

Name	Circular Economy		Field of study	-	
Classification	Extracurricular Course/Project		School	Polytechnic Institute of Bragança	
Academic Year	2023/2024	Year of study	-	Level	-
Type	Semestral	Semester	1	ECTS credits	6.0
Code	9999-940-1026-00-23				
Workload (hours)	162	Contact hours	T	-	TP
			PL	-	TC
			S	-	E
			OT	-	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) Artur Jorge de Jesus Gonçalves, Jose Manuel Ribeiro Correia Afonso Santos, Paula Sofia Alves do Cabo, Sílvia Freitas Moreira Nobre

Learning outcomes and competences

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

- Identify the main concepts and mechanisms associated with the Circular Economy (CE) - Define CE strategies in the business context - Assess, discuss and present CE strategies

Prerequisites

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

Course contents

1 - Introduction to Circular Economy; 2 - Life Cycle Analysis and Circular Economy; 3 - Waste Management for a Circular Economy; 4. Circular Economy in the Company and New Business Models; 5 - Case Studies of Circular Economy.

Course contents (extended version)

1. Introduction to circular economy
 - Sustainable Development, Sustainability and Circular Economy
 - The Ellen MacArthur Foundation conceptual model
 - Circular Economy: definition and characteristics
 - Structuring Concepts related to the Circular Economy
 - The European Ecological Pact - EU Green Deal
2. Life Cycle Analysis and Circular Economy
 - Introduction to Life Cycle Thinking
 - Life Cycle Assessment Methodology
 - LCA and the Circular Economy
 - Ecodesign and Circular Economy
 - Eco-innovation, ecodesign and integrated product policy
3. Waste Management for a Circular Economy
 - Waste production
 - Waste or resources?
 - Practical and innovative cases in waste recovery
4. The circular economy in the company and new business models
 - Paradigm change and new values involved
 - Tools for Change Management
 - Fostering innovation from the perspective of circular philosophy
 - Integration of Industry 4. 0 and potential Business Models into circular philosophy
5. Project development

Recommended reading

1. Material MOOC Projeto Circular Labs
2. EMF (2012), "Towards the Circular Economy 1: Economic and Business Rationale for an Accelerated Transition"; January, Cowes, Isle of Wight: Ellen MacArthur Foundation.
3. EEA (2017), "Circular by design. Products in the circular economy". European Environmental Agency Report No 6/2017.

Teaching and learning methods

The teaching method includes weekly classes, with a brief presentation of the topics to be covered in the curriculum unit and the development of assignments with regular presentations. Additionally, students will work on a project in response to a circular economy challenge with the support of the curriculum unit's instructors.

Assessment methods

- Evaluation - (Regular, Student Worker) (Final, Supplementary, Special)
 - Practical Work - 50% (Practical works.)
 - Projects - 50% (Work sessions and development of a project to respond to Circular Economy challenges)

Language of instruction

1. Portuguese
2. English
3. Spanish

Electronic validation

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18-01-2024	19-01-2024