UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Basic Elements of Neuroanatomy and Neurophysiology

2021-1-E2401P002

Learning area

KNOWLEDGE AND SKILLS USEFUL TO UNDERSTAND, PROMOTE AND CHANGE INDIVIDUAL PSYCHOLOGICAL FUNCTIONING

Learning objectives

Knowledge and understanding

- Basis of neuro-biology, neuro-anatomy and neuro-physiology of the central nervous system
- Anatomic, physiological and neuro-scientific approaches to the study of the human brain

Applying knowledge and understanding

- Linking the main motor, sensory and cognitive functions to the anatomical and functional structure of the human nervous system
- Basic knowledge of the anatomo-functional underpinnings of brain dysfunctions

Contents

The main aim of the course is to provide a primer in neuroanatomy and neurophysiology, with particular emphasis on topics that are relevant for psychologists and cognitive neuroscientists.

Detailed program

- Elements of neurobiology and electrophysiology of the neuron. Development of the nervous system
- Neuroanatomy of the human brain
- Cerebral blood and liquoral circulation
- Sensory Systems
- Motor System
- Neurotransmitters and homeostatic control of the brain and behavior

Prerequisites

Nothing specific. A basic knowledge of biology facilitates the understanding of the course contents.

Teaching methods

In addition to lectures, part of the teaching will take place through neuroanatomy exercises using videos, three-dimensional models and drawings of the human brain. Review sessions of macro-topics of the course and simulations of the exam are scheduled.

The material (slides, scientific articles) is made available on the e-learning site of the course, so that it can also be used by non-attending students.

Assessment methods

The exam is written and comprises a section with multiple- choice questions, and one open question. Multiple-choice The questions are aimed at ascertaining the acquisition of the theoretical neuroanatomical, neurobiological and neurophysiological knowledge of the human brain. The open question allows assessing the ability to expose more complex topics using an appropriate technical language. The evaluation criteria are: correctness of the answers at the multiple-choice questions, a comprehensive and timely answer at the open question

Textbooks and Reading Materials

Maravita. A. (2018) Fondamenti anatomofisiologici della attività psichica. Poletto Editore

Testi per approfondimento (opzionale):

Felten DL, Shetty AN, (2010) Atlante di Neuroscienze di Netter, Elsevier