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COMPREHENSIVE COVERAGE OF

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and Gaussian elimination, and proceeds to discuss vector spaces, linear maps, scalar products, determinants, and eigenvalues. The book contains a large number of exercises, some of the routine computational type, while others are conceptual.

Lectures on Linear Algebra

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classroom instruction or self-study, is unique to this book. New to the Fourth Edition: Ten new application sections. A new section on change of basis. This concept now appears in several places. Chapters 14-16 on higher

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dimensions are notably revised. A deeper look at polynomials in the gallery of spaces. Introduces the QR decomposition and its relevance to least squares. Similarity and diagonalization are given more attention, as are

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eigenfunctions. A longer thread on least squares, running from orthogonal projections to a solution via SVD and the pseudoinverse. More applications for PCA have been added. More examples, exercises, and more on

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the kernel and general linear spaces. A list of applications has been added in Appendix A. The book gives instructors the option of tailoring the course for the primary interests of their students: mathematics, engineering,

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The Weyr matrix canonical form is a largely unknown cousin of the Jordan canonical form. Discovered by Eduard Weyr in 1885, the Weyr form outperforms the Jordan form

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in a number of mathematical situations, yet it remains somewhat of a mystery, even to many who are skilled in linear algebra. Written in an engaging style, this book presents various advanced topics in linear algebra

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linked through the Weyr form. Kevin O'Meara, John Clark, and Charles Vinsonhaler develop the Weyr form from scratch and include an algorithm for computing it. A fascinating duality exists between the Weyr form and the

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Jordan form. Developing an understanding of both forms will allow students and researchers to exploit the mathematical capabilities of each in varying situations. Weaving together ideas and applications from various

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mathematical disciplines,
Advanced Topics in Linear Algebra
is much more than a derivation of
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as matrix commutativity problems,
approximate simultaneous

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diagonalization, and algebraic geometry, with the latter two having topical connections to phylogenetic invariants in biomathematics and multivariate interpolation. Among the related mathematical disciplines from

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