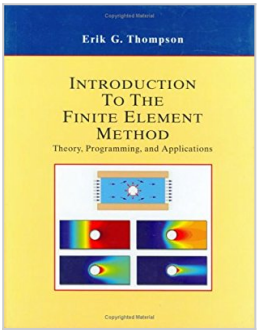

Introduction to the Finite Element Method: Theory, Programming and Applications

By Erik G. Thompson

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This text presents an introduction to the finite element method including theory, coding, and applications. The theory is presented without recourse to any specific discipline, and the applications span a broad range of engineering problems. The codes are written in MATLAB script in such a way that they are easily translated to other computer languages such as FORTRAN. All codes given in the text are available for downloading from the text's Web page, along with data files for running the test problems shown in the text. All codes can be run on the student version of MATLAB (not included).

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- Sales Rank: #2965795 in Books
- Published on: 2004-02-04
- Original language: English
- Number of items: 1
- Dimensions: 10.00" h x .80" w x 8.00" l, 1.88 pounds
- Binding: Hardcover
- 360 pages

Editorial Review

From the Back Cover
The right balance of theory, programming, and applications

Erik Thompson presents the theory, applications, and programming skills you'll need to understand the finite element method and use it to solve problems in engineering analysis and design. Offering concise, highly practical coverage, this introductory text presents complete finite element codes that can be run on the student version of MATLAB or easily converted to other languages.

Master the basic theory: The text promotes an understanding and appreciation of the theoretical basis of finite element approximations by building on concepts that are intuitive. Throughout, the text uses matrix notation to help you visualize the finite element matrices. Study problems reinforce basic theory.

Experiment with the code: Numerical experiments show how to test programs for possible errors, experiment with boundary conditions, and study accuracy and stability. Code development exercises suggest ways to modify the codes to create additional capabilities. All codes are available on the book's web page along with sample data files for testing them. Each code can be immediately run using only the student version of MATLAB. Because each code is written using explicit programming, they also serve as pseudo-codes that can be used to develop programs in any computer language.

Gain hands-on experience: Projects, representing a wide variety of engineering disciplines, enable you to conduct analyses of fairly complex problems. Many of these projects encourage you to investigate new techniques for using the finite element method.

Users Review

From reader reviews:

Yasmin Parker:

The guide with title Introduction to the Finite Element Method: Theory, Programming and Applications has lot of information that you can understand it. You can get a lot of gain after read this book. This particular book exist new knowledge the information that exist in this e-book represented the condition of the world currently. That is important to yo7u to find out how the improvement of the world. That book will bring you within new era of the internationalization. You can read the e-book in your smart phone, so you can read that anywhere you want.

Nancy Nault:

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