UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Cognitive Psychology

2526-1-F5109P001

Learning area

Applied Experimental Psychological Sciences

Learning objectives

Knowledge and understanding

Students will develop
• a deep understanding of cognitive concepts and theories by reviewing major research findings.
• Knowledge and understanding of the experimental method: How the application of experimental method help in theoretical advances.
• Knowledge of main real-world applications of research findings and how advances in basic reasearch can be relevant to everyday life.

The laboratory will teach students basic programming abilities in Matlab.

*Applying knowledge and understanding**

Students will be able to
• apply their understanding of main cognitive theories and concepts in order to design experiments related to everyday issues.
• design a simple experiment and implement it in Matlab.

Making judgment
Students will gain the ability

- to independently integrate methodological and theoretical skills in the field of cognitive psychology

- to apply these skills to critically judge previous studies in order to propose new research projects in the field of applied cognitive psychology, that is reorganize and critically evaluate the previously acquired knowledge to promote new and original solutions.

This will be achieved through class discussions on relevant recent findings, the use of the flipped-classroom strategy and group work.

Communication skills
Students will acquire communication skills that allow effective interaction; during flipped-classroms or through project presentations, students will learn how to present research projects and to communicate results and conclusions to an audience of specialists and non-specialists in a clear, detailed, and scientifically grounded manner, using the specific lexicon of the discipline. Students will also learn how to coordinate during teamwork and collaborate effectively and competently in English.

Learning skills
The course will promote the acquisition of the ability to adopt new developments and innovations emerging from international scientific results in cognitive psychology, updating one's skills to the rapid evolution of the field. The course will also promote the use of specialized bibliographic resources to perform in-depth scientific reviews to critically judge current knowledge and capitalize on it to propose further advancements in the field . This will be achieved by discussing the available digital instruments to perform bibliographic research and through class discussions.

Contents

We will analyze the flow of information processing in the mind. In particular, the course aims at explaining how people perceive and attend to the environment, how people learn and remember, and how they reason and make decisions. Applications to everyday situations (e.g driving) will be presented. The ultimate goal will be to explain, manipulate, and replicate behavior in everyday contexts.

Detailed program

Student will be exposed to advanced findings and research methodologies in the following topics:

• Perception

• Attention

• Memory

• Knowledge representation

• Problem-solving

• Reasoning and decision making

Prerequisites

Course attendance requires fluent spoken and written English as a necessary pre-requisite: all lectures, laboratory tutorials, and all study material and exams will be in English.

It is assumed that students have knowledge and understanding of the basic methodology and theories in General Psychology. Students lacking such basic knowledge are encouraged to ask for a list of basic references.

Teaching methods

The course will be held in presence. The first part (42 hours) will consist of lectures and in-class activities (about 50% each). The second part (16 hours) will be an interactive practical course taking place in the computer labs.

The first part will consist of lectures on given topics followed by moments of in-class discussion where specific research articles will be critically analyzed and discussed. Some of the lectures will use the flipped-classrom strategy.

In the second part, students will learn the basic of the Matlab programming language, a language that is used in programming experiments in cognitive science.

In order to encourage active learning, during the first part optional activities will be offered to the students. Interested students will be divided in small groups and either develop a research project on one of the course topics or make presentation on specific topics in class (flipped classrom).

Assessment methods

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

• Theoretical references

• The use of technical language

• Methods and experimental procedures

• Ability to elaborate course contents

To better verify the achievements of the learning objectives the exam will be both written and oral. The written exam will consist of multiple-choice questions and open-ended questions on the course lecture topics. For the practial part the exam will be written consisting in multiple-choice and short-answers questions.

The oral exam will consist in questions on the course topics and in the presentation and discussion up-to-date research articles on the course topics presented in class.

For students attending the course, the examination could be partially or totally replaced by evalutarion of activities their participated to during term time (e.g research project or in class presentations).

Textbooks and Reading Materials

M. W. Eysenck & D. Groome (Eds.) (2023) Cognitive Psychology Revisiting The Classic Studies. Sage.

Lecture slides and additional material will be provided at the beginning of the course and made available on the course website.

Sustainable Development Goals

QUALITY EDUCATION