UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Neurolinguistics

2425-1-F5108P012

Learning area

Psychological functioning: models and methods for assessment.

Learning objectives

To understand what endows human beings with language abilities, it is necessary to know in detail the cognitive and neural mechanisms that interact in the use of language. 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 psycholinguistics and neurolinguistics, based on the combination of psychophysiological and neuropsychological approaches. Particular emphasis will be placed on experimental methods and evidence, and on the derived neurocognitive and neuropsychological models, both in normal and in pathological conditions. At the end of the course, students should have acquired a thorough overview of state-of-the-art research theories and directions in neurolinguistics, and should have learned the relevant concepts and appropriate terminology relating to language comprehension and production, reading, language development and acquisition, as well as aphasias. Furthermore, they should have acquired the ability to interpret and discuss specialist literature in the fields of neurolinguistics and neuropsychology 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

The course will present in depth the main neurocognitive and neuropsychological models of language processing:
• Fundamentals of neuroanatomy of language
• Introduction to general linguistics
• Introduction to neurolinguistics
• 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, on the neurofunctional organization of cognitive processes, as well as on neuropsychology.

Teaching methods

The course will mainly consist of frontal room lessons in Italian and of audio-visual materials in either Italian or English. In the second part of the course, students, either individually or in small groups, and under the teacher's supervision, will apply the skills acquired by investigating problems in the neurolinguistics and in the neuropsychology of language, through the analysis of experimental studies and of clinical case studies.

Assessment methods

The evaluation of the course will be based on a final test aimed at verifying the understanding of the topics covered in the course. The final test will consist of a written exam with 30 multiple choice questions and 2 open questions. Depending on the correctness of the answers, the multiple choice questions will each provide from a minimum of -0.5 points to a maximum of +0.5 points, while the open questions will provide from a minimum of 0 points to a maximum of +3 points.
The written exam will be followed by an optional oral exam, or at the request of the teacher. The evaluation of the oral exam may determine positive or negative changes, or no modification of the final grade.
The final grade will also in part (30%) take into account the outcomes of the work, either individually or in small groups, as well as the active involvement of the student during classes.
Although this course is held in Italian, Erasmus students can contact the teachers to agree on the possibility of studying on course materials in English, and/or on the possibility of taking the exam in English, if they wish to do so.

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.
- Tettamanti, M. (2020). Il cervello sintattico. Carocci.
- Panizza, D., Catricalà, E., & Cappa, S. (2020). Il cervello semantico. 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