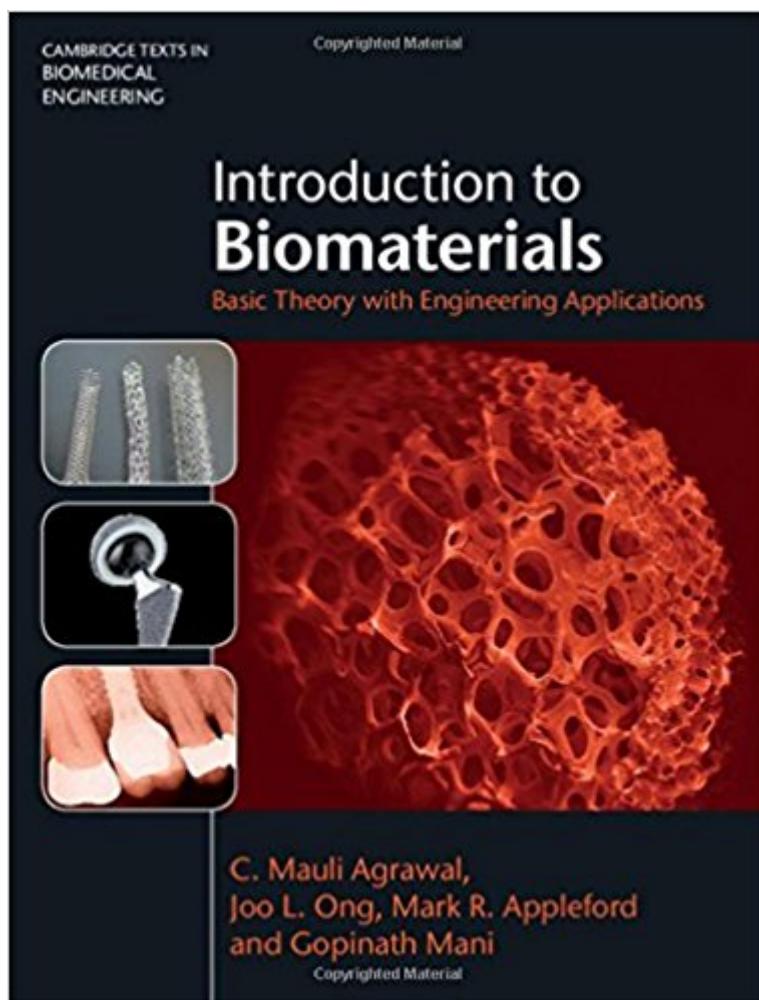


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# Introduction To Biomaterials: Basic Theory With Engineering Applications (Cambridge Texts In Biomedical Engineering)



## **Synopsis**

This succinct textbook gives students the perfect introduction to the world of biomaterials, linking the fundamental properties of metals, polymers, ceramics and natural biomaterials to the unique advantages and limitations surrounding their biomedical applications. Clinical concerns such as sterilization, surface modification, cell-biomaterial interactions, drug delivery systems and tissue engineering are discussed in detail, giving students practical insight into the real-world challenges associated with biomaterials engineering; key definitions, equations and concepts are concisely summarised alongside the text, allowing students to quickly and easily identify the most important information; and bringing together elements from across the book, the final chapter discusses modern commercial implants, challenging students to consider future industrial possibilities. Concise enough to be taught in a single semester, and requiring only a basic understanding of biology, this balanced and accessible textbook is the ideal introduction to biomaterials for students of engineering and materials science.

## **Book Information**

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## **Customer Reviews**

"This is a book that is destined to be a classic in biomaterials education. Written by leading bioengineers and scientists, it can serve not only as a textbook to support a semester-long undergraduate course, but also as an introduction to graduate-level classes. It is a well-written, comprehensive compendium of traditional and also modern knowledge on all aspects of

biomaterials, and I am sure that both students and instructors will embrace it and use it widely." Kyriacos A. Athanasiou, University of California, Davis "This well compiled book is readily accessible to a wide readership, as the authors do not assume background knowledge of any particular field of study. Moreover, Introduction to Biomaterials strikes a pleasing balance between life science and engineering, so that both scientific principles and engineering applications are presented with a view to blending theory and practice." Andrew Taylor-Robinson, The Biologist

This succinct textbook is the perfect introduction to biomaterials engineering, linking the fundamental properties of biomaterials to the unique advantages and limitations surrounding their clinical applications. Ideal for students of engineering and materials science, packed with pedagogical features, and concise enough to be taught in a single semester.

For being an international order, I did receive the book itself fairly quickly which I appreciate and it is very helpful for the material being learned in my Biomedical Engineering class. However, I was informed it was supposed to be brand new and there was a lot of wear and tear on the book itself (bending especially). Either way, I was happy with the book so thanks!

Being an instructor for an undergraduate introduction to biomaterials course, I have struggled with finding a book that caters to the undergraduate audience. The book I had been using in the past was over 1500 pages, read like a compilation of research papers and I consistently received feedback on how overwhelming the book felt to an undergraduate student. I was thrilled after reviewing the book by Mauli Agrawal who is one of the leading experts in the field of biomaterials. The book gives readers with little or no knowledge of biomaterials a perfect introduction to the subject. The book is well written combining relevant theory with related engineering applications. The chapters have representative questions at the end allowing students to evaluate their understanding of the concepts learned in that chapter. The chapters are well written and comprehensive enough without overwhelming the reader. An ideal textbook for an undergraduate course in biomaterials. Also like the availability of the Ebook feature which a lot students are preferring.

This book was an excellent complement to my Biocompatibility textbook and elaborated on topics not covered in my other Biomaterials courses. Modern and practical applications of materials for implants are well covered for the undergraduate student, and the text chapters are concise and

easy to read. Illustrations are designed to communicate concepts, not overwhelm with information. Pictures included in the text are up to date with current devices, and I especially enjoyed the book's emphasis on attention to detail when designing and implementing fabrication and manufacturing processes using specific examples of success and/or failure. Overall, this book is a great addition to the library of any aspiring Bioengineer!

Chapters are well laid out and it gives readers brief and bright view on different fields of this science. It includes usable and practical review on current characterization methods, drug delivery systems, tissue engineering, novel biomaterials, surface modification methods, cell-biomaterial interactions and also clinical applications. I highly recommend this book not only to the students interested in this field of study but also biomedical engineers who work on this field experimentally.

This textbook contain many important concepts valuable to undergraduate biomedical engineering students as well as researcher new to material engineering. It has diagrams and images that are easily comprehensible and the information are generally update with current research in the field. Very useful for students who seek to pursue a career in material science related to human biological systems.

Had very little biomaterial background before reading this book. This book was very easy to read, and explained the terms needed very concisely. Would highly recommend anyone to use this book who either needs a refresher or a broad overview of the different biomaterials currently used today, how they interact with the body, and how they can be improved.

Awesome book on biomaterials! It provides a depth of knowledge in all aspects within the field including material types, processing options, characterization and applications! As a student, the book was well written and easy to read/understand.

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