

Course Unit	Course Unit Information and Communication Technologies in Education			Field of study	General Education	
Bachelor in	Basic Education			School	School of Education	
Academic Year	2022/2023	Year of study	1	Level	1-1	ECTS credits 3.0
Туре	Semestral	Semester	1	Code	9853-531-1107-00-22	
Workload (hours)	81	Contact hours	T - TP	27 PL - T nd problem-solving; PL - Problem-	C - S - solving, project or laboratory; TC -	E - OT 9 O - Fieldwork; S - Seminar, E - Placement; OT - Tutorial; O - Other

#### Name(s) of lecturer(s) Maria Raquel Vaz Patrício

Learning outcomes and competences

- At the end of the course unit the learner is expected to be able to: 1. Understand the role of digital education in the development of skills for the 21st century and digital citizenship. 2. Promote digital competence and increase innovation in education.

- Explore emerging technologies and foresee their educational use.
   Understand the pedagogical and methodological foundations for innovative integration and the successful and efficient use of emerging technologies in education.
   Create innovative learning environments supported by digital technologies.
   Intensify knowledge in a lifelong learning perspective.

## Prerequisites

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

#### Course contents

Digital education. Emerging educational technologies. Pedagogical innovation with digital technologies.

#### Course contents (extended version)

- 1. Digital education

  - 21st. century skills Digital competence for educators / teachers Digital education and curriculum

- Digital education and curriculum
   Digital education and curriculum
   Emerging educational technologies
   Augmented, virtual and mixed reality
   Computational thinking, programming, and robotics
   Artificial intelligence and machine learning
   Pedagogical innovation with digital technologies
   Active learning methodologies
   Innovative learning environments

  - Innovative learning environments
     Emerging trends in education

## Recommended reading

- Lucas, M. & Moreira, A. (2018). DigCompEdu: quadro europeu de competência digital para educadores. UA.
   Ministério da Educação (2018). Orientações Curriculares para as TIC no 1.º CEB.
   OECD (2021). OECD Digital Education Outlook 2021: Pushing the Frontiers with Artificial Intelligence, Blockchain and Robots, OECD Publishing.
   Paniagua, A. & D. Istance (2018). Teachers as Designers of Learning Environments: The Importance of Innovative Pedagogies. Educational Research and Innovation, OECD Publishing.
   Vuorikari, R., Kluzer, S. & Punie, Y. (2022). DigComp 2.2, The Digital Competence framework for citizens: with new examples of knowledge, skills and attitudes. Publications Office of European Union.

#### Teaching and learning methods

Methods are active, flexible and guiding, promoting student autonomy, collaboration, critical and creative thinking, discussion and reflection. Learning is project-based through hands-on inquiry activities, exploration and use of digital technologies to innovate and enhance learning.

# Assessment methods

- Continuous Assessment (Regular, Student Worker) (Final)

   Portfolio 100% (Portfolio)

   Exame Assessment (Regular, Student Worker) (Supplementary, Special)

   Portfolio 100% (Portfolio presentation and discussion)

## Language of instruction

Portuguese, with additional English support for foreign students.

Electronic validation			
Maria Raquel Vaz Patrício	Manuel Florindo Alves Meirinhos	Maria Cristina do Espírito Santo Martins	Carlos Manuel Costa Teixeira
12-12-2022	12-12-2022	19-12-2022	05-01-2023