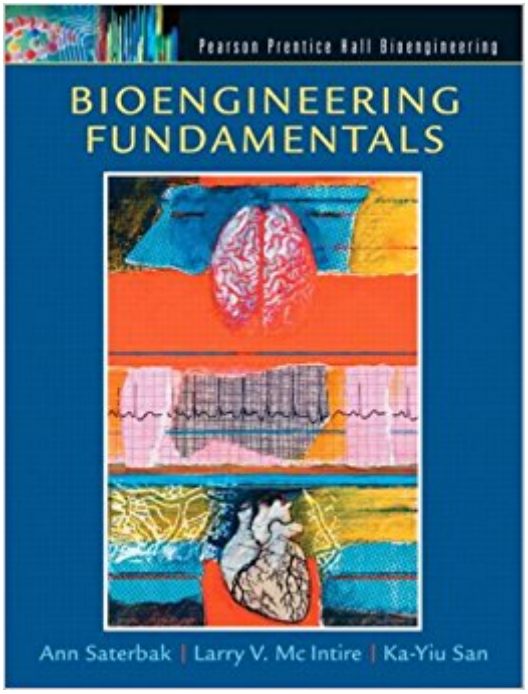
Bioengineering Fundamentals



Synopsis

Combining engineering principles with technical rigor and a problem-solving focus, this guide takes an interdisciplinary approach to the conservation laws that form the foundation of bioengineering: mass, energy, charge, and momentum. Demonstrates how conservation laws (including conservation of mass and energy, momentum, and charge) apply to biological and medical systems to lay a foundation for beginning bioengineers. Allows readers to build a mental model of how key concepts in engineering, chemistry, and physics are interrelated. Emphasizes how accounting and conservation equations are used to derive familiar laws, such as Kirchhoffâ ™s current and voltage laws, Newtonâ ™s laws of motions, Bernoulliâ ™s equation, and others. Extensive examples span the breadth of modern bioengineering, including physiology, biochemistry, tissue engineering, biotechnology, and instrumentation. For anyone interested in learning more about bioengineering.

Book Information

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Customer Reviews

Combining engineering principles with technical rigor and a problem-solving focus, this guide takes an interdisciplinary approach to the conservation laws that form the foundation of bioengineering: mass, energy, charge, and momentum.Demonstrates how conservation laws (including conservation of mass and energy, momentum, and charge) apply to biological and medical systems to lay a foundation for beginning bioengineers. Allows readers to build a mental model of how key concepts in engineering, chemistry, and physics are interrelated. Emphasizes how accounting and conservation equations are used to derive familiar laws, such as Kirchhoff’s current and voltage

laws, Newton’s laws of motions, Bernoulli’s equation, and others. Extensive examples span the breadth of modern bioengineering, including physiology, biochemistry, tissue engineering, biotechnology, and instrumentation.For anyone interested in learning more about bioengineering.

Treatment of material was adequate, not great. Examples in the chapters are often either too easy as to make them trivial, or too long as to make them extremely difficult to follow.Although the problems at the end of each chapter are interesting and challenging, the expectations are often unclear. This results in difficulty for the students (which is not always a bad thing). Where it goes wrong is that the solutions manual is horrible, which makes the life of the professor and graders extremely difficult.For a first edition textbook, it is okay/adequate. Improvements could make this textbook the standard for intro bioe courses, but it has a ways to go

Required textbook for college, reasonable rental price but it is really worn out and looks almost broke

Examples were relatively helpful, but overall important information isn’t exactly obvious to find, and some overall concepts are unclear, but for the price of renting if you really need the book for your class this isn’t a bad choice.

Looks great. Came quickly.

I found that many problems were badly worded and in some, the objectives were made clear enough. Don’t expect to learn much from just reading the chapters alone.

I enjoyed Saterbak’s investigation of fundamentals of engineering, especially since our instructor was very young (maybe a little green) -- he made great use of the text, relying on Saterbak’s organization and strategic presentation of the work to lead the class from day 1 thru finals :)An example of synergy, thank you Bill (ASU) and Ann (Rice).

The book is ripping apart. It’s almost unusable because all the binding is coming off.

Worth the price. Had some wear on the outside (like it was handled a lot), but inside was in great shape.

Biomedical Engineering Principles Of The Bionic Man (Series on Bioengineering & Biomedical Engineering) (Bioengineering & Biomedical Engineering (Paperback)) Bioengineering Fundamentals Bioengineering Fundamentals (2nd Edition) Dynamics of the Vascular System (Series on Bioengineering & Biomedical Engineering - Vol. 1) Platelet-Rich Plasma: Regenerative Medicine: Sports Medicine, Orthopedic, and Recovery of Musculoskeletal Injuries (Lecture Notes in Bioengineering) Numerical and Statistical Methods for Bioengineering (Cambridge Texts in Biomedical Engineering) Numerical and Statistical Methods for Bioengineering: Applications in MATLAB (Cambridge Texts in Biomedical Engineering) Preparative Chromatography for Separation of Proteins (Wiley Series in Biotechnology and Bioengineering) An Introductory Text to Bioengineering (Advanced Series in Biomechanics) (Advanced Series in Biomechanics (Paperback)) Neuroprosthetics: Theory and Practice (Series on Bioengineering & Biomedical Engineering - Vol. 2) Service Characteristics of Biomedical Materials and Implants (Series on Biomaterials and Bioengineering) Life-Enhancing Plastics: Plastics and Other Materials in Medical Applications (Series on Biomaterials and Bioengineering) Bioengineering (The Biotechnology Revolution) Plastic Injection Molding: Product Design & Material Selection Fundamentals (Vol II: Fundamentals of Injection Molding) (Fundamentals of injection molding series) Plastic Injection Molding: Mold Design and Construction Fundamentals (Fundamentals of Injection Molding) (2673) (Fundamentals of injection molding series) Metaphysics: The Fundamentals (Fundamentals of Philosophy) Volleyball Fundamentals (Sports Fundamentals) Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics, 7e (Fundamentals of Clinical Chemistry (Tietz)) Fundamentals of Special Radiographic Procedures, 5e (Snopek, Fundamentals of Special Radiographic Procedures) Fundamentals of Complementary and Alternative Medicine, 5e (Fundamentals of Complementary and Integrative Medicine)