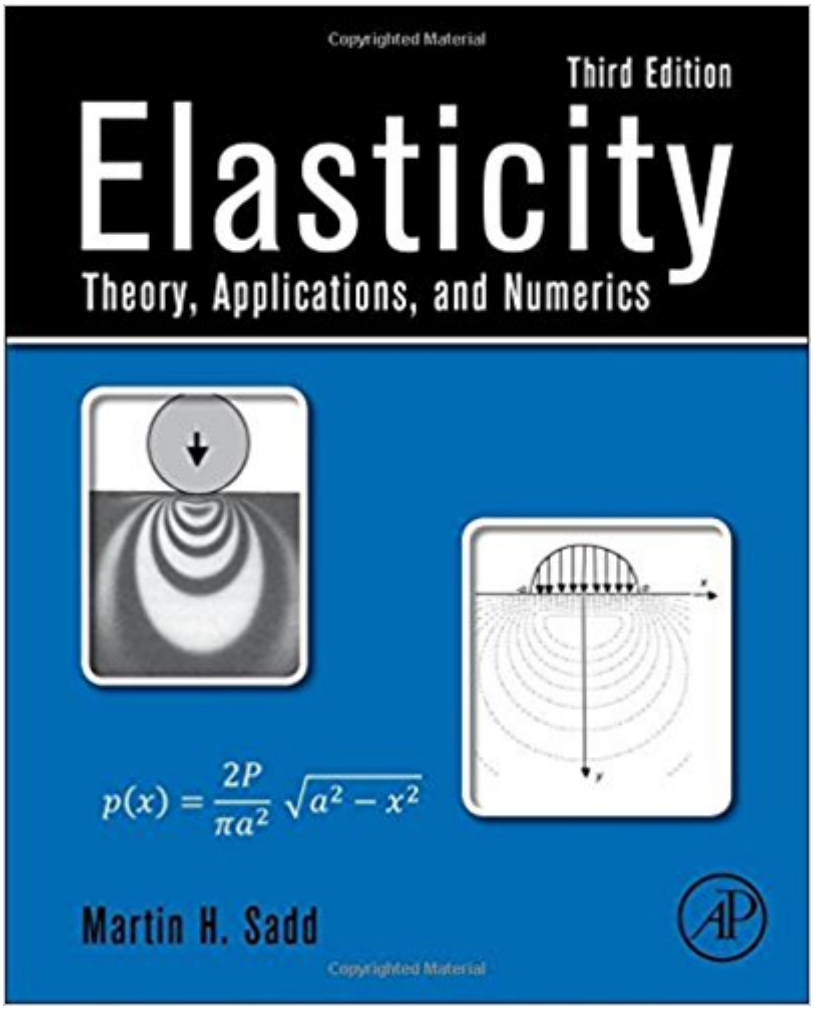
Elasticity, Third Edition: Theory, Applications, And Numerics



Synopsis

Elasticity: Theory, Applications, and Numerics, Third Edition, continues its market-leading tradition of concisely presenting and developing the linear theory of elasticity, moving from solution methodologies, formulations, and strategies into applications of contemporary interest, such as fracture mechanics, anisotropic and composite materials, micromechanics, nonhomogeneous graded materials, and computational methods. Developed for a one- or two-semester graduate elasticity course, this new edition has been revised with new worked examples and exercises, and new or expanded coverage of areas such as spherical anisotropy, stress contours, isochromatics, isoclinics, and stress trajectories. Using MATLAB software, numerical activities in the text are integrated with analytical problem solutions. These numerics aid in particular calculations, graphically present stress and displacement solutions to problems of interest, and conduct simple finite element calculations, enabling comparisons with previously studied analytical solutions. Online ancillary support materials for instructors include a solutions manual, image bank, and a set of PowerPoint lecture slides.Thorough yet concise introduction to linear elasticity theory and applicationsOnly text providing detailed solutions to problems of nonhomogeneous/graded materialsNew material on stress contours/lines, contact stresses, curvilinear anisotropy applicationsFurther and new integration of MATLAB softwareAddition of many new exercisesComparison of elasticity solutions with elementary theory, experimental data, and numerical simulationsOnline solutions manual and downloadable MATLAB code

Book Information

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Customer Reviews

Martin H. Sadd is Emeritus Professor of Mechanical Engineering and Applied Mechanics at the University of Rhode Island. He received his Ph.D. in mechanics from the Illinois Institute of Technology and began his academic career at Mississippi State University. In 1979 he joined the faculty at Rhode Island and served as department chair from 1991 to 2000. Professor Saddâ ™s teaching background is in the area of solid mechanics with emphasis in elasticity, continuum mechanics, wave propagation, and computational methods. He has taught elasticity at two academic institutions, in several industries, and at a government laboratory. Professor Saddâ ™s research has been in the area of computational modeling of materials under static and dynamic loading conditions using finite, boundary, and discrete element methods. Much of his work has involved micromechanical modeling of geomaterials including granular soil, rock, and concretes. He has authored more than 70 publications and has given numerous presentations at national and international meetings.

Took a graduate course in elasticity. Although this book was not prescribed as text, but after scrambling over half a dozen of hieroglyphic texts I stumbled upon this one. It is by no means the perfect text, but in my opinion, if you read through, its probably the easiest reads among the current graduate texts available in elasticity. Examples are well designed and helps grasp abstract theories better. I wish there were more rigorous examples worked out.

Book discusses materials science problems relating to the elasticity of the material. The book is acceptable but could use more detail about solving the problems.

Good

Engineering) Modern Classical Physics: Optics, Fluids, Plasmas, Elasticity, Relativity, and Statistical Physics Advanced Strength and Applied Elasticity Tensors in mechanics and elasticity (Engineering physics; an international series of monographs) Cryptography: Theory and Practice, Third Edition (Discrete Mathematics and Its Applications) Handbook of Attachment, Third Edition: Theory, Research, and Clinical Applications Price Theory and Applications (with Economic Applications, InfoTrac 2-Semester Printed Access Card) Price Theory and Applications (with Economic Applications) Introduction to Non-Abelian Class Field Theory, An: Automorphic Forms of Weight 1 and 2-Dimensional Galois Representations (Series on Number Theory and Its Applications) Music Theory: From Beginner to Expert - The Ultimate Step-By-Step Guide to Understanding and Learning Music Theory Effortlessly (Music Theory Mastery Book 1) Recursion Theory, Godel's Theorems, Set Theory, Model Theory (Mathematical Logic: A Course With Exercises, Part II) By T. L. Anderson - Fracture Mechanics: Fundamentals and Applications, Third Edition (3rd Edition) (5/25/05) Crazy Horse, Third Edition: The Strange Man of the Oglalas, Third Edition