

UNIVERSITY OF NICOSIA

Course Code EDUP-133	Course Title Mathematics Concepts in Pre-school Age	ECTS Credits 6
Department Paedagogical studies	Semester Fall	Prerequisites None
Type of Course Required	Field Mathematics	Language of Instruction Greek
Level of Course Undergraduate	Year of Study First	Lecturer(s) Dr Nicholas Mousoulides

Course Objectives:

The purpose of this course is to provide teachers with an overview of the basic theoretical trends in Psychology concerning the development of pre-mathematical concepts in early childhood. The course also focuses on the importance of language in the development of the first mathematical concepts. The course also aims to provide a critical analysis of the Arithmetic of the Natural numbers and provide teachers with opportunities to solving related problems.

Learning Outcomes

Upon completing the course students should be able to:

- Demonstrate a sound understanding of the basic theoretical trends in cognitive psychology concerning the development of pre-mathematical concepts.
- Demonstrate a sound understanding of the mathematical concepts taught at the pre-school level.
- Demonstrate ability to apply concepts and processes from natural numbers in solving relevant problems.
- Demonstrate ability to design activities for teaching pre-mathematical concepts.

Course Content

1. Cognitive psychology and mathematics teaching and learning at the preschool level.
2. Language and the development of the first mathematical concepts
3. Pre-mathematical concepts.
4. Patterns
5. Geometry
6. Probability and statistics
7. Problem Solving

Learning Activities and Teaching Methods:

Lecture, individual and group work, lab work, video analysis, student presentations

Assessment Methods:

Formative assessment (Midterm and Final Exams), Collaborative work, Presentations, Discussions
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Required textbooks/reading:

Tzekaki, M. (2005). *Mathematical Activities for the Preschool Students*. Athens: Gutenberg.

Recommended Textbooks/Reading:

Zacharos, K. (2007). *Mathematical concepts in preschool education and their teaching*. Athens: Metaixmio.