UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Cognitive Neuroscience

2021-1-F5105P002

Learning area

Applied Experimental Psychological Sciences

Learning objectives

Knowledge and understanding

This course provides a strong background in systems-level neuroscience and allows students to develop integrative research interests that cross domains. The laboratory will allow students to learn how to program basic experiments in cognitive neuroscience.

Applying knowledge and understanding

Students in the program gain a thorough understanding of the intellectual issues that drive this rapidly growing field, as well as expertise in the major methods for research on higher brain function. Students will also learn to apply the acquired knowledge to design and carry out empirical studies in the field of cognitive neuroscience. In particular, they will learn how to design experiments in E-Prime, a program designed to facilitate the conception of any experiment that uses a computer as an interface between the subject and the experimenter.

Contents

The course provides a thorough update and review of fundamental issues in cognitive neuroscience, also

Detailed program

Recent developments in the study of the:

- neurofunctional mechanisms involved in perception of different stimuli categories;

- neural underpinning of language comprehension;

- sensory deprivation and brain plasticity;

- cognitive neuroscience of memory;

- organization of conceptual knowledge of objects in the human brain;

- neurofunctional mechanisms of action control;

- cognitive neuroscience of attention.

Prerequisites

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

Teaching methods

The course will consist of frontal lessons, classwork, discussion on scientific papers, and assignments. All

*** Lessons will be held in presence or through online video lessons, according to the University's regulations

Assessment methods

The exam will verify the level of mastery of the course contents with special attention to:

- Methods and research designs in cognitive neuroscience;

- Ability to elaborate course contents;

- Ability to analyze scientific papers in the field of cognitive neuroscience.

The exam will consist of several questions and a number of open questions covering all the topics

*** During the COVID-19 emergency, exams will be conducted according to the University's regulations

Textbooks and Reading Materials

The course material will be indicated during the course and will be uploaded on the course web-site.