

"This impressive volume covers an unusually broad range of topics in the field of numerical analysis ... A particularly appealing feature of the text is the way in which it integrates a mathematically rigorous exposition with a wealth of illustrative examples, including numerical simulations, sample codes, and exercises. I warmly recommend the book to students and lecturers as an advanced undergraduate or introductory graduate-level text."

**Endre Süli, University of Oxford**

"This long-awaited graduate text covers every topic of a traditional, one-year numerical analysis course in an accessible, rigorous, and comprehensive way. It's an indispensable assistant for anyone offering the class and a precious source of knowledge for a junior researcher in the field."

**Maxim Olshanskii, University of Houston**

"This is the book I have been waiting for: a textbook of numerical analysis fit for the twenty-first century. It sketches a path from the mathematical foundations of the subject to the wide range of its modern methods and algorithms, compromising on neither rigor nor clarity."

**Arieh Iserles, University of Cambridge**

"... The chosen topics in the book match exactly what one wishes to cover in a two-semester course sequence in computational mathematics, as the selection of the numerical methods aligns with the modern treatment of the subjects. Many instructors in the field have struggled to find two or more textbooks for the same coverage, but you can have all of them in this book."

**Xiaofan Li, Illinois Institute of Technology**

Numerical analysis is a broad field, and coming to grips with all of it may seem like a daunting task. This text provides a thorough and comprehensive exposition of all the topics contained in a classical graduate sequence in numerical analysis. With an emphasis on theory and connections with linear algebra and analysis, the book shows all the rigor of numerical analysis. Its high level and exhaustive coverage will prepare students for research in the field and will become a valuable reference as they continue their career. Students will appreciate the simple notation and clear assumptions and arguments, as well as the many examples and classroom-tested exercises ranging from simple verification to qualifying exam-level problems. In addition to the many examples with hand calculations, readers will also be able to translate theory into practical computational codes by running sample MATLAB codes as they try out new concepts.

Designed by EMC Design Ltd

SALGADO  
and WISE

CLASSICAL NUMERICAL ANALYSIS

ABNER J. SALGADO  
and STEVEN M. WISE

# CLASSICAL NUMERICAL ANALYSIS

A Comprehensive Course

CAMBRIDGE  
UNIVERSITY PRESS  
www.cambridge.org



CAMBRIDGE