



Materials, Third Edition: engineering, science, processing and design; North American Edition

By Michael F. Ashby, Hugh Shercliff, David Cebon

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Materials, Third Edition: engineering, science, processing and design; North American Edition By Michael F. Ashby, Hugh Shercliff, David Cebon

Materials, Third Edition, is the essential materials engineering text and resource for students developing skills and understanding of materials properties and selection for engineering applications. This new edition retains its design-led focus and strong emphasis on visual communication while expanding its inclusion of the underlying science of materials to fully meet the needs of instructors teaching an introductory course in materials.

A design-led approach motivates and engages students in the study of materials science and engineering through real-life case studies and illustrative applications. Highly visual full color graphics facilitate understanding of materials concepts and properties. For instructors, a solutions manual, lecture slides, online image bank, and materials selection charts for use in class handouts or lecture presentations are available at <http://textbooks.elsevier.com>. The number of worked examples has been increased by 50% while the number of standard end-of-chapter exercises in the text has been doubled. Coverage of materials and the environment has been updated with a new section on Sustainability and Sustainable Technology.

The text meets the curriculum needs of a wide variety of courses in the materials and design field, including introduction to materials science and engineering, engineering materials, materials selection and processing, and materials in design.

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- Chapters on materials selection and design are integrated with chapters on materials fundamentals, enabling students to see how specific fundamentals can be important to the design process

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- Links with the Cambridge Engineering Selector (CES EduPack), the powerful materials selection software. See www.grantadesign.com for information

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Editorial Review

From the Back Cover

This is the essential materials engineering text and resource for students developing skills and understanding of materials properties and selection for engineering applications. Taking a unique design-led approach that is broader in scope than other texts, Materials 2e meets the curriculum needs of a wide variety of courses in the materials and design field, including introduction to materials science and engineering, engineering materials, materials selection and processing, and materials in design. This new edition retains its design-led focus and strong emphasis on visual communication while expanding its treatment of crystallography and phase diagrams by use of "Guided Learning" sections to fully meet the needs of instructors teaching an introductory course in materials. **KEY FEATURES:**

- * Design-led approach motivates and engages students in the study of materials science and engineering through real-life case studies and illustrative applications
- * Highly visual full color graphics facilitate understanding of materials concepts and properties
- * Chapters on materials selection and design are integrated with chapters on materials fundamentals, enabling students to see how specific fundamentals can be important to the design process
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NEW TO THIS EDITION:

- "Guided Learning" sections on crystallography, phase diagrams and phase transformations enhance students learning of these key foundation topics
- Revised and expanded chapters on durability, and processing for materials properties
- More than 50 new worked examples placed throughout the text
- Available online testing and assessment component helps students assess their knowledge of the topics
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About the Author

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Mike Ashby is sole or lead author of several of Elsevier's top selling engineering textbooks, including Materials and Design: The Art and Science of Material Selection in Product Design, Materials Selection in Mechanical Design, Materials and the Environment, and Materials: Engineering, Science, Processing and Design. He is also coauthor of the books Engineering Materials 1&2, and Nanomaterials, Nanotechnologies and Design.

University Senior Lecturer, Engineering Department, Cambridge University, UK

Professor of Mechanical Engineering, Cambridge University, UK

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