

Specifically tailored to life science students, this textbook explains quantitative aspects of human biophysics with examples drawn from contemporary physiology, genetics, and nanobiology. It outlines important physical ideas, equations, and examples at the heart of contemporary physiology, along with the organization necessary to understand that knowledge.

The wide range of biophysical topics covered includes energetics, bond formation and dissociation, diffusion and directed transport, muscle and connective tissue physics, fluid flow, membrane structure, electrical properties and transport, pharmacokinetics, and system dynamics and stability. Enabling students to understand the uses of quantitation in modern biology, equations are presented in the context of their application, rather than derivation. They are each directed toward the understanding of a biological principle, with a particular emphasis on human biology.

"This book offers rigorous but accessible explanations of basic mechanisms and also presents biomedical applications in a manner that heightens understanding of the biological context. The book presents the biophysical basis of an impressive number of physiological and biochemical mechanisms in a manner that is not found in traditional textbooks. It should certainly help to broaden the knowledge base of students and researchers in biomedicine and life science and thereby facilitate cross-disciplinary understanding and interaction."

Per Hellstrand, Lund University, Sweden

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