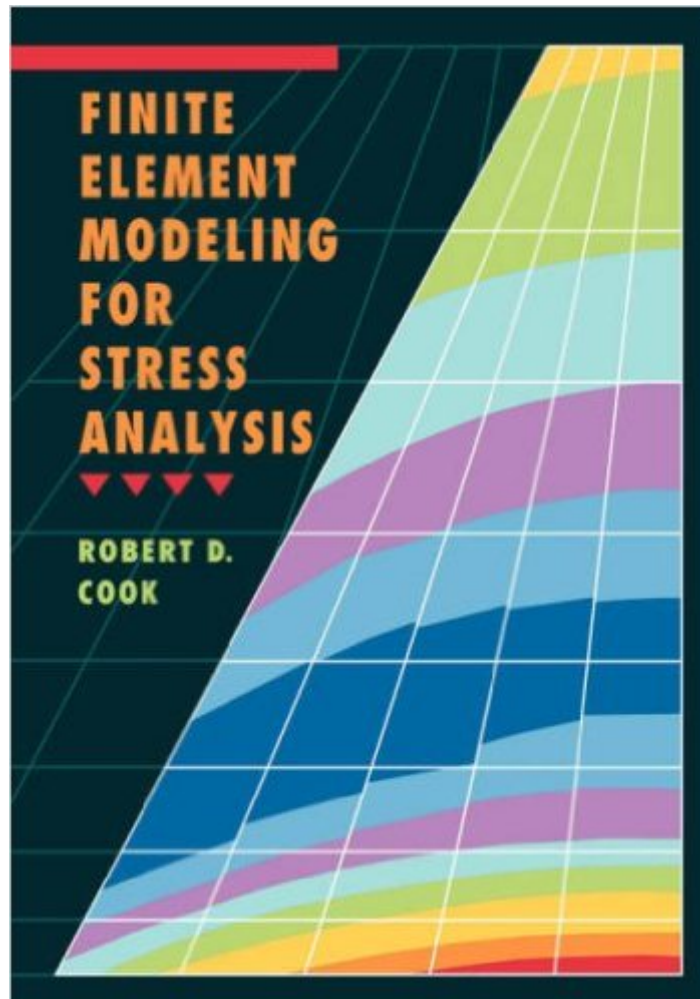# Finite Element Modeling For Stress Analysis

Synopsis

Oriented toward those who will use finite elements (FE) rather than toward theoreticians and computer programmers. Emphasizes the behavior of FE and how to use the FE method successfully. Includes several examples of FE analysis--each one features a critique of the accuracy of the solutions. Contains end-of-chapter exercises and extensive advice about FE modeling.

Book Information

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Average Customer Review: 4.3 out of 5 stars See all reviews (7 customer reviews)

Best Sellers Rank: #183,960 in Books (See Top 100 in Books)   #59 in Books > Engineering & Transportation > Engineering > Civil & Environmental > Structural   #118 in Books > Textbooks > Engineering > Civil Engineering   #242 in Books > Textbooks > Engineering > Mechanical Engineering

Customer Reviews

Let me start out by saying that an excellent starter book on FEA has yet to be written. It's a frustrating situation, but we'll have to live with it for now. Cook has the foundation for a really good book here. He does a decent job of explaining element formulations and their limitations without bringing on endless pages of variational calculus that we're all sick of seeing in FEA books.But the book needs more development. What engineers want is a book that will give the BASIC mathematical foundations, and then get on with showing how to DO finite element analysis. That was the attempt of Adams and Askenazi's book, "Building Better Products with Finite Element Analysis", but unfortunately it came across as overly-simplified and lacking in specifics (too much fluff, and not enough meat).In contrast, Cook zeros in on the core material without wasting words. Problem is, the material comes across in a cursory manner without the development it deserves. The author frequently broaches complex topics, and then gives insufficient discussion to clarify them. I'm sure he understands them, but the rest of us need a little more explanation, in layman's

terms, with examples.In summary, the book needs more... more real world problems; more examples on how to avoid pitfalls in applying boundary conditions; more useful discussion on contact analysis; more quantitative information on how fine to make a mesh. Sure, we all know that hex elements are better than tets, but how much better? Roughly how many hex elements per 90 degrees of arc are required to get sufficient accuracy for hex-8s, tet-4s, and tet-10s?

The Finite Element Method: Linear Static and Dynamic Finite Element Analysis (Dover Civil and Mechanical Engineering) Finite Element Modeling for Stress Analysis Fundamentals of Finite Element Analysis Schaum's Outline of Finite Element Analysis Stability of Structures by Finite Element Methods, Volume 40 (Studies in Applied Mechanics) Extended Finite Element Method: Theory and Applications (Wiley Series in Computational Mechanics) An Introduction to the Finite Element Method (McGraw-Hill Mechanical Engineering) Microsoft Excel 2013 Data Analysis and Business Modeling: Data Analysis and Business Modeling (Introducing) 3D Modeling For Beginners: Learn everything you need to know about 3D Modeling! Introduction to the Numerical Modeling of Groundwater and Geothermal Systems: Fundamentals of Mass, Energy and Solute Transport in Poroelastic Rocks (Multiphysics Modeling) Geochemical Modeling of Groundwater, Vadose and Geothermal Systems (Multiphysics Modeling) Mathematical Modeling of Collective Behavior in Socio-Economic and Life Sciences (Modeling and Simulation in Science, Engineering and Technology) Student Solutions Manual for Differential Equations: Computing and Modeling and Differential Equations and Boundary Value Problems: Computing and Modeling General Class License Mastery: 2015-2019 General Class FCC Element 3 Question Pool Effective July 1, 2015 The 5-Element Guide to Healing with Whole Foods FCC Commercial Radio License Exam ELEMENT 8 Study Aid PEMF - The Fifth Element of Health: Learn Why Pulsed Electromagnetic Field (PEMF) Therapy Supercharges Your Health Like Nothing Else! The Blood and its Third Element Trickle Down Mindset: The Missing Element In Your Personal Success The Element Encyclopedia of 5000 Spells: The Ultimate Reference Book for the Magical Arts