

Mase, George E.; Mase, G. Thomas

Continuum mechanics for engineers. 2nd ed. (English) Zbl 0991.74500

Boca Raton, FL: CRC Press. 400 p. (1999).

Publisher's description: Continues to provide a clear, concise introduction to the fundamentals and applications of continuum mechanics; - Incorporates greater focus on applications; - Includes expanded coverage of constitutive equation development, and of linear and nonlinear elasticity; - Offers new treatments of elasticity stress potential solutions, torsion, and linear viscoelasticity.

The second edition of this popular text continues to provide a solid, fundamental introduction to the mathematics, laws, and applications of continuum mechanics. With the addition of three new chapters and eight new sections to existing chapters, the authors now provide even better coverage of continuum mechanics basics and focus even more attention on its applications. Beginning with the basic mathematical tools needed – including matrix methods and the algebra and calculus of Cartesian tensors – the authors develop the principles of stress, strain, and motion and derive the fundamental physical laws relating to continuity, energy, and momentum. With this basis established, they move to the expanded treatment of applications, including linear and nonlinear elasticity, fluids, and linear viscoelasticity. Mastering the contents of Continuum Mechanics: Second edition provides the reader with the foundation necessary to be a skilled user of today's advanced design tools, such as sophisticated simulation programs that use nonlinear kinematics and a variety of constitutive relationships. With its ample illustrations and exercises, it offers the ideal self-study vehicle for practicing engineers and an excellent introductory text for advanced engineering students.

MSC:

74-01 Introductory exposition (textbooks, tutorial papers, etc.) pertaining to mechanics of deformable solids Cited in **27** Documents