Quantitative Human Physiology: An Introduction (Biomedical Engineering)

Joseph J Feher Ph.D. Cornell University
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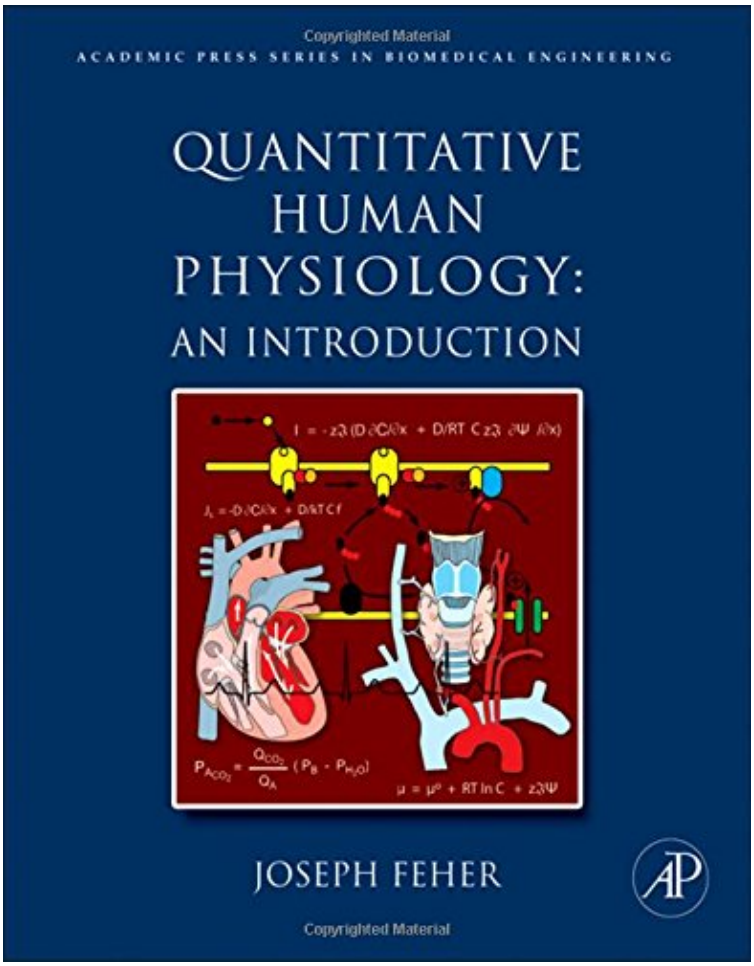

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Joseph J Feher Ph.D. Cornell University : Quantitative Human Physiology: An Introduction (Biomedical Engineering) before purchasing it in order to gage whether or not it would be worth my time, and all praised Quantitative Human Physiology: An Introduction (Biomedical Engineering):

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Quantitative Human Physiology: An Introduction presents a course in quantitative physiology developed for undergraduate students of Biomedical Engineering at Virginia Commonwealth University. The text covers all the elements of physiology in nine units: (1) physical and chemical foundations; (2) cell physiology; (3) excitable tissue physiology; (4) neurophysiology; (5) cardiovascular physiology; (6) respiratory physiology; (7) renal physiology; (8) gastrointestinal physiology; and (9) endocrinology. The text makes extensive use of mathematics at the level of calculus and elementary differential equations. Examples and problem sets are provided to facilitate quantitative and analytic understanding, while the clinical applications scattered throughout the text illustrate the rationale behind the topics discussed. This text is written for students with no knowledge of physiology but with a solid background in calculus with elementary differential equations. The text is also useful for instructors with less time; each chapter is intended to be a single lecture and can be read in a single sitting.A quantitative approach that includes physical and chemical principlesAn integrated approach from first principles, integrating anatomy, molecular biology, biochemistry and physiology. Illustration program reinforces the integrated nature of physiological systemsPedagogically rich, including chapter objectives, chapter summaries, large number of illustrations, and short chapters suitable for single lecturesClinical applications relevant to the biomedical engineering student (TENS, cochlear implants, blood substitutes, etc.)Problem sets provide opportunity for practice and assessment throughout the course.

".. in terms of what is out there this book provides the best mix I have seen thus far of balancing the two aspects of "quantitative" "physiology" --Professor Sean Collins at University of Massachusetts - Lowell "It would be quite useful for engineers who want to ply their trade in the physiological sciences..... I have been looking for this kind of book for a long time. I am going to show it also to more of my mathematical colleagues. I am still evaluating it and reading it myself-but I love the approach. The author needs to be congratulated for a masterpiece of a work." --Professor Lawrence Basso, MD, Stanford University "This book is long-overdue for combined teaching of a course that moves from cellular to systems physiology that truly integrates the quantitation with the physiology. It is an extremely easily read book that covers all aspects of physiology, from the mathematical concepts that underlie how human physiology functions to medically-related diseases and conditions, as well as current medical treatments. I plan to utilize this book for upper level undergraduate biomedical engineering students in sensory and quantitative physiology, as well as for advanced graduate students in a pharmacological and physiological PhD program in medical school, with appropriate emphasis from the book for each student group according to their needs and abilities." --Amy B. Harkins, Associate Professor, Saint Louis University "Complements to Dr. Feher, the book is excellent and the students are benefiting."--Dr. David Reinkensmeyer, University of California, IrvineAbout the AuthorDr. Feher is professor of Physiology and Biophysics at Virginia Commonwealth University. He received his Ph.D. from Cornell University, and has research interests in the quantitative understanding of the mechanisms of calcium uptake and release by the cardiac sarcoplasmic reticulum, in the mechanisms of calcium transport across the intestine, and in muscle contraction and relaxation. Dr. Feher developed a course in Introductory Quantitative Physiology at VCU and has been course coordinator for more than a decade. He also teaches muscle and cell physiology to medical and graduate students and is course coordinator for the Graduate Physiology survey course in physiology given at VCUs School of Medicine.