

Table des matières

The Finite Element Method in Engineering - S.S. Rao

1. Overview of the Finite Element Method
2. Discretization of the Domain
3. Interpolation Models
4. Higher Order and Isoparametric Elements
5. Derivation of Element Matrices and Vectors
6. Assembly of Element Matrices and Vectors and Derivation of System Equations
7. Numerical Solution of Finite Element Equations
8. Basic Equations and Solution Procedure
9. Analysis of Trusses, Beams and Frames
10. Analysis of Plates
11. Analysis of Three-Dimensional Problems
12. Dynamic Analysis
13. Formulation and Solution Procedure (Thermal problems)
14. One-Dimensional Heat Transfer Problems
15. Two-Dimensional Heat Transfer Problems
16. Three-Dimensional Heat Transfer Problems
17. Basic Equations of Fluid Mechanics
18. Inviscid and Incompressible Flows
19. Viscous and Non-Newtonian Flows
20. Solution of Quasi-Harmonic Equations
21. Introduction to FEM Software: ANSYS
22. Introduction to FEM Software: ABAQUS
23. MATLAB Implementation Examples

Appendix A. FEM vs Other Numerical Methods

Appendix B. Green-Gauss Theorem