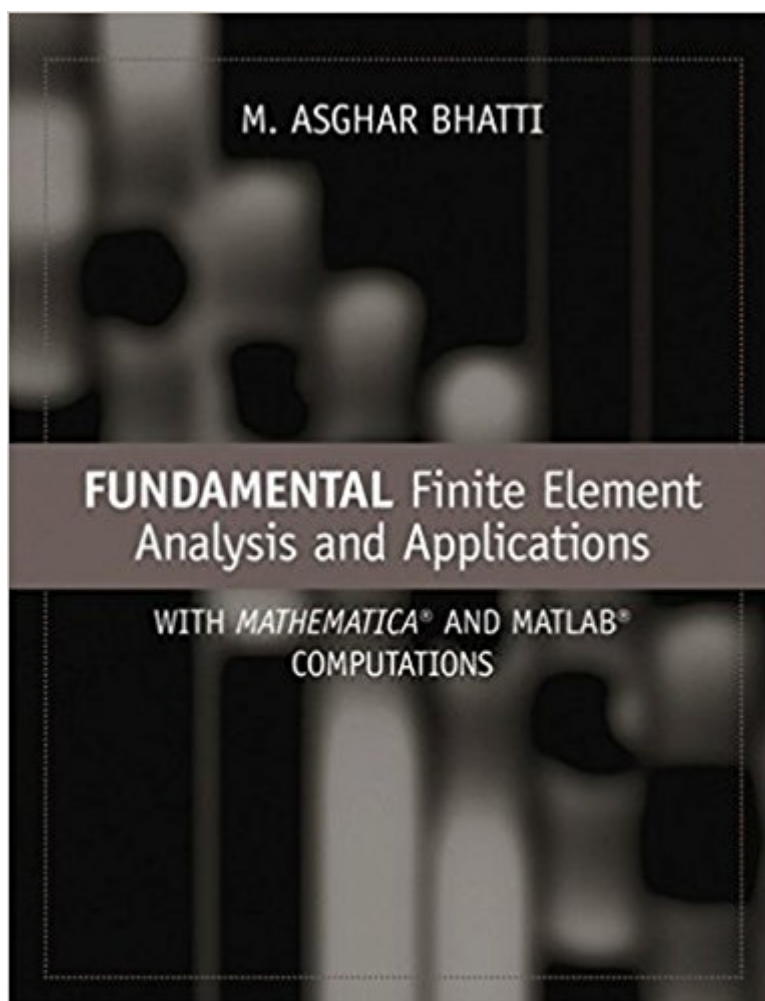


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# Fundamental Finite Element Analysis And Applications: With Mathematica And Matlab Computations



## Synopsis

\*Finite Element Analysis with Mathematica and Matlab Computations and Practical Applications is an innovative, hands-on and practical introduction to the Finite Element Method that provides a powerful tool for learning this essential analytic method. \*Support website ([www.wiley.com/go/bhatti](http://www.wiley.com/go/bhatti)) includes complete sets of Mathematica and Matlab implementations for all examples presented in the text. Also included on the site are problems designed for self-directed labs using commercial FEA software packages ANSYS and ABAQUS. \*Offers a practical and hands-on approach while providing a solid theoretical foundation.

## Book Information

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"The book is an innovative, hands-on and practical introduction to the finite element method that provides a powerful tool for learning this essential analytic method." (Zentralblatt MATH 2016) The book is an innovative, hands-on and practical introduction to the finite element method that provides a powerful tool for learning this essential analytic method.

A unique, hands-on introduction to the Finite Element Method Fundamental Finite Element Analysis and Applications: with Mathematica® and MATLAB® Computations is an innovative, practical guide to discovering the Finite Element Method (FEM). Providing a helpful balance between theory and application, it presents the FEM as a tool to find approximate solutions of differential equations, making it a useful resource for students from a variety of disciplines. Using a unique combination of

live Mathematica® and MATLAB® implementations, along with problems in both ANSYS® and ABAQUS® formats, this hands-on book reveals the logic behind the equations to facilitate a full understanding of methods and solutions. In nine convenient chapters, Fundamental Finite Element Analysis and Applications: with Mathematica® and MATLAB® Computations covers: Finite Element Method: The Big Picture Mathematical Foundation of the Finite Element Method One-Dimensional Boundary Value Problems Trusses, Beams, and Frames Two-Dimensional Elements Mapped Elements Analysis of Elastic Solids Transient Problems p-Formulation An associated Web site (wiley.com/go/bhatti) includes interactive application files and notebooks for Mathematica®, MATLAB®, ANSYS®, and ABAQUS®, with expanded exercises to use with the book. Fundamental Finite Element Analysis with Mathematica® and MATLAB® Computations is a clear and accessible learning tool for senior undergraduate and graduate-level students.

Clear examples given and explains very thoroughly

great book.

This is a solid book for learning the basics of finite element analysis. I prefer more mathematically inclined texts such as Reddy for example.

This book found the balance between FEM applications and theory. I recommend to graduate students who wants to get some help with FEM programming and learn the underlying fundamentals of the finite element method.

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