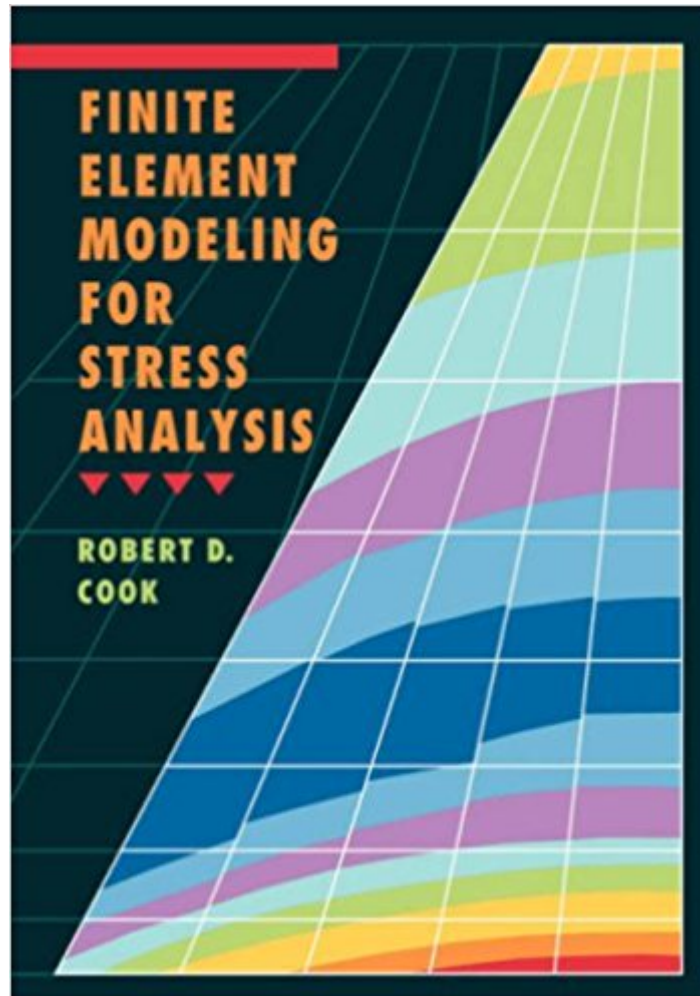




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Finite Element Modeling For Stress Analysis



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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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?

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