Timothy A. Philpot, Jeffery S. Thomas

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DESCRIPTION

Now in its 4th Edition, Timothy A. Philpot's *Mechanics of Materials: An Integrated Learning System* continues to help engineering students visualize key mechanics of materials concepts better than any other text available, following a sound problem solving methodology while thoroughly covering all the basics. The fourth edition retains seamless integration with the author's award-winning MecMovies software. Content has been thoroughly revised throughout the text to provide students with the latest information in the field.

ABOUT THE AUTHOR

Timothy A. Philpot is an Associate Professor in the Department of Civil, Architectural, and Environmental Engineering at the Missouri University of Science and Technology (formerly known as the University of Missouri-Rolla). He received his B.S. degree from the University of Kentucky in 1979, his M.Engr. degree from Cornell University in 1980, and his Ph.D. degree from Purdue
University in 1992. In the 1980s, he worked as a structural engineer in the offshore construction industry in New Orleans, London, Houston, and Singapore. He joined the faculty at Murray State University in 1986, and since 1999, he has been on the faculty at Missouri S & T.

Dr. Philpot’s primary areas of teaching and research are in engineering mechanics and the development of interactive, multimedia educational software for the introductory engineering mechanics courses. He is the developer of *MDSolids* and *MecMovies*, two award-winning instructional software packages. *MDSolids-Educational Software for Mechanics of Materials* won a 1998 Premier Award for Excellence in Engineering Education Courseware by NEEDS, the National Engineering Education Delivery System. *MecMovies* was a winner of the 2004 NEEDS Premier Award competition as well as a winner of the 2006 MERLOT Classics and MERLOT Editors’ Choice Awards for Exemplary Online Learning Resources. Dr. Philpot is also a certified *Project Lead the Way* affiliate professor for the Principles of Engineering course, which features *MDSolids* in the curriculum.

He is a licensed professional engineer and a member of the American Society of Civil Engineers and the American Society for Engineering Education. He has been active in leadership of the ASEE Mechanics Division.

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### NEW TO EDITION

Several new topics have been added to the fourth edition

- o8.10 Bending of Curved Bars
- o13.9 Generalized Hooke’s Law for Orthotropic Materials
- o14.5 Stresses in Thick-Walled Cylinders
- o14.6 Deformations in Thick-Walled Cylinders
- o14.7 Interference Fits
• Updated chapter content and new examples: Especially in Chapters 8, 9, 13 and 14.

• Extensive changes to the textbook problems. More than 430 new problems have been developed. In 10 of the 17 chapters, more than 60% of the textbook problems are new for this edition.

Resources

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• Auto-gradable Guided Online (GO) Tutorials and Multistep Problems, which enable students to learn problem-solving strategies step-by-step and pinpoint exactly where they are making mistakes.

• NEW Practice Problem PPTs that work through practice problems for use in lecture by instructors, or can be provided to students for review.

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**FEATURES**

• **Focuses On Visual Learning:** The illustrations use color, shading, perspective, and dimension to clearly convey concepts while striving to place these concepts in the context of real world components and objects. These illustrations have been prepared by an engineer and educator (the author), to train future engineers.

• **Problem-solving schema:** The book and web-based features are designed to assist students in organizing and categorizing concepts and problem-solving procedures.

• **Style and clarity of examples:** This textbook places great emphasis on the presentation and quality of example problems. The author’s commentary explains why various steps are taken and describes the rationale for each step in a solution process while the accompanying illustrations help build the mental imagery needed to transfer the concepts to differing situations.

• **Homework philosophy:** This textbook includes over 1,300 homework problems in a range of difficulty.

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