UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Neuro-Functional Basis of Cognitive and Affective Processes

2223-1-F5104P047-F5104P048M

Learning area

Applied Experimental Psychological Sciences

Learning objectives

Knowledge and understanding

. Knowing the cognitive, neurobiological and functional bases of social and affective mental processes.

. Understanding the genesis and dynamics of alterations and disorders of cognitive, communicative, emotional-motivational and social activity

Applying knowledge and understanding

• Acquisition of the ability to apply the acquired knowledge in order to design and carry out empirical studies in the field of social and affective neuroscience.

• Acquisition of the ability to apply the acquired knowledge in order to personally design and carry out clinical interventions focused on specific patients with socio-affective disorders.

Contents

This course provides essential knowledge concerning the main cognitive models and the neurophysiological bases of social and emotional-motivational processes in humans, in order to promote the understanding of socio-

emotional and behavioral functions, both in healthy people and patients with specific social or affective disorders.

Detailed program

1. Perception of causality, biological motion and animacy
2. Mentalization
3. Face and gaze perception
4. Social attention and gaze following
5. Attentional biases towards social and emotional stimuli.
6. Embodied cognition
7. Neural bases of social cognition and self-referential processes
8. Default mode network
9. Conscience: free will and forensic neurosciences
10. Mirror neurons, empathy, intention understanding, Autism
11. Faces and gestures coding, the Affective and Emotional Brain
12. Sex differences in social cognition
13. Action Coding: Neuroscience of dance and movement
14. Audio-visuomotor neurons and multimodal coding
15. Neuroscience of music and Neuroaesthetics

Prerequisites

This course requires a basic knowledge of anatomy and physiology of the nervous system and its cognitive functions.

The understanding of textbook and scientific article in English.

Teaching methods

Frontal lessons with slides and audio/video presentations. Presentation and discussion of ongoing data and research articles.

Assessment methods

Written exam with an oral interview on demand (either by the student or by the lecturers).
The written examination consists of open questions (essays) on textbooks and handouts of the lectures.
The oral colloquium is an in-depth interview on the topics covered in class.

Textbooks and Reading Materials

From the handbook (online & open access) “Social and Affective Neuroscience of Everyday Human Interaction - From Theory to Methodology”, Springer Nature, Boggio et al. (2022). https://link.springer.com/book/10.1007/978-3-031-08651-9
Part 2. Social Neuroscience and Moral Emotions
Chapter 5. AM Proverbio, A Zani Mirror neurons in actions…ERP and neuroimaging evidences
Chapter 6: AM Proverbio Sex differences in social cognition
Part 4. Methods used in Social and Affective Neuroscience
Chapter 12: AM Proverbio EEG and ERPs in the study of Language and Social Knowledge
Links to the chapters:
https://link.springer.com/chapter/10.1007/978-3-031-08651-9_5
https://link.springer.com/chapter/10.1007/978-3-031-08651-9_6
https://link.springer.com/chapter/10.1007/978-3-031-08651-9_12
2. Gazzaniga M.S., Ivry R.B., & Mangun G.R. (2019). Cognitive Neuroscience. New York: Norton (ONLY **Chapters 13 & 14)**.

Scientific papers/chapters will be provided during the course and uploaded on the appropriate E-learning web page.

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | GENDER EQUALITY