



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## COURSE SYLLABUS

### Neuro-functional Basis of Cognitive and Affective Processes

2122-1-F5104P047-F5104P048M

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#### 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**

Perception of causality, biological motion and animacy  
Mentalization  
Face and gaze perception  
Social attention and gaze following  
Attentional biases towards social and emotional stimuli.  
Embodied cognition  
Neural bases of social cognition and self-referential processes  
Default mode network  
Conscience: free will and forensic neurosciences  
Mirror neurons, empathy, intention understanding, Autism  
Faces and gestures coding, the Affective and Emotional Brain  
Sex differences in social cognition  
Action Coding: Neuroscience of dance and movement  
Audio-visuomotor neurons and multimodal coding  
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.

Lessons will be held in presence, unless further COVID-19 related restrictions are imposed.

## **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 on textbooks and handouts of the lectures.

## **Textbooks and Reading Materials**

- Boggio, P. and Wingerbach, T., Eds. (2021). "Social and Affective Neuroscience of Everyday Human Interaction: from theory to methodology". Springer Verlag Foreword by RALPH ADOLPHS. (**Chapters 4, 5, 12** authored by Alice Mado Proverbio).

- Gazzaniga M.S., Ivry R.B., & Mangun G.R. (2019). Cognitive Neuroscience. New York: Norton (**Chapters 13 &14**).

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

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