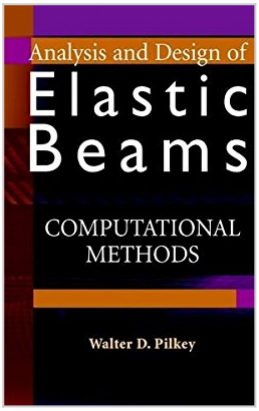

Analysis and Design of Elastic Beams: Computational Methods

By Walter D. Pilkey

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State-of-the-art coverage of modern computational methods for the analysis and design of beams
Analysis and Design of Elastic Beams presents computer models and applications related to thin-walled beams such as those used in mechanical and aerospace designs, where thin, lightweight structures with high strength are needed. This book will enable readers to compute the cross-sectional properties of individual beams with arbitrary cross-sectional shapes, to apply a general-purpose computer analysis of a complete structure to determine the forces and moments in the individual members, and to use a unified approach for calculating the normal and shear stresses, as well as deflections, for those members' cross sections.
In addition, this book augments a solid foundation in the basic structural design theory of beams by:
* Providing coverage of thin-wall structure analysis and optimization techniques
* Applying computer numerical methods to classical design methods
* Developing computational solutions for cross-sectional properties and stresses using finite element analyses
Including access to an associated Web site with software for the analysis and design of any cross-sectional shape, Analysis and Design of Elastic Beams: Computational Methods is an essential reference for mechanical, aerospace, and civil engineers and designers working in the automotive, ship, and aerospace industries in product and process design, machine design, structural design, and design optimization, as well as students and researchers in these areas.

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Editorial Review

From the Back Cover
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About the Author
WALTER D. PILKEY is the Morse Professor of Engineering at the University of Virginia. He is the author or coauthor of numerous articles and books, including Formulas for Stress, Strain, and Structural Matrices and Peterson's Stress Concentration Factors, Second Edition, both published by Wiley.

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