



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Laboratorio: Strumenti di Valutazione e Potenziamento delle Funzioni Sensori-motorie

2021-2-F5104P046

Learning area

2: Methods and techniques for treatment and rehabilitation

Learning objectives

Knowledge and understanding

Assessment of sensory-motor functions in healthy and brain-damaged individuals.

Basic diagnostic tools and rehabilitative paradigms of psychological relevance.

Applying knowledge and understanding

Knowledge of principles and procedures for the assessment of sensory-motor functions and their application for both clinical and research purposes.

Contents

The course aims at favouring the comprehension of the key role that brain plasticity plays in the rehabilitation and enhancement of the functions supported by the sensorimotor system, thanks to theoretical lectures, examples, and

practical activities.

Detailed program

LECTURES

- Sensorimotor functions and their assessment
- Brain plasticity and motor rehabilitation in brain damaged patients
- Sensory deprivation and neural plasticity
- The rehabilitation based on non-invasive brain stimulation
- The impact of functional limitations of peripheral origin on sensorimotor functions
- Motor cognition and rehabilitation (motor imagery and imitation)
- The plasticity of sensorimotor functions along the life-span

PRACTICAL ACTIVITIES

- Critical review of published studies describing protocols for the rehabilitation of sensorimotor functions
- Writing of a research project proposal on the rehabilitation and enhancement of sensorimotor functions in specific populations

Prerequisites

Basic knowledge of the neurophysiology of the somatosensory and motor systems.

Teaching methods

Lectures, discussions, video presentations, individual and group activities.

Assessment methods

Project work: Individual writing of a research project proposal on the enhancement of sensorimotor functions in clinical populations.

Textbooks and Reading Materials

Optional readings:

Denes G., Pizzamiglio L. et al (a cura di, 2019) Manuale di Neuropsicologia. Normalità e patologia dei processi cognitivi, Bologna: Zanichelli; Capitolo 43 "Plasticità cerebrale e recupero funzionale" di Denes G. e Pizzamiglio L.

Bolognini N, Vallar G. (a cura di, 2015) Stimolare il cervello – Manuale di stimolazione cerebrale non invasiva, Bologna: Il Mulino; Capitoli 4 e 5.

Bear M.F., Connors B.W., & Paradiso M.A. (2016). Neuroscienze. Esplorando il cervello. 4° ed., Milano, Masson; Capitoli 12, 13 e 14. [richiami]
