Syllabus of the course «Learning, Memory and Cognitive Development»

Approved

MP Academic Council

Protocol №2.6-06/7 29/08/2019

1. Course Description

a. «Learning, Memory and Cognitive Development»

b. Pre-requisites

None

c. Elective

d. **Abstract**

"Learning, Memory and Cognitive Development" is an elective course focusing the origins and evolution of human cognition across ontological development and individual learning, designed for the Master's Program "Cognitive sciences and technologies: From neuron to cognition". This course aims to introduce students to the study of cognitive development from a broad different point of view. Evidence from multiple disciplines, including cognitive and developmental psychology as well as from cognitive neuroscience will be examined.

The course covers the development of different cognitive abilities in children, going from the most basic to highest-level cognitive domains. The course will start with a review of the main findings from cognitive psychology and cognitive neuroscience about the development of attentional and perceptual abilities. Subsequent themes will cover topics such as categorization and learning abilities in children, as well as the development of social learning. The course will be also focused on the acquisition of both oral and written language abilities and particular attention will be pay to the development of different types of memory in children. Finally, the presence of high-domain cognitive abilities in children, such as metacognition, abstract reasoning and problem solving will be discussed.

The course "Learning, Memory and Cognitive Development" is a new and unique discipline within the educational programs of the National Research University Higher School of Economics. The course is based on the contemporary scientific research in cognitive science, following both classic behavior and cognitive neuroscience studies on cognitive development. The course is essential in training competent specialist in the areas of cognitive sciences and technologies.

The authors and teachers of the course are Beatriz Bermúdez-Margaretto and Beatriz Martín-Luengo, research fellows at the Centre for Cognition and Decision Making – Institute of Cognitive Neuroscience of the National Research University Higher School of Economics. They have considerable teaching experience including reading the related courses such as "Psycholinguistics", "Cognitive Neuropsychology", ''Memory and Decision Making'' and "Metacognition: fundamentals and applications".

2. Learning Objectives

Learning objectives of the course "Learning, Memory and Cognitive Development" are to introduce students to the research on children development through different cognitive domains and to show its connections with other branches of cognitive science covering such topics as

- principal approaches to the understanding of human cognition
- main theoretical explanations of the interactions between brain and cognition

3. Learning Outcomes

After completing the study of the course "Learning, Memory and Cognitive Development" the student should:

- Know basic notions and definitions used in the studies about cognitive development in children
- Know the key methods used in the studies about cognitive development in children.
- Know the main theoretical approaches to the conceptualization of human development.
- Acquire the ability to critically evaluate theories of cognitive development based on available evidence
- Possess skills for choosing appropriate experimental methods for psychological research.
- Possess skills for analyzing and developing experimental designs for studying cognitive development in infants.

4. Course Plan

No	Topic
1	Cognitive development. Perception, attention and learning in infancy
2	Conceptual development and categorization
3	Social learning, mental representation and theory of mind
4	Development of oral and written language
5	Development of different types of memory
6	Metacognition and metamemory
7	Reasoning, problem solving and executive function

5. Reading List

a. Required

Keenan, T., Evans, S., & Crowley, K. (2016). *An introduction to child development*. Sage.

b. Optional

Flavell, J. H., Miller, P. H., & Miller, S. A. (1985). *Cognitive development* (Vol. 338). Englewood Cliffs, NJ: Prentice-Hall.

6. Grading System

The grade will be determined by 60% average accumulative evaluation (4 multiple choice tests in class) and 40% Final exam.

Table of Grade Correspondence

Ten-point Grading	Scale Five-point Grading Scale	
1 - very bad 2 – bad 3 – no pass	Unsatisfactory – 2	FAIL
4 – pass 5 – highly pass	Satisfactory – 3	PASS
6 – good 7 – very good	Good – 4	
8 – almost excellent 9 – excellent 10 – perfect	Excellent – 5	

The final grade, which is the resultant grade for the course, goes to the certificate of Master's degree.

7. Guidelines for Knowledge Assessment

Type of grading	**Type of work**	**Characteristics**
Continuous	Multiple choice Tests	4 multiple choice test in class. Each test will cover two classes (10 questions)
Final	Exam	Multiple choice test (40 questions covering the whole course)

8. Methods of Instruction

The following educational technologies are used in the study process:

- Lectures involving continuous use of multimedia presentations and on-line simulations
- Seminars involving team oral discussions
- Self-study of presentation
- Self-study of recommended literature

Course lecturer is advised to use interactive learning methods, which allow participation of the students, such as discussions. It is also expected that multimedia presentations and video materials will be intensively used for the study process.

Students are required to study the presentations, which will be posted on the LMS educational portal, and the recommended reading. Students are required to actively participate in oral discussions during seminars and to take all tests.

9. Special Equipment and Software Support (if required)

The course requires a computer or laptop, projector, and acoustic systems for multimedia presentations and video.