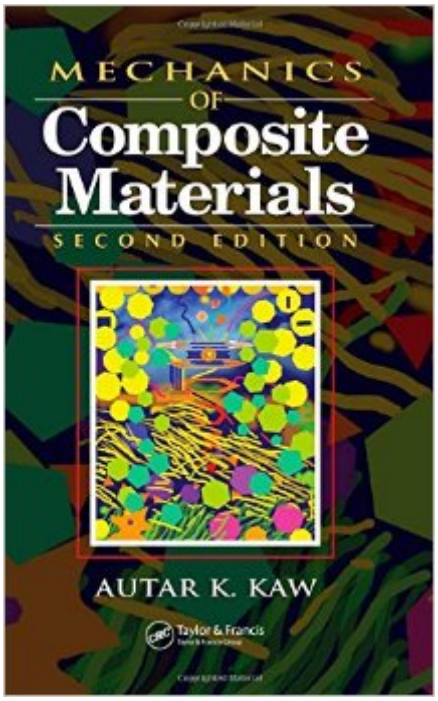
Mechanics Of Composite Materials, Second Edition (Mechanical And Aerospace Engineering Series)



Synopsis

In 1997, Dr. Kaw introduced the first edition of Mechanics of Composite Materials, receiving high praise for its comprehensive scope and detailed examples. He also introduced the groundbreaking PROMAL software, a valuable tool for designing and analyzing structures made of composite materials. Updated and expanded to reflect recent advances in the field, this Second Edition retains all of the features -- logical, streamlined organization; thorough coverage; and self-contained treatment -- that made the first edition a bestseller.The book begins with a question-and-answer style introduction to composite materials, includingÂ fresh material on new applications. The remainder of the book discusses macromechanical analysis of both individual lamina and laminate materials; micromechanical analysis of lamina including elasticity based models; failure, analysis, and design of laminates; and symmetrical and nonsymmetrical beams (new chapter). New examples and derivationsÂ are includedÂ inÂ the chapters on micromechanical and macromechanical analysis of lamina, and the design chapterÂ contains two new examples: design of a pressure vessel and design of a drive shaft. The author also adds key terms and a summary to each chapter. The most current PROMAL software is availableÂ via the author's often-updated Web site, along with new multiple-choice questions.With superior tools and complete coverage, Mechanics of Composite Materials, Second Edition makes it easier than ever to integrate composite materials into your designs with confidence. For instructions on downloading the associated PROMAL software, please visit http://www.autarkaw.com/books/composite/promaldownload.html.

Book Information

Series: Mechanical and Aerospace Engineering Series
Hardcover: 490 pages
Publisher: CRC Press; 2 edition (November 2, 2005)
Language: English
ISBN-10: 0849313430
ISBN-13: 978-0849313431
Product Dimensions: 6.2 x 1.1 x 9.6 inches
Shipping Weight: 1.6 pounds (View shipping rates and policies)
Average Customer Review: 3.8 out of 5 starsÂ Â See all reviewsÂ (11 customer reviews)
Best Sellers Rank: #1,052,977 in Books (See Top 100 in Books) #242 inÂ Books > Engineering & Transportation > Engineering > Materials & Material Science > Polymers & Textiles #640 inÂ Books > Science & Math > Physics > Mechanics #901 inÂ Books > Textbooks > Science &

Customer Reviews

As a practicing engineer, I was refreshed to find such a well-organized, no-fluff reference on laminated composites. The examples are presented in a concise, piecemeal fashion; they are worked start-to-finish, right down to the algebra in many cases. No insulting assumptions about your level of competence are to be found.The section on design and analysis provides an excellent arrangement of fully-worked engineering problems ranging from filament-wound driveshafts and pressure vessels (to demonstrate mixed-loadcase scenarios) to weight and cost optimization strategies for those interested in comparing composites to isotropic materials like steel and aluminum.While the book provides an excellent overview of classical laminated plate theory, the one thing I found to be in want of was a proper section on the analysis of plates and shells. For that, the mathematically inclined reader is directed to J.N. Reddy's authoritative treatise on composites titled Mechanics of Laminated Composite Plates and Shells.That is not to say that Mr. Kaw's title is in any way inferior to Reddy's work. It's rather like comparing apples to oranges; as such, to pit the two works against one another is inappropriate. On the one hand, Kaw provides a very digestable (and long overdue) introduction to composite materials, going into great detail about the terminology, sign conventions, coordinate systems, and mechanical behavior of composites without becoming long-winded or mathematically convoluted. Reddy picks up where Kaw leaves off, introducing variational methods like the Rayleigh-Ritz method, as well as energy principles from the likes of Galerkin.

Engineering) Fundamentals of Mechanical Vibrations: IBM PC 3.5 Version (Mcgraw Hill Series in Mechanical Engineering) Reinforced Concrete: Mechanics and Design (4th Edition) (Civil Engineering and Engineering Mechanics) Introduction to Composite Materials Design, Second Edition Aircraft Structures for Engineering Students, Fifth Edition (Elsevier Aerospace Engineering) Aircraft Structures for Engineering Students, Fourth Edition (Elsevier Aerospace Engineering) Aircraft Structures for Engineering Students (Elsevier Aerospace Engineering) Fundamentals of Earthquake Engineering (Civil engineering and engineering mechanics series) The Mechanics of Adhesives in Composite and Metal Joints Ceramics: Mechanical Properties, Failure Behaviour, Materials Selection (Springer Series in Materials Science)