

Course Unit	Option III - Mathematics and Technology		Field of study	Training in Teaching Area	
Bachelor in	Basic Education		School	School of Education	
Academic Year	2022/2023	Year of study	3	Level	1-3
Type	Semestral	Semester	2	ECTS credits	3.0
Code	9853-531-3205-11-22				
Workload (hours)	81	Contact hours	T -	TP 27	PL -
			TC -	S -	E -
			OT 9	O -	

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)

#### Learning outcomes and competences

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

1. Identify digital educational resources that contribute to improving the teaching and learning process of mathematics.
2. Select strategies for the integration of ICT in teaching mathematics.
3. Evaluate digital resources to support teaching and learning of mathematics in terms of goals and content to develop mathematical process.
4. Use ICT to support teaching and learning of mathematics in diverse educational settings.

#### Prerequisites

Before the course unit the learner is expected to be able to:  
Not applicable.

#### Course contents

1. Concepts and strategies for integrating ICT in supporting the study of mathematics.
2. Exploration and evaluation of ICT in teaching and learning of mathematics.

#### Course contents (extended version)

1. Concepts and strategies for integrating ICT in supporting the study of mathematics
  - Digital resources in mathematics education: Concept and characteristics
  - Strategies for integration of ICT in the teaching and learning of mathematics
2. Exploration and evaluation of ICT in teaching and learning of mathematics
  - Selection and construction of digital resources for teaching and learning mathematics
  - Exploration and evaluation of the ICT to support learning of mathematics in diverse contexts

#### Recommended reading

1. Alves, T., & Carvalho, A. (Eds.) (2017). *Mídias digitais e mediações interculturais*. Amazon.
2. Fonseca, D., & Redondo, E. (Eds.) (2016). *Handbook of research on applied e-learning in engineering and architecture*. IGI Global.
3. Moreira, J., Barros, D., & Monteiro, A. (2014). *Educação a distância e eLearning na Web Social*. White Books.
4. Wilson, C., Grizzle, A., Tuazon, R., Akyempong, K., & Cheung, C.-K. (2013). *Alfabetização midiática e informacional: Currículo para formação de professores*. UNESCO/UFTM.

#### Teaching and learning methods

1. Exploration of themes using active learning methodologies, including project-based learning and problem-based learning.
2. Preparation of reports or research papers.
3. Discussion of topics in small or large groups.
4. Individual work or collaborative work.
5. Resolution of consolidation tasks of the topics covered in the course.

#### Assessment methods

1. Continuous assessment - (Regular, Student Worker) (Final)
  - Intermediate Written Test - 50% (Written summative test)
  - Work Discussion - 50% (Implementation and discussion of the proposed tasks or individual or group works)
2. Assessment by examination - (Regular, Student Worker) (Supplementary, Special)
  - Final Written Exam - 100%

#### Language of instruction

Portuguese

#### Electronic validation

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12-12-2022	19-12-2022	20-12-2022	02-01-2023