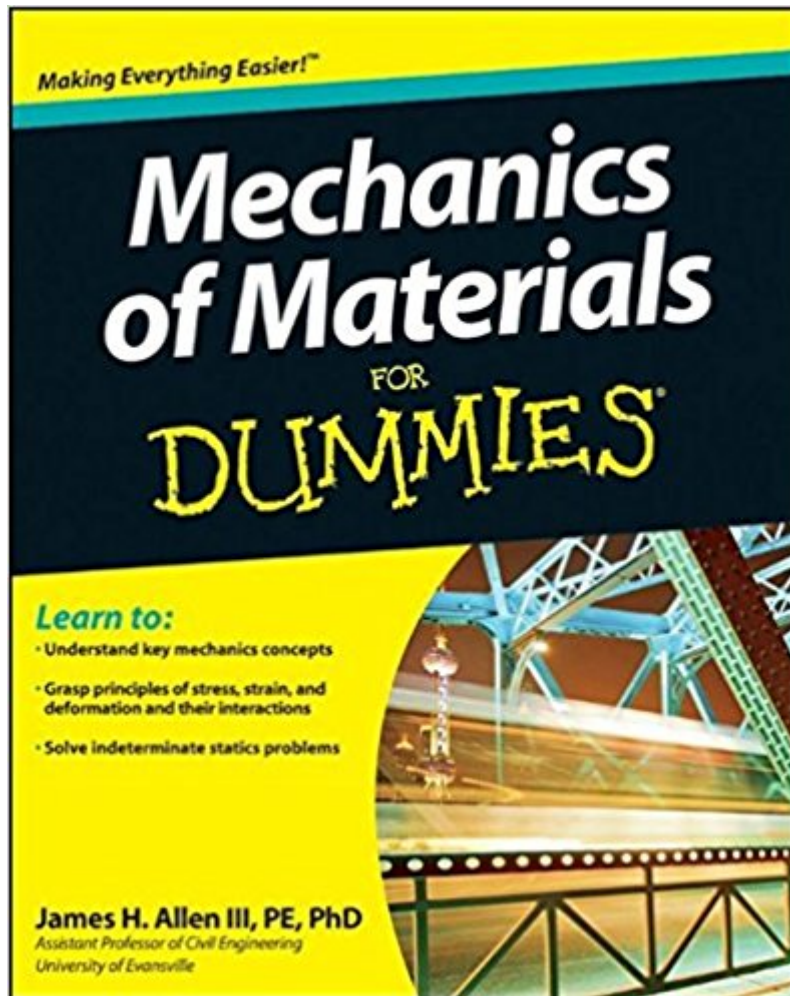




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# Mechanics Of Materials For Dummies



## Synopsis

Your ticket to excelling in mechanics of materials With roots in physics and mathematics, engineering mechanics is the basis of all the mechanical sciences: civil engineering, materials science and engineering, mechanical engineering, and aeronautical and aerospace engineering. Tracking a typical undergraduate course, *Mechanics of Materials For Dummies* gives you a thorough introduction to this foundational subject. You'll get clear, plain-English explanations of all the topics covered, including principles of equilibrium, geometric compatibility, and material behavior; stress and its relation to force and movement; strain and its relation to displacement; elasticity and plasticity; fatigue and fracture; failure modes; application to simple engineering structures, and more. Tracks to a course that is a prerequisite for most engineering majors Covers key mechanics concepts, summaries of useful equations, and helpful tips From geometric principles to solving complex equations, *Mechanics of Materials For Dummies* is an invaluable resource for engineering students!

## Book Information

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## Customer Reviews

Your ticket to excelling in mechanics of materials *Mechanics of Materials For Dummies* gives you plain-English explanations of all the topics you'll encounter in a typical undergraduate course, including principles of equilibrium, geometric compatibility, and material behavior; stress and its relation to force and movement; strain and its relation to displacement; and methods for calculating deformations and indeterminate systems. Brush up on basics – get a quick refresher on

math and units, a brief review of essential statics topics, and an easy-to-follow introduction to mechanics of materials

- Sharpen your skills
  - find out which skills you need to master, including section property calculations, internal force diagrams, and how to locate the centroid of an area
  - Stop stressing
    - get the 411 on the basic types of stress, grasp the difference between average stress and stress at a point, and learn to transform stresses to find principal values and angles
  - Strain for more
    - discover how objects deform in response to strain, how you compute maximum and minimum strain values, and how to determine strain orientation within an object
  - Compute displacements
    - explore different ways to compute deformations of objects under loads for both statically determinate and indeterminate systems

Open the book and find:

- How to use mechanics to understand material behavior
- Methods for calculating stresses and strains
- Basic torsion theory
- How to calculate deformations, displacements, and angles of twist
- How to solve indeterminate systems and composite materials problems
- Mohr's circle for transformations
- Hooke's law for stress and strain

Learn to:

- Understand key mechanics concepts
- Grasp principles of stress, strain, and deformation and their interactions
- Solve indeterminate statics problems

James H. Allen III, PE, PhD is an assistant professor of civil engineering and a registered professional engineer. His specialty areas include structural engineering, numerical analysis and error control, and steel design. He is also the author of Statics For Dummies.

One word.. Helpful.!! Even though you feel overwhelmed by having to read this book and then your textbook, it's worth it if you want to understand what you're reading. The material in the this book is broken down in a more simplistic, straight forward manner that it complements your textbook. I am not big on reading and was very skeptical and unmotivated to have to read an additional book to understand the material. But to be honest, it was worth the money and additional time spent reading it.

I really love to just teach myself things outside of class because some professors just cannot teach no matter how smart they are. By actually reading through the book, doing examples, and then doing the problems in my own book assigned by the professor, I was able to do extremely well on homeworks and tests. I also understand it all, which to me is much more important. Now I plan on getting a For Dummies book whenever I can just because it teaches so well at the basic and even deeper level.

Very helpful book. Much better job explaining fundamentals than textbook.

Like all the dummy books, it gives basic information that has sometimes been a clincher to getting the question. However sometimes the info is too basic or vague for my university student needs.

Bought this book as required reading for a college class. It was one- third the cost of the school bookstore price. The text is easy reading for such a technical class, so a simple person like myself can keep up with the class. Thanks again .com.

Pretty good.

very good book

Great reference for my mechanics of materials class.

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