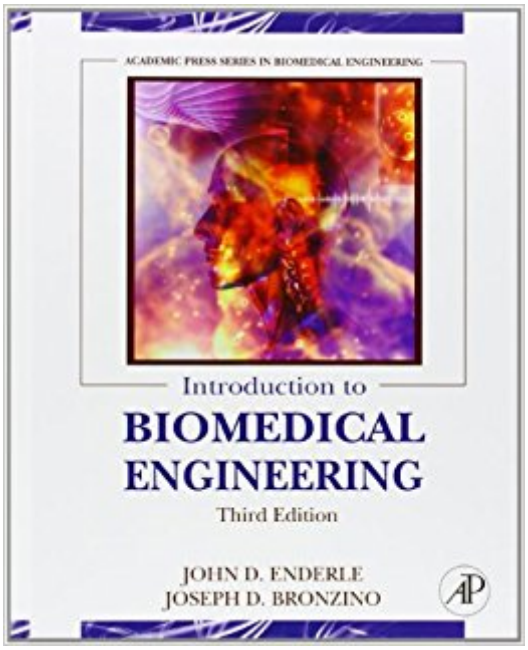
Introduction To Biomedical Engineering, Third Edition



Synopsis

Introduction to Biomedical Engineering is a comprehensive survey text for biomedical engineering courses. It is the most widely adopted text across the BME course spectrum, valued by instructors and students alike for its authority, clarity and encyclopedic coverage in a single volume. Biomedical engineers need to understand the wide range of topics that are covered in this text, including basic mathematical modeling; anatomy and physiology; electrical engineering, signal processing and instrumentation; biomechanics; biomaterials science and tissue engineering; and medical and engineering ethics. Enderle and Bronzino tackle these core topics at a level appropriate for senior undergraduate students and graduate students who are majoring in BME, or studying it as a combined course with a related engineering, biology or life science, or medical/pre-medical course. NEW: Each chapter in the 3rd Edition is revised and updated, with new chapters and materials on compartmental analysis, biochemical engineering, transport phenomena, physiological modeling and tissue engineering. Chapters on peripheral topics have been removed and made avaialblw online, including optics and computational cell biologyNEW: many new worked examples within chaptersNEW: more end of chapter exercises, homework problemsNEW: image files from the text available in PowerPoint format for adopting instructorsReaders benefit from the experience and expertise of two of the most internationally renowned BME educatorsInstructors benefit from a comprehensive teaching package including a fully worked solutions manual A complete introduction and survey of BMENEW: new chapters on compartmental analysis, biochemical engineering,Ã Â and biomedical transport phenomenaNEW: revised and updated chapters throughout the book feature current research and developments in, for example biomaterials, tissue engineering, biosensors, physiological modeling, and biosignal processingNEW: more worked examples and end of chapter exercisesNEW: image files from the text available in PowerPoint format for adopting instructorsAs with prior editions, this third edition provides a historical look at the major developments across biomedical domains and covers the fundamental principles underlying biomedical engineering analysis, modeling, and designBonus chapters on the web include: Rehabilitation Engineering and Assistive Technology, Genomics and Bioinformatics, and Computational Cell Biology and Complexity

Book Information

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Customer Reviews

Excerpt from the Third Edition of Introduction to Biomedical Engineering The purpose of the third edition remains the same as the first and second editions, that is, to serve as an introduction to and overview of the field of biomedical engineering. Many chapters have undergone major revision from the previous editions with new end-of-chapter problems added. Some chapters were eliminated completely, with several new chapters added to reflect changes in the field. Over the past fifty years, as the discipline of biomedical engineering has evolved, it has become clear that it is a diverse, seemingly all-encompassing field that includes such areas as bioelectric phenomena, bioinformatics, biomaterials, biomechanics, bioinstrumentation, biosensors, biosignal processing, biotechnology, computational biology and complexity, genomics, medical imaging, optics and lasers, radiation imaging, tissue engineering, and moral and ethical issues. Although it is not possible to cover all of the biomedical engineering domains in this textbook, we have made an effort to focus on most of the major fields of activity in which biomedical engineers are engaged. The text is written primarily for engineering students who have completed differential equations and a basic course in statics. Students in their sophomore year or junior year should be adequately prepared for this textbook. Students in the biological sciences, including those in the fields of medicine and nursing can also read and understand this material if they have the appropriate mathematical background. Read some sample pages on "Materials in Medicine: From Prosthetics to Regeneration" from Introduction to Biomedical Engineering. [PDF]

John Enderle is among the best known biomedical engineers in the world. He is Editor-in-Chief of the IEEE EMB Magazine (Engineering in Medicine and Biology Society, the key electrical

systems-oriented BME society). An electrical engineer by training, he is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), a past-president of the IEEE Engineering in Medicine and Biology Society, and a Fellow of the American Institute for Medical and Biological Engineering (AIMBE). He is also an ABET program evaluator for bioengineering programs and a member of the American Society for Engineering Education.Joseph Bronzino is one of the most renowned biomedical engineers in the world. He is a former president of the IEEE Engineering in Medicine and Biology, and well-known educator. He is editor-in-chief of the Biomedical Engineering Handbook from CRC Press, and is currently editor of the Academic Press Series in Biomedical Engineering. He is the Vernon Roosa Professor of Applied Science at Trinity College in Hartford, Connecticut.

This book reads more like a collection of technical papers than a coherent text. The writing is uneven from section to section, and it flows poorly. Some sections are poorly written, with terms introduced without definition. The section on computers is particularly bad, with focus on topics that are outdated and specifics that no longer apply in today's world of computing. In several sections the authors go into great detail to no apparent purpose, other than to show off their knowledge of physics, chemistry, and biology.As a reference, this book has utility, and that's why I gave it two stars rather than one. As a text, it's lousy, and I take pity on students who are saddled with it.

In general a good overview of the field. However, I would not consider this book an introductory text for freshmen, rather for juniors/seniors with strong background in MATLAB, differential equations and physics; which this book assumes.I suppose that uneven difficulty level and quality of content across chapters is the price to pay when you have different authors for each section.I think the addition of pedagogical features such as: learning outcomes, checklists, examples of best practices would greatly improve this book to a level equal or greater than Saltzman's textbook.

Book quality is good, but as far as a BME textbook goes, it is missing much material.

I gave it to my brother because he's considering specializing in that area. He was very pleased. It is written in a way that even i as a medical student can understand. And the book arrived in an excellent condition.

LOVE IT.

Really good conditions. Almost new if it wasn't for a scratch. A little one. Nothing to worry about it. What makes me rate it with 3 stars is the fact that all the information is packed within block-paragraphs. Too many detail and information in just one paragraph. You really need to read carefully and pay attention since there is no Boldface or italicized letters, not even the subtitles. It annoying how this book has all valuable information squeezed in the paragraphs.

Great book!

Came on time and as expected.

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