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**MR1444820 (98k:65002)**[Trefethen, Lloyd N. \(1-CRNL\)](#); [Bau, David, III \(1-MSFT\)](#)★**Numerical linear algebra.***Society for Industrial and Applied Mathematics (SIAM), Philadelphia, PA, 1997. xii+361 pp.*

\$34.50. ISBN 0-89871-361-7

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This book, presented in the form of 40 lectures, covers almost the entire spectrum of fundamental issues in matrix computations. Each lecture focuses on one or two central ideas, yet a balance is maintained throughout all topics. The emphasis of this book, as the authors explain in its preface, is more on the applied linear algebra than on the numerical linear algebra. Thus, in addition to discussing practical techniques, the mathematical concepts behind algorithms are accentuated in each lecture, followed by a reasonable collection of interesting and stimulating exercise problems. The book is organized as follows: Chapter 1 introduces the fundamentals, including the singular value decompositions. Chapter 2 discusses the  $QR$  factorization and its applications. Chapter 3 examines issues on conditioning and stability. Chapter 4 addresses the standard problem of solving linear systems. Chapter 5 concentrates on eigenvalue problems. Chapter 6 is devoted to the study of iterative methods, both classical and modern approaches. This book is concluded by the appendix “Notes” that provides an informative and insightful review of the historical development of subject(s) in each individual lecture.

**Reviewed** by [Moody T. Chu](#)

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