



Mechanics of biomaterials: Fundamental principles for implant design
 Lisa A. Pruitt and Ayyana M. Chakravartula

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field. Information about regulatory issues, the foreign body response, and biodegradable implants round out this comprehensive text. Furthermore, case studies are presented with guidance in the form of open-ended questions at the beginning and end of each chapter, in addition to a list of clearly defined learning outcomes.

Biomedical device design is an inherently interdisciplinary field, and it has been difficult to find a single textbook that covers all of the engineering principles needed to teach the diverse students who are attracted to courses on the topic. I've tried to reproduce the magic of Pruitt's didactic teaching style in my own courses for the last eight years, and I can say that I am truly pleased to have this new book on my shelf. My job just got a little easier!

Reviewer: Catherine Klapperich of the Department of Biomedical Engineering at Boston University.

Lisa Pruitt and Ayyana Chakravartula have written *Mechanics of Biomaterials: Fundamental Principles for Implant Design*, an excellent new textbook based on their experience teaching a class of the same name at the University of California–Berkeley, since 1998. This self-contained text is appropriate for advanced undergraduates and first-year graduate students interested in the design and testing of load-bearing biomedical implants. Clinicians and working engineers also will find the book useful as a comprehensive reference as it covers all of the major classes of biomedical implants—including orthopedic, dental,

and cardiovascular—with detailed case studies presented for each class in the third section.

The book starts with an introduction to materials selection in the context of implantable materials. The authors then take the reader through the basics of mechanics of materials, failure analysis, fracture, and fatigue—all using relevant biomedical examples. Particular attention is paid to the mechanics of polymers and soft materials, a topic that often is not covered in detail in the undergraduate biomedical engineering curricula. However, the topic is required reading for anyone interested in entering this

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