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Titolo	Physiology for Engineers : Applying Engineering Methods to Physiological Systems // by Michael Chappell, Stephen Payne
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ISBN	3-319-26197-5
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (XIV, 167 p. 71 illus., 27 illus. in color.)
Collana	Biosystems & Biorobotics, , 2195-3570 ; ; 13
Disciplina	571.015118
Soggetti	Biomedical engineering Human physiology Bioinformatics Cytology Biomedical Engineering and Bioengineering Human Physiology Computational and Systems Biology Cell Biology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Cell structure and biochemical reactions -- Cellular homeostasis and membrane potential -- The action potential -- Transport and cell-cell transmission -- Pharmacokinetics -- Skeletal-Muscular System -- Cardiovascular system I: The heart -- Cardiovascular system II: The vasculature -- Respiratory system -- Nervous system.
Sommario/riassunto	This book provides an introduction to qualitative and quantitative aspects of human physiology. It looks at biological and physiological processes and phenomena, including a selection of mathematical models, showing how physiological problems can be mathematically formulated and studied. It also illustrates how a wide range of engineering and physics topics, including electronics, fluid dynamics, solid mechanics and control theory can be used to describe and understand physiological processes and systems. Throughout the text there are introductions to measuring and quantifying physiological processes using both signal and imaging technologies. Physiology for

Engineers describes the basic structure and models of cellular systems, the structure and function of the cardiovascular system, the electrical and mechanical activity of the heart and provides an overview of the structure and function of the respiratory and nervous systems. It also includes an introduction to the basic concepts and applications of reaction kinetics, pharmacokinetic modelling and tracer kinetics. It is of interest to final year biomedical engineering undergraduates and graduate students alike, as well as to practising engineers new to the fields of bioengineering or medical physics.

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