

1. Record Nr.	UNINA9910437881003321
Titolo	Neural engineering / / Bin He, editor
Pubbl/distr/stampa	New York, : Springer Science+Business Media, 2013
ISBN	1-299-19726-4 1-4614-5227-9
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (800 p.)
Altri autori (Persone)	HeBin <1957->
Disciplina	612.80113
Soggetti	Biomedical engineering Neural networks (Neurobiology)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes bibliographical references and index.
Nota di contenuto	Neural Engineering; Preface; Contents; Chapter 1: Introduction to Neurophysiology; 1 Overview of Neurons, Synapses, Neuronal Circuits, and Central Nervous System Anatomy; 1.1 Temporal and Spatial Facilitation; 1.2 Special Neural Circuits; 1.3 Reflexes; 1.4 Reflex Time; 2 Sensory Systems; 2.1 Properties of a Particular Stimulus; 2.2 Functional Organization of a Receptor; 2.3 The Relative Distributions of Receptors within the Human Body; 2.4 Sensory Input into Motor Systems; 3 Somatovisceral Sensibility; 3.1 Processing in the Central Nervous System; 3.2 Basic Anatomy of the Somatosensory System 3.2.1 Specific Pathways3.2.2 Nonspecific Pathways; 3.3 Somatosensory Projection Areas in the Cortex; 3.4 Mechanoreception; 4 General Anatomic and Functional Features of the Motor System; 4.1 Motor Control Hierarchy for Voluntary Movements; 4.2 Spinal Cord; 4.3 Brainstem Components; 4.4 Cerebellum; 4.5 Motor Cortex; 4.6 Efferent Connections from the Motor Cortex; 4.7 Basal Ganglia and Thalamus; 5 Maintenance of Upright Posture and Sense of Equilibrium; 5.1 Sense of Equilibrium; 5.1.1 Macula Organs; 5.1.2 Semicircular Canals; 5.1.3 Central Vestibular System; 5.1.4 Vestibular Reflexes 6 Complex Integrative Functions of the Motor System6.1 The Complex Motor Function of Speech; 6.2 Motoneuron Recruitment; 7 Pathophysiology of the Motor System; 7.1 Disorders of the Spinal Cord; 7.2 Disruption of Functions Within the Brainstem; 7.3 Disturbances Within the Cerebellum; 7.4 Disorders Within the Basal Ganglia; 7.5

Impairment Within the Motor Cortex; 8 The Autonomic Nervous System; 8.1 Sympathetic; 8.2 Parasympathetic; 8.3 Neurotransmitters in the ANS; 8.4 The Adrenal Medulla; 8.5 Central Organization of the ANS; 9 The Hypothalamus and Homeostasis
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3.2.4 NIRS

Sommario/riassunto

Neural Engineering, 2nd Edition, contains reviews and discussions of contemporary and relevant topics by leading investigators in the field. It is intended to serve as a textbook at the graduate and advanced undergraduate level in a bioengineering curriculum. This principles and applications approach to neural engineering is essential reading for all academics, biomedical engineers, neuroscientists, neurophysiologists, and industry professionals wishing to take advantage of the latest and greatest in this emerging field.
