

## METADATA

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## Abstract

The book is aimed at undergraduate and graduate students of educational policy, special education and lifelong learning, who are taught the basic principles of neuroscience, with the ultimate goal of understanding the mechanisms of function and organization of the brain, from the nerve cell to the integrated nervous system, in order to bridge the organic basis of behavior with its potential applications. It can be used by psychologists, educators, and unfamiliar students and faculty in the humanities and social sciences. The chapters ensure maximum clarity and relevance for a wide range of readers, provide critical interdisciplinary insights, and highlight contemporary research findings that pave the way for new frontiers and directions in learning and teaching. Data and concepts are communicated clearly to assist students in their orientation. The contents and chapters are structured with

a logical flow of narrative and keep the book up-to-date on latest research in this rapidly evolving field. Topics include: - A review of the structural elements of the brain and the levels of organization of the nervous system from the subcellular to the behavioral level. - Macroscopic and microscopic architecture of the cortical hemispheres, the predominant apparatus of cognition. - Synapse characteristics and neurotransmitter systems. - Fundamental concepts of genetic origins and epigenetic influences on the development and arrangement of neural circuits. - Systems and mechanisms involved in learning and language functions. - The plasticity of brain tissue with particular emphasis on lifelong learning. -Evolutionary bases of intelligence, cognition and meaning. -Basic neuropathology of genetic syndromes with applications to special education. - Neurobiology of gifted individuals.



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