UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Neuroscienze Cognitive del Linguaggio

2526-1-F5110P011

Learning area

Psychological functioning: models and methods for assessment.
Methods, techniques, and tools of psychology.

Learning objectives

To understand what endows human beings with language abilities, it is necessary to know in detail the cognitive and neural mechanisms involved. This course aims to promote an in-depth understanding of the cognitive and neurobiological basis of human language, as informed by multidisciplinary evidence of research in the cognitive neuroscience of language, based on the combination of psychophysiological and neuropsychological approaches. In particular, the course will promote the following knowledge and skills:

- Knowledge and understanding of the main neurocognitive and neuropsychological theories of language during development and adulthood, both in normal and in pathological conditions.
- Applying knowledge and understanding will be promoted through the analysis of the main methodological tools and the most important experimental evidence in the cognitive neuroscience of language, stimulating the ability to translate theoretical knowledge into experimental and neuropsychological practice.
- Making judgements: judgment and critical skills will be promoted through the completion of a project work focused on a specific problem in the cognitive neuroscience of language, which will include an experimental activity and the drafting of a written report.
- Communication skills will be stimulated through the supervision by the teacher of the drafting of the written report for the project work, with indications on the fundamentals of scientific writing and the simulation of a peer review activity.
- Learning skills will be stimulated by discussions concerning the search and critical interpretation of the specialized literature in the cognitive neuroscience of language.

Contents

Neurocognitive and neuropsychological models of language processing.
Experimental verification of theoretical models of language processing.
Applications in cognitive neuroscience and neuropsychology.

Detailed program

• Fundamentals of neuroanatomy of language
• Introduction to general linguistics
• Introduction to the cognitive neuroscience of language
• Models of language production
• Models of language comprehension
• Word processing
• Sentence processing
• Discourse processing
• Pragmatics of language
• Pragmatics of language
• Verbal short-term and working memory
• Language development and acquisition
• Developmental language disorders
• Acquired language disorders: aphasia.
• Acquired language disorders: primary progressive aphasia.

Prerequisites

The course requires basic knowledge on the anatomy and physiology of the nervous system, and on the neurofunctional organization of cognitive processes.

Teaching methods

The course will mainly consist of:

- 25 frontal room lessons of 2 hours each, in presence.
- 2 interactive exercise lessons of 2 hours each, in presence.
- 1 frontal exercise lesson of 2 hours, in presence.
  Teaching will be in Italian, with audio-visual materials in either Italian or English.

Assessment methods

The evaluation of the course will be based on

1. A final exam, in written-only modality, aimed at verifying the understanding of all the topics covered in the

course, with 30 multiple choice questions and 2 open questions. As per the regulations, students or the teacher have the right to optionally request an oral exam in addition to the written exam. The evaluation of the oral exam may determine positive or negative changes, or no modification of the final grade.
The final exam as a whole will contribute 70% to the final grade.

2. The remaining 30% of the final grade will be awarded on the basis of the active involvement of the student during classes, as well as on the basis of a project work assigned at the beginning of the course. This project work will be carried out either individually or in small groups, and under the teacher's supervision, and will consist on the application of the acquired skills in relation to a problem in the cognitive neuroscience of language, by carrying out an experimental activity and describing this activity in a written report.
Erasmus students can contact the teacher to agree on the possibility of carrying out the project work and taking the exam in English.

Textbooks and Reading Materials

The lecture handouts and other relevant teaching materials will be made available online on the e-Learning website of the course. The textbooks for the course are:

- Grimaldi, M. (2019). Il cervello fonologico. Carocci.
- Semenza, C., Franzoni, F., & Zanini, C. (2019). Il cervello morfologico. Carocci.
- Panizza, D., Catricalà, E., & Cappa, S. (2020). Il cervello semantico. Carocci.
- Tettamanti, M. (2020). Il cervello sintattico. Carocci.
- Bambini, V. (2017). Il cervello pragmatico. Carocci.
- Kemmerer, D. L. (2022). Cognitive neuroscience of language (2nd edition). Routledge. (optional)

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING