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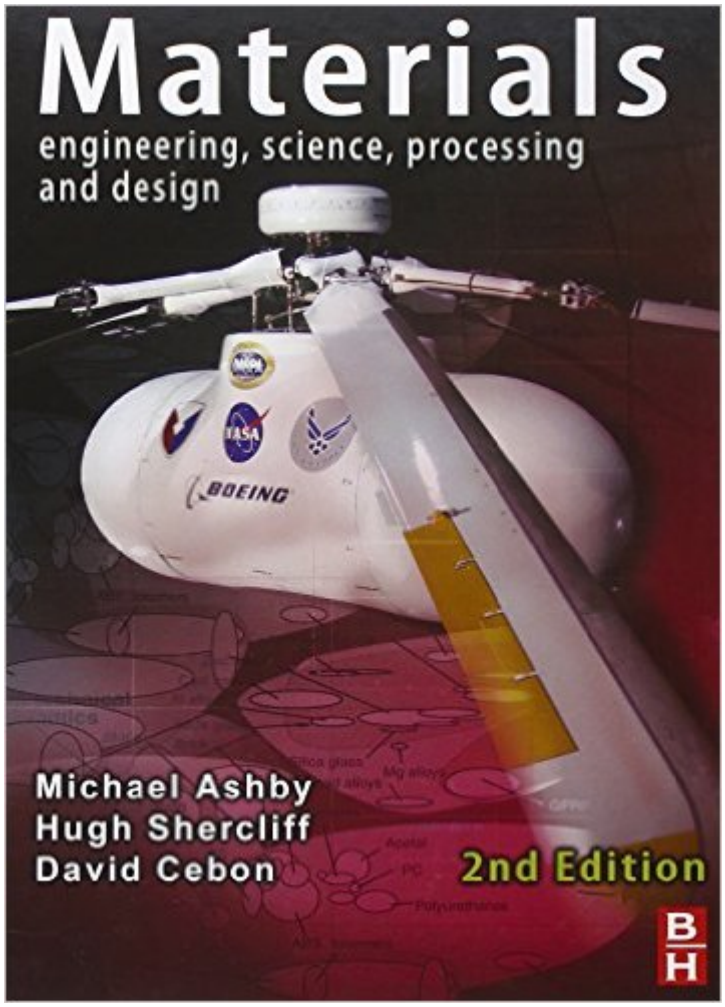

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Synopsis

Materials: Engineering, Science, Processing and Design, Second Edition, was developed to guide material selection and understanding for a wide spectrum of engineering courses. The approach is systematic, leading from design requirements to a prescription for optimized material choice. This book presents the properties of materials, their origins, and the way they enter engineering design. The book begins by introducing some of the design-limiting properties: physical properties, mechanical properties, and functional properties. It then turns to the materials themselves, covering the families, the classes, and the members. It identifies six broad families of materials for design: metals, ceramics, glasses, polymers, elastomers, and hybrids that combine the properties of two or more of the others. The book presents a design-led strategy for selecting materials and processes. It explains material properties such as yield and plasticity, and presents elastic solutions for common modes of loading. The remaining chapters cover topics such as the causes and prevention of material failure; cyclic loading; fail-safe design; and the processing of materials.* 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 * 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 * Links with the Cambridge Engineering Selector (CES EduPack), the powerful materials selection software. See www.grantadesign.com for information NEW TO THIS EDITION: "Guided Learning" sections on crystallography, phase diagrams and phase transformations enhance studentsâ ™ 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 â “ Email textbooks@elsevier.com for details Link to interactive online materials science tutorials updated with new self test questions --This text refers to an out of print or unavailable edition of this title.

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Customer Reviews

Dry, awkward formatting, curious layout, many poorly explained diagrams with very small print on them, and habitually presents equations without clearly explaining what all the terms in the equations mean or what the equation is called. A textbook should be at least sort of useful without having a professor physically at your elbow to explain what is meant by everything in it. Don’t even think about skipping class, no matter how sick you are, if this is what you’ll have to try to catch up with.

Cons:Engineers expect a text to distill material into concise forms. This textbook, full of rudimentary figures and unclear equations, couldn’t be more indirect. The added lack of applied examples and end of chapter problems make this text useless.Pros:The book trumpets the CES software, and the software is good.Conclusion:The book is not a vehicle of learning, but is instead likely a vehicle for selling the CES software. Superficially, it seems like Granta Incorporated, maker of CES, teamed up with esteemed author Ashby to publish a worthless tome advancing its product! If your teacher doesn’t teach this material well, and all you have is this text, run away.

Had to return this book as my prof. suddenly changed to the 3rd edition, but being that the two editions are the 90% the same, I would recommend going in another direction. Any typos or mistakes in this book are probably not corrected in the 3rd edition.

It deals with major two steps of the design-material and process.The author introduces a chart which is very helpful in knowing the property of the material.Step by step approach is appreciable.It deals with the case studies in each chapter.But the topics are vague when he deals with many formulae without any proof.We do not know where it came from.Overall the book is good for design

people.

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