An Introduction to Numerical Methods and Analysis, 2nd Edition

James F. Epperson

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📖 DESCRIPTION

Praise for the *First Edition*

". . . outstandingly appealing with regard to its style, contents, considerations of requirements of practice, choice of examples, and exercises."— *Zentralblatt MATH*

". . . carefully structured with many detailed worked examples."— *The Mathematical Gazette*

The *Second Edition* of the highly regarded *An Introduction to Numerical Methods and Analysis* provides a fully revised guide to numerical approximation. The book continues to be accessible and expertly guides readers through the many available techniques of numerical methods and analysis.

An Introduction to Numerical Methods and Analysis, Second Edition reflects the latest trends in the field, includes new material and revised exercises, and offers a unique emphasis on applications. The author clearly explains how to both construct and evaluate approximations for accuracy and performance, which are key skills in a variety of fields. A wide range of higher-level methods and solutions, including new topics such as the roots of polynomials, spectral collocation, finite element ideas, and Clenshaw-Curtis quadrature, are presented from an introductory perspective, and the *Second Edition* also features:

• Chapters and sections that begin with basic, elementary material followed by gradual coverage of more advanced material

• Exercises ranging from simple hand computations to challenging derivations and minor proofs to programming exercises

• Widespread exposure and utilization of MATLAB

• An appendix that contains proofs of various theorems and other material

The book is an ideal textbook for students in advanced undergraduate mathematics and engineering courses who are interested in gaining an understanding of numerical methods and numerical analysis.

◣ ABOUT THE AUTHOR

JAMES F. EPPERSON, PhD, is Associate Editor of *Mathematical Reviews* for the American Mathematical Society. He was previously associate professor in the Department of Mathematics at The University of Alabama in Huntsville and assistant professor at the University of Georgia in Athens. He earned his doctorate at Carnegie Mellon University in Pittsburgh and his undergraduate degree from the College of Engineering at the University of Michigan, Ann Arbor.