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Course Unit	Pedagogical Integration of Information and Communication Technologies			Field of study	Educational Sciences		
Master in	Information and Communication Technologies- Education and Training			School	School of Education		
Academic Year	2023/2024	Year of study	1	Level	2-1	ECTS credits	7.0
Type	Annual	Semester	-	Code	1083-622-1002-00-23		

Workload (hours)	189	Contact hours	T	5	TP	30	PL	-	TC	-	S	10	E	-	OT	18	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)	Manuel Florindo Alves Meirinhos

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
1. Understands the need to innovate through the curricular integration of ICT.
2. Explores innovatively available online teaching resources.
3. Develop and integrate the curriculum multimedia educational activities and other educational software.
4. Integrate in professional practice, emerging digital technologies.

Prerequisites

Not applicable

Course contents

The curriculum and ways of using ICT. Computational thinking. Development and exploration of multimedia educational activities. A new learning ecology.

Course contents (extended version)

1. The curriculum and ways of using ICT.
   - Use versus integration of ICT.
   - IT tools to support teaching.
   - Sftware support learning tools.
   - Levels of integration of technological resources and associated skills.
   - Procedures for pedagogical innovation.
   - Teachers' digital competence for ICT integration
   - Standards of teacher digital competence
2. Pedagogical exploitation of resources online.
   - Computational thinking
   - Framework of computational thinking in the school of skills
   - Computational thinking activities without offline
   - Programming tools for computational thinking (Scratch JR, Code. org, Scratch, . . .)
   - Educational robotics
   - Artificial intelligence in education (Pictoblox, Machine learning, Chatboots)
   - ICT for inclusion
3. Development and exploration of multimedia educational activities.
   - Edutainment and hard fun
   - Personalised software design in Jclic
   - Creation of educational activities in web 2. 0 tools
   - Exploration of some educational open source applications.
4. A new learning ecology
   - Inter and transdisciplinary project work
   - Problem solving and case studies
   - Challenge-based learning
   - Service Learning
   - Maker Spaces and teaching innovation labs
   - Flipped Classroom
   - Gamification
   - Hybrid learning
   - Mentoring
   - New forms of assessment of knowledge and skills
5. Assessment with digital technologies
   - Different digital instruments and forms of evaluation
   - Knowledge assessment
   - Assessment of attitudes
   - Assessment of skills

Recommended reading

1. Carneiro, R; Toscano, J. Diaz, T. (coord.) (2010). Los desafios de las TIC para el cambio educativo. OEI-Fundación Santillana: Madrid.
2. Cabero, J. e Barroso, J. (2013). Nuevos cenário digitales. Madrid: Pirámide.
3. UNESCO (2022). Guidelines for ICT in education policies and masterplans. https: //unesdoc. unesco. org/ark: /48223/pf0000380926
4. Lata, M. e Khatri, H. (2016). Educational Technology: Pedagogy and ICT Integration Across the Curriculum. Delhi: Shipra publications
5. Llorente, C. ; Roman, P. e Romero, R. (2014). Tecnologías en los entornos de Infantil y Primaria. Madrid: Sintesis.

Teaching and learning methods

The aim is to establish an immediate relationship between the theoretical knowledge and its application in practice. Immediate contact with equipment and programs is intended, so that learners develop appropriate materials for their students and implement them in concrete situations. This application must be accompanied by the teacher and followed by joint reflection by the trainee group.

Assessment methods

1. Continuous evaluation - (Regular, Student Worker) (Final)

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Assessment methods

- Practical Work - 50% (Individual practical works)
- Practical Work - 50% (Practical work in groups)
2. Final evaluation - (Regular, Student Worker) (Supplementary, Special)
- Final Written Exam - 100% (Exam)

Language of instruction

Portuguese

Electronic validation

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28-11-2023	28-11-2023	12-02-2024	18-02-2024