided approach. Although most of the examples are for real and complex matrices, a vector space over a general field is briefly discussed. Several optional sections are devoted to applications to demonstrate the power of Linear Algebra.

course in linear algebra: A First Course in Linear Algebra Daniel Zelinsky, 2014-05-12 A First Course in Linear Algebra provides an introduction to the algebra and geometry of vectors, matrices, and linear transformations. This book is designed as a background for second-year courses in calculus of several variables and differential equations where the theory of linear differential equations parallels that of linear algebraic equations. The topics discussed include the multiplication of vectors by scalars, vectors in n -space, planes and lines, and composites of linear mappings. The symmetric matrices and mappings, quadratic forms, change of coordinates, and effect of change of basis on matrices of linear functions are also described. This text likewise considers the computation of determinants, diagonalizable transformations, computation of eigenvalues and eigenvectors, and principal axis theorem. This publication is suitable for college students taking a course in linear algebra.

course in linear algebra: *A First Course in Linear Algebra* David Easdown, 2011 An engaging introductory text to linear algebra for new students entering university and returning mature-age students. It aims to make critical algebraic concepts easy to understand.

course in linear algebra: *First Course in Linear Algebra* Adil Yaqub, 1996-01-01

course in linear algebra: *Linear Algebra: Core Topics For The First Course* Dragu Atanasiu, Piotr Mikusinski, 2020-03-26 The book is an introduction to linear algebra intended as a textbook for the first course in linear algebra. In the first six chapters we present the core topics: matrices, the vector space $\mathbb{R}^n$, orthogonality in $\mathbb{R}^n$, determinants, eigenvalues and eigenvectors, and linear transformations. The book gives students an opportunity to better understand linear algebra in the next three chapters: Jordan forms by examples, singular value decomposition, and quadratic forms and positive definite matrices. In the first nine chapters everything is formulated in terms of $\mathbb{R}^n$. This makes the ideas of linear algebra easier to understand. The general vector spaces are introduced in Chapter 10. The last chapter presents problems solved with a computer algebra system. At the end of the book we have results or solutions for odd numbered exercises.

course in linear algebra: *A First Course in Linear Algebra* Hal G. Moore, Adil Yaqub, 1998-03-18 This text intends to transform students from passive observers of mathematics to participants in it. The book employs a spiral development of ideas to blend the requirements of problem solving, analytical thinking, computational technique, and applications, and emphasizes the interplay of algebraic and geometric concepts. It includes an extensive number of exercises, ranging from routine to challenging. The Third Edition offers 40 percent new material, including many new applications. It incorporates MATLAB to demonstrate how computational software tools can be used in this field. * Offers a proven, successful approach to Linear Algebra * Contains a practical presentation, illuminating examples, and exceptional exercises, thus enabling instructors to emphasize computational techniques, theoretical material, and applications * Includes a wide variety of effective applications * Provides a student friendly writing style * Begins with the familiar and proceeds to the new in a well-motivated manner * Acknowledges current reforms and proceeds from there * Explains how to solve some examples in MATLAB, demonstrating how such software tools can be used in this field * Includes student projects at close of chapter exercise sets

course in linear algebra: *A Course in Linear Algebra with Applications* Derek John Scott Robinson, 1991 The book is an introduction to Linear Algebra with an account of its principal applications. It is addressed to students of mathematics, the physical, engineering and social sciences, and commerce. The reader is assumed to have completed the calculus sequence. Special features of the book are thorough coverage of all core areas of linear algebra, with a detailed account of such important applications as least squares, systems of linear recurrences, Markov processes, and systems of differential equations. The book also gives an introduction to some more advanced topics such as diagonalization of Hermitian matrices and Jordan form. A principal aim of the book is to make the material accessible to the reader who is not a mathematician, without loss of mathematical rigor. This is reflected in a wealth of examples, the clarity of writing and the organization of material. There is a growing need for knowledge of linear algebra that goes beyond the basic skills of solving systems of linear equations and this book is intended to meet it.

course in linear algebra: *A Course in Linear Algebra* Raju K. George, Abhijith Ajayakumar, 2024-03-03 Designed for senior undergraduate and graduate courses in mathematics and engineering, this self-contained textbook discusses key topics in linear algebra with real-life applications. Split into two parts—theory in part I and solved problems in part II—the book makes both theoretical and applied linear algebra easily accessible. Topics such as sets and functions, vector spaces, linear transformations, eigenvalues and eigenvectors, normed spaces, and inner product spaces are discussed in part I; while in part II, over 500 meticulously solved problems show how to use linear algebra in real-life situations. A must-have book for linear algebra courses; it also serves as valuable supplementary material.

course in linear algebra: *Introduction to Linear and Matrix Algebra* Nathaniel Johnston, 2021-05-19 This textbook emphasizes the interplay between algebra and geometry to motivate the

study of linear algebra. Matrices and linear transformations are presented as two sides of the same coin, with their connection motivating inquiry throughout the book. By focusing on this interface, the author offers a conceptual appreciation of the mathematics that is at the heart of further theory and applications. Those continuing to a second course in linear algebra will appreciate the companion volume *Advanced Linear and Matrix Algebra*. Starting with an introduction to vectors, matrices, and linear transformations, the book focuses on building a geometric intuition of what these tools represent. Linear systems offer a powerful application of the ideas seen so far, and lead onto the introduction of subspaces, linear independence, bases, and rank. Investigation then focuses on the algebraic properties of matrices that illuminate the geometry of the linear transformations that they represent. Determinants, eigenvalues, and eigenvectors all benefit from this geometric viewpoint. Throughout, "Extra Topic" sections augment the core content with a wide range of ideas and applications, from linear programming, to power iteration and linear recurrence relations. Exercises of all levels accompany each section, including many designed to be tackled using computer software. *Introduction to Linear and Matrix Algebra* is ideal for an introductory proof-based linear algebra course. The engaging color presentation and frequent marginal notes showcase the author's visual approach. Students are assumed to have completed one or two university-level mathematics courses, though calculus is not an explicit requirement. Instructors will appreciate the ample opportunities to choose topics that align with the needs of each classroom, and the online homework sets that are available through WeBWorK.

course in linear algebra: A First Course in Linear Algebra Ken Kuttler, 2014-01-21

course in linear algebra: A First Course in Linear Algebra Mohammed K A Kaabar, 2014-10-20

In this book, there are five chapters: Systems of Linear Equations, Vector Spaces, Homogeneous Systems, Characteristic Equation of Matrix, and Matrix Dot Product. It is also included exercises at the end of each chapter above to let students practice additional sets of problems other than examples, and they can also check their solutions to some of these exercises by looking at "Answers to Odd-Numbered Exercises" section at the end of this book. This book is very useful for college students who studied Calculus I, and other students who want to review some linear algebra concepts before studying a second course in linear algebra.

course in linear algebra: A Course in Linear Algebra Gareth Williams, 1972

course in linear algebra: A First Course in Linear Algebra Raymond A. Beauregard, John B. Fraleigh, 1973

course in linear algebra: Linear Algebra Tom M. Apostol, 2014-08-22 Developed from the author's successful two-volume Calculus text this book presents Linear Algebra without emphasis on abstraction or formalization. To accommodate a variety of backgrounds, the text begins with a review of prerequisites divided into precalculus and calculus prerequisites. It continues to cover vector algebra, analytic geometry, linear spaces, determinants, linear differential equations and more.

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