

Course Unit	-	Field of study	-				
Master in	Teaching of the First Cycle, Mathematics and Natural Sciences in the Second Cycle		School	School of Education			
Academic Year	2023/2024	Year of study	1	Level	2-1	ECTS credits	6.0
Type	Semestral	Semester	2	Code	5044-763-1204-00-23		
Workload (hours)	162	Contact hours	T - <input type="checkbox"/> TP 39 PL - <input type="checkbox"/> TC - <input type="checkbox"/> S - <input type="checkbox"/> E - <input type="checkbox"/> OT 15 O - <input type="checkbox"/>				

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Cristina Maria Mesquita Gomes, Paulo Miguel Mafra Gonçalves

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Relate the importance of scientific culture in the formation of individuals and the role of education in science in the early years of schooling.
2. Discuss the importance of alternative conceptions in the formation of concepts.
3. Discuss contributions to the successful learning of the CTSA approach (science, technology, society and environment).
4. Justify different strategies as suggested activities for teaching practice of Environmental Studies.
5. Designing and implementing practical/experimental activities for Environmental Studies in basic education.
6. Evaluate teaching and learning activities implemented in the context of the classroom.
7. Reflect on the role of assessment in the teaching-learning process of the 1st Cycle of Basic Education.
8. Analyse results of recent investigations within the 1st Cycle of Basic Education.

Prerequisites

Before the course unit the learner is expected to be able to:
No pre-requisitos.

Course contents

1. Fundamentals of learning in basic education - learning theories and teaching models; 2. Pedagogical practice and school success; 3. Assessment of students' learning - guiding principles of assessment.

Course contents (extended version)

1. Foundations of learning in basic education - theories of learning and teaching models:
 - Perspectives on teaching: From transmission To the research;
 - The movement of alternative conceptions - Assumptions and objectives;
 - The alternative conceptions and the construction of concept - Conceptual change models;
 - The paradigm of constructivist/socio-constructivist learning.
2. Pedagogical practice and school success:
 - Discussion, development and design activities adapted to basic education;
 - Characteristics of teaching practice more conducive to student success.
3. Assessment of children's learning: guiding principles:
 - Functions of evaluation: different methods and assessment tools;
 - Classification of learning and development of evaluation matrices.

Recommended reading

1. Fernandes, I. et al. (2017). Las relaciones entre Ciencia, Tecnología, Sociedad y Ambiente en los libros de texto de Educación Primaria. Revista Eureka Enseñanza y Divulgación de Ciencias 4(1), 54-68.
2. Harlen, W. (2006). Teaching, Learning and assessing science 5-12 (4ª ed). Sage Publications.
3. Pires, D., & Martins, A. (2020). Aprendizagem Cooperativa: um contributo para o desenvolvimento competências cognitivas e sociais. In Membiela, Cebreiros e Vidal. Educação Editora.
4. Pires, D. et al. (2016). O ensino experimental como estratégia de abordagem das ciências. In Membiela, Casado e Cebreiros. Nuevos escenarios en la docencia universitaria. Educación Editora.
5. Silva, S. P. S. F. (2016). O Estudo do Meio: uma área integradora- Perspetivas de um grupo de profs. ISEC.

Teaching and learning methods

1. Debate and discussion; 2. Critical reflection; 3. Group work; 4. Realization of practical/experimental activities adapted of 1º th cycle of basic education; 5. Design of assessment instruments adapted to basic education students.

Assessment methods

1. Continuous evaluation - (Regular, Student Worker) (Final)
 - Development Topics - 50% (Written test.)
 - Intermediate Written Test - 50% (Group work and with individual discussion.)
2. Rating by exam - (Regular, Student Worker) (Supplementary, Special)
 - Final Written Exam - 50% (Final written examination on the contents of the interim written test.)
 - Development Topics - 50% (Group work and with individual discussion (frequency evaluation).)

Language of instruction

Portuguese

Electronic validation

Cristina Maria Mesquita Gomes, Paulo Miguel Mafra Gonçalves	Orlando Miguel Pina Gonçalves Martins Gama	Manuel Celestino Vara Pires	Carlos Manuel Costa Teixeira
14-02-2024	14-02-2024	14-02-2024	18-02-2024