Physical Metallurgy Principles (Prindle, Weber & Schmidt Series In Advanced Mathematics)

Synopsis

Physical Metallurgy Principles is intended for use in an introductory course in physical metallurgy and is designed for all engineering students at the junior or senior level. The approach is largely theoretical, but covers all aspects of physical metallurgy and behavior of metals and alloys. The treatment used in this textbook is in harmony with a more fundamental approach to engineering education.

Book Information

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Customer Reviews

I love materials science and as a bibliophile I anticipated the release this new edition for months. Surely for that price and the 15 year interim since the last edition, I expected a grand volume updated with multicolored illustrations, supplementary sidebars, interactive CD, example problems - sometime suitable for bedtime reading at my wife’s side. But alas.Well, at least the 4th Ed. has a nicer cover, and some of the typos were corrected. The content is still excellent even though the authors had the audacity to omit two chapters on fracture mechanics "to increase the focus of the text" - okay.My advise: Buy the 3rd edition instead. You’ll be getting more for less.

The original book (1st and 2nd edition) was written solely by Professor Robert Reed-Hill, where many important philosophy, structure, esp. figures have already been well established. As to the 3rd edition, it is improved, including fracture mechanics, solidification, TEM and SEM material

characterization, grain boundaries and dislocations etc, so it is still good one. The 3rd edition is written by Professor Robert Reed-Hill (1st author) and the Reza Abbaschian (2nd author), and is also a good book.However, as to the 4th edition, it is disappointing since it is almost identical to 3rd edition- major change is the removal of 2 chapters and technically it cannot be even regarded as a new edition.By then, the original author, Professor Reed-Hill has passed away (~2001). However, the 2nd author of 3rd edition, Reza Abbaschian was listed as 1st author. Despite to very little change of 4th edition, there is a 3rd author Lara Abbaschian coming in, and ranked as 2nd author. Thus, the original author Professor Reed-Hill is moved to the place of 3rd author. The 2nd author Ms. Abbaschian, based on the frontpage of the book, is from an affiliation of business, other than academic institution.All in all, due to these series of disappointing issues, and the extremely high price as a college book, I would NOT recommend this book any longer. The 3rd edition, instead, is a classic.

This is in reference to the hard-cover 3rd edition.The book is good for reference, with just enough detail to be useful in every topic of materials science. You don’t normally find atomic structure, microscopy, dislocation theory and fracture mechanics in one volume. It even has basic thermodynamics and diffusion. BUT because it attempts to be comprehensive, it doesn’t have enough room to go into depth in all the topics.I think this book should be titled "Introduction to Materials Science, before the nano-polymer revolution." I think it would be a better title.I think this is how the book was written:1. Take a intro to materials book2. take out electro-opti-magnetic properties3. add fracture mechanics.4. make it thicker.If you want to learn the subject, I think there are better books that are easier to read. But if you want to pull it off your shelf to read bits and pieces, this is pretty good.

This book is honestly one of the worst books that I have encountered in my academic career. It offers very little explanation on actual concepts, calculations, and relevancy of topics. In addition, the provided pictures are confusing, and the suggested homework problems refer to concepts and terms that are not explained in the text. I have had to continually refer to other textbooks to understand the material and complete homework problems. While this book may be useful for researchers, I would not recommend this book to anyone that is starting to learn Physical Metallurgy.

The author leaves much to be desired in this book. Often times you read a chapter and without even

being prompted by questions, you are able to formulate very significant and elementary questions that were never addressed in the chapter. That is unacceptable. Some information is hinted at in illustrations but never confirmed in text, thus leading the reader to ponder if the illustration is over-reaching.The worst part is the problems. Problem solving is how you learn science. This author CLEARLY generated the post-chapter questions as an afterthought with very little effort. MANY of the questions in this book can be answered either by commonsense, or by using the information given in the problem (for example here is x, here is y, what is f=x*y^2.)This book was used in my graduate intro to materials science course. It was a joke. I'm a book learner and feel pretty competent in gauging the quality of a test. This is garbage. There HAS to be better books than this.Comparing this to David Griffiths Intro to electrodynamics (undergrad) and Robert T DeHoff's Thermodynamics in Materials Science (graduate) .....I don't even know how to finish this sentence, as there exists no analogy for such an immeasurable separation of quality.

From the 1960s to the 1980s the possibilty of teaching metallurgy within the context of the general physical and chemical principles of materials science really existed.Unfortunately, the calibre of metallurgy teachers was not high-minded enough to meet this challenge. (Having tenure did not help make them want to change either, perhaps.)Today, the new materials (engineering ceramics, optical materials, magnetic materials, superconductors, etc) are in the ascendant and the metallurgy staff are comfortably outnumbered in all materials science departments by ceramicists, polymer scientists, nanotechnologists, biomaterials scientists, etc.Demand for a career in metallurgy is very low now.So while a unified approach to presenting physical metallurgy is desirable from the point of view of materials science students (who have to learn the basics even if they do not want to focus on metals), the possibility of getting a book published is even lower today than ever before : unless we discover revolutionary new alloys/processing routes, the market for such a book is simply too limited.The latter fact is reflected in the price of this book.I got my old 3rd edition in the early 1990s for around Ã Â£50.Even allowing for inflation, surely the cheaper book production of today's world can allow for a price of $100 or so ?I think the authors may be being too greedy here . . . .

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