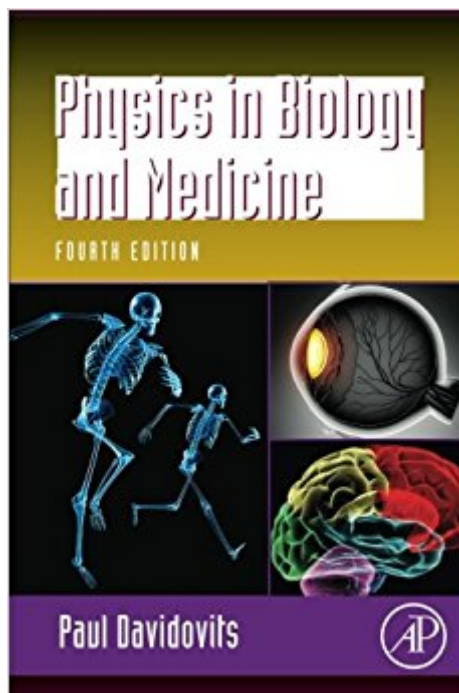




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Physics In Biology And Medicine, Fourth Edition (Complementary Science)



Synopsis

Physics in Biology and Medicine, Fourth Edition, covers topics in physics as they apply to the life sciences, specifically medicine, physiology, nursing and other applied health fields. This is a concise introductory paperback that provides practical techniques for applying knowledge of physics to the study of living systems and presents material in a straightforward manner requiring very little background in physics or biology. Applicable courses are Biophysics and Applied Physics. This new edition discusses biological systems that can be analyzed quantitatively, and how advances in the life sciences have been aided by the knowledge of physical or engineering analysis techniques. The volume is organized into 18 chapters encompassing thermodynamics, electricity, optics, sound, solid mechanics, fluid mechanics, and atomic and nuclear physics. Each chapter provides a brief review of the background physics before focusing on the applications of physics to biology and medicine. Topics range from the role of diffusion in the functioning of cells to the effect of surface tension on the growth of plants in soil and the conduction of impulses along the nervous system. Each section contains problems that explore and expand some of the concepts. The text includes many figures, examples and illustrative problems and appendices which provide convenient access to the most important concepts of mechanics, electricity, and optics in the body. Physics in Biology and Medicine will be a valuable resource for students and professors of physics, biology, and medicine, as well as for applied health workers. Provides practical techniques for applying knowledge of physics to the study of living systems Presents material in a straight forward manner requiring very little background in physics or biology Includes many figures, examples and illustrative problems and appendices which provide convenient access to the most important concepts of mechanics, electricity, and optics in the body

Book Information

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"The text provides clear descriptions of medical devices and techniques such as MRI, CAT scan and cochlear implant. It discusses biological systems that can be analyzed quantitatively and shows how advances in the life sciences have been aided by the knowledge of physical or engineering analysis techniques."--Anticancer Research, August 2013 Reviews from the 2e: "This is a book you should consider if you are teaching the one-semester premed course. This text could be used in two ways: 1) as a text for a one-term course in the physics of the body (without calculus) for non-physics majors in premed or allied health programs, or 2) as a supplementary text for the introductory physics course, particularly for premed students."--Russell Hobbie, University of Minnesota "There is certainly a viable market (for this book), if not as a stand-alone physics text, as a collection of problems, examples, and discussions at the boundary between physics and biology and medicine. It is very well written; it is certainly accurate; and it is pretty complete."--David Cinabro, Wayne State University

Paul Davidovits, Professor of Chemistry at Boston College, was co-awarded the prestigious R.W. Wood prize from the Optical Society of America for his seminal work in optics. His contribution was foundational in the field of confocal microscopy, which allows engineers and biologists to produce optical sections through 3D objects such as semiconductor circuits, living tissues, or a single cell. Dr. Davidovits earned his doctorate, masters, and undergraduate degrees from Columbia University. Prior to his appointment at Boston College, he was a faculty member at Yale University. He has published more than 150 papers in physical chemistry and is a Fellow of the American Physical Society and of the American Association for Advancement of Science. The second edition of *Physics in Biology and Medicine* received the Alpha Sigma Nu Book Award in the Discipline of the Natural Sciences. **A PERFECT FIT TO COURSES IN PHYSICS AND BIOPHYSICS** *Physics in Biology and Medicine*, Fourth Edition covers topics in physics as they apply to the life sciences, specifically medicine, physiology, nursing, and other applied health fields. The text provides clear descriptions of medical devices and techniques such as MRI, CAT scan, and cochlear implant. *Physics in Biology and Medicine*, Fourth Edition is a concise introductory paperback that surveys

and relates basic physics to living systems. It discusses biological systems that can be analyzed quantitatively, and shows how advances in the life sciences have been aided by the knowledge of physical and engineering analysis techniques.

The descriptions are very clear, and it has helped me a lot to give my first semester Biology students, physics examples truly related with their discipline. Many biology students think that physics is not related with their careers

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Excellent for your MCAT.

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PHYSICS IN BIOLOGY AND MEDICINE, by Professor Paul Davidovits, is an expository masterpiece of admirable didactic value, which has gained additional attractiveness through the myriad of improvements made in the third edition. Reading PHYSICS IN BIOLOGY AND MEDICINE, Third Edition,I have been thoroughly impressed by Professor Davidovits scholarly depth and persuasive sincerity. Moreover, his uncanny ability to communicate difficult concepts in surprisingly accessible and yet technically accurate language is certainly rare. The book reviewed here can be profitably employed as a faithful companion to the regular text adopted by any instructor, for a one-year course of general physics to biology and premed students.

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