

Course Unit	-	Field of study	-
	-	School	School of Technology and Management
Academic Year	2022/2023	Year of study	1
Type	Semestral	Semester	1
Level		ECTS credits	2.0
Code	5062-717-1110-00-22		
Workload (hours)	54	Contact hours	<div>T</div> - <div>TP</div> - <div>PL</div> - <div>TC</div> - <div>S</div> - <div>E</div> - <div>OT</div> - <div>O</div> -

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) Paulo Jorge Pinto Leitão

Learning outcomes and competences

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

1. Know the importance and role of digital technologies in the context of the digital transformation.
2. Know several digital technologies and their typical applications, namely Internet of Things, Big Data, Artificial Intelligence, Cloud Computing, Virtual Reality and Collaborative Robotics.
3. Know the needs and challenges associated with learning and requalifying skills in digital technologies.

Prerequisites

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

Course contents

Digital technologies as pillars of digital transformation. Analysis of several digital technologies. Learning and requalification of skills in digital technologies.

Course contents (extended version)

1. Introduction to digital technologies.
 - Contextualization, definition, classification and application domains.
2. Digital technologies as pillars of digital transformation (4th industrial revolution).
3. Analysis of digital technologies.
 - Internet of Things.
 - Big data.
 - Artificial Intelligence.
 - Data analysis.
 - Cloud and edge computing.
 - Virtual and augmented reality.
 - Digital Twin/Simulation.
 - Collaborative and intelligent robotics.
 - Additive Manufacturing.
4. Learning and requalification of skills in digital technologies.
5. Development and discussion of research work.

Recommended reading

1. Artigos técnicos diversos sobre diferentes tecnologias digitais.
2. Vídeos diversos sobre as várias tecnologias digitais e suas aplicações.

Teaching and learning methods

Face-to-face hours: Exposition of the proposed topics. Realization of exercises, discussions and watching videos that help to consolidate the expected learning outcomes. Non-face-to-face hours: study of presented topics, realization of application exercises and discussion works.

Assessment methods

- Alternative 1 - (Regular, Student Worker) (Final, Supplementary, Special)
 - Intermediate Written Test - 25% (Related to quiz tests at the end of each 4-hour module.)
 - Development Topics - 75% (Includes the participation in the classes and the discussion of developed works.)

Language of instruction

Portuguese

Electronic validation

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08-11-2022	08-11-2022	22-11-2022