UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Practical Class: Psychophysic and Experimental Methods for Neuropsychological Assessment

2526-2-F5108P025

Learning area

Models and techniques for assessing psychological functioning
Methods, techniques and tools of psychology
Statistics and quantitative methods

Learning objectives

At the end of the course students should be able to:

Knowledge and understanding
-Understanding the rationale behind performance and the main psychophysical indices and the methodologies behind the main cognitive functions.
-Understanding the main experimental paradigms for assessing the main cognitive functions.
-Understanding the different measurements of behaviour such as direct/explicit vs indirect/implicit, as well as their theoretical principles.

Applying knowledge and understanding

- Knowing how to calculate the value of the absolute and differentiale threshold for evaluating human information processing abilities.
- Applying some behavioural tools for assessing cognitive deficits.
- Carrying on an integrative examination of cognitive functioning.

Making judgements
Stimulating critical thinking and personal reflection through active exchange among the lecturer and the peers,

project work and class discussion of scientific articles presented by the students.

Communication skills
This skill will be achieved through orally presented assignments and written projecct work on the main subjects presented in the course.

Learning skills
Theoretical and methodological knowledge will be provided by the lecturer aiming to stimulate an active interaction that facilitates cooperative learning. Extra course material will also be provided to deepen knowledge and develop self-learning skills.

Contents

Students will be involved in pratical exercises on the use of the main experimental paradigms and tasks employed to assess cognitive impairments, in particular those involving reaction times, accuracy recording and performance efficiency. In addition, for each of the main basic cognitive functions some of the method and tasks used in psycophysics and cognitive psychology will be presented as a compendium to neuropsychological evaluation so as to better define the cognitive profile of an individual. Scientific articles will be discussed as further examples of how it is possible to apply cognitive psychology paradigms to experimental and clinical research.

Detailed program

Theoretical basis of cognitive processes and operationalization of variables

- Introduction to psychophysics
- Main psychophysical indices
- Classic methods
- Signal Detection Theory
- Direct and indirect measurment methods
- Reaction times methods and accuracy
- Behavioral indices for evaluating cognitive abilities
- Experimental methods to evaluate the following cognitive functions:
    - perception
    - object/face recognition and emotional expressions
    - attention and spatial cognition
    - memory
    - frontal lobe functions

Prerequisites

A basic knowledge of experimental research methods, cognitive psychology and neuropsychology will be beneficial. The understanding of textbook and scientific article written in English.

Teaching methods

The course will be held in presence and in Italian. Teaching will consist of lecture-based lessons, and also interactive classwork, discussion on scientific papers, and group assignments. All lessons will contain at least a part of interaction with students.

Assessment methods

Lab evaluation consists of a clinical case simulation: some description of the patient and his/her cognitive profile of functioning will be given. The student is requested to make a diagnostic hypothesis about the cognitive functioning of a patient and to indicate which tasks and measurments learnt during the lab are the best to verify it and why.

Erasmus students are admitted to the course and take the exam in English.

Textbooks and Reading Materials

Detailed information about reading material and the bibliography will be given during the laboratory and published on the course webpage.

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION