School of Education
Course Unit Syllabus

Level of qualification:
Professional Degree (EQF level 5)
Study cycle:
Childcare

Course Unit: **223001 – Fundamentals of Mathematics**

Year 1 **Semester 1** **ISCED Code: 461** **ECTS: 5**

Tipe of Course Unit: Compulsory **Delivery Mode:** Face-to-face **Language of Instruction:** Portuguese

COURSE COORDINATOR: Carla Maria Lopes da Silva Afonso dos Santos

HOURS OF WORK

TOTAL HOURS	Contact Hours								Hours in autonomous work
	Theory	Theory and practice	Practical and laboratory work	Field work	Seminar	Internship	Tutorial guidance	Other	
90		**45**							**45**

Prerequisites (if applicable): Not applicable

LEARNING OUTCOMES (knowledge, skills and competence)

Promote Mathematics like, in particular to encourage the articulation between this subject and the real life and the importance of Mathemativs in the development of the individual as a citizen.

- To take over of terminology and the specific language of mathematics.

- To develop the learning of the concepts and techniques of mathematical processes involved in the teaching of Mathematics.

- Recognize the importance and usefulness of Mathematics, in combination with other areas of knowledge, for the understanding of situations in everyday life.

CONTENTS

SETS AND LOGIC: Describing the sets. Subsets. Operations with sets. Mathematical Logic and Reasoning. Logical operations

NUMBERS AND OPERATIONS: Correspondences. Equipotent sets. The counting. Natural Numbers. The ordering of natural numbers. Operations with natural numbers.

GEOMETRY IN THE PLANE AND IN SPACE: Geometric elements: point, line, ray, line segment, angle. Polygons. Circumference and circle. Polyhedra-prisms and pyramids. Cone, cylinder and sphere.

MATHEMATICS AS PROBLEM SOLVING

DEMONSTRATION OF THE CONTENTS COHERENCE WITH THE COURSE UNIT'S LEARNING OUTCOMES

Mathematics per se and in articulation with other areas of knowledge is an essential dimension in the training of future professionals whose function involves carrying out activities with children for the development of different languages and literacies.

TEACHING METHODOLOGIES

Mixed expository classes (with diversified means: oral, written and multimedia projection).

Resolution of exercises and problems, whenever possible, related with daily life

Group work (research)

Individual works

DEMONSTRATION OF THE COHERENCE BETWEEN THE TEACHING METHODOLOGIES AND THE LEARNING OUTCOMES

The diversification of the teaching methods adopted allows, on the one hand, an adaptation to the subjects under study, on the other, to serve as an example for the student to become aware of the different possible approaches to the themes and their connection with everyday life.

EVALUATION METHODS

Individual written tests and group and individual assignments.

MAIN BIBLIOGRAPHY

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CORBALÁN, F. (2007). Matemáticas de la vida misma. Barcelona: Editorial GRAÓ.

Oliveira, A. F. (2010) Lógica & Aritmética. Gradiva.

PALHARES, P. (org.)(2004). Elementos de Matemática para professores do Ensino Básico. Lisboa: LIDEL

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