

Name	Challenge-Based Innovation	Field of study	-
Classification	Extracurricular Course/Project	School	Polytechnic Institute of Bragança
Academic Year	2025/2026	Year of study	-
Type	Semestral	Semester	1
Workload (hours)	162	Contact hours	T - TP - PL - TC - S - E - OT - O 60
		Level	-
		ECTS credits	6.0
		Code	9999-940-1006-00-25

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) Barbara Costa Vilas Boas Barroso, Claudia Cristina Silva Costa, Fernando Augusto Pereira, Ines Monteiro Barbedo de Magalhaes, Juliana Almeida de Souza, Pedro Miguel Monteiro Rodrigues, Celeste da Cruz Meirinho Antão, Vera Alexandra Ferro Lebres

Learning outcomes and competences

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

1. Demonstrate teamwork skills in transdisciplinary, multinational, multicultural, and co-creation environments;
2. Solve real challenges or problems from the community (companies and institutions) requiring innovation and a variety of competences;
3. Demonstrate project management skills using milestones and focusing in user value and business value creation;
4. Demonstrate communication skills in front of a wide audience.

Prerequisites

Before the course unit the learner is expected to be able to:
Communicate in English.

Course contents

Development of multidisciplinary projects based on real challenges or problems from the community (companies and institutions) requiring innovation and where a variety of competences are needed.

Course contents (extended version)

1. Transdisciplinary challenges development and management.
2. Problem solving of real challenges from the community;
3. Teamwork: Roles, values, competences
4. Understanding the Challenge- Stakeholder
5. Benchmark[Scientific; Statistic; Market; Human]
6. Brainstorming
7. Ideate and innovate.
8. Future scenarios Analysis
9. Solution validation;
10. Prototype.

Recommended reading

1. Stickdorn, M. , & Schneider, J. (2014). Isto é Design Thinking de Serviços: Fundamentos, Ferramentas, Casos. Bookman Editora.
2. Curedale, R. (2017). Design Thinking Process & Methods 4th Edition. Design Community College Incorporated
3. Plattner, H. , Meinel, C. , & Leifer, L. (2012). Design Thinking Research: Studying Co-Creation in Practice. Springer Berlin Heidelberg.
4. Vitorino, G & Mendonça, J. (2024). Design Thinking: da inspiração à inovação. Editora d'Ideias

Teaching and learning methods

Active learning methods, focused on the development of teamwork, using the digital collaborative tools

Assessment methods

- Continuous assessment. - (Regular) (Final)
- Projects - 100% (Project deliverables and communication skills.)

Language of instruction

1. English
2. Portuguese

Additional information

This curricular unit is conducted with the support of the platform <https://cocriacao.ipb.pt/> and facilitated by the WE (Work and Envision) community of teachers/facilitators within a broader ecosystem.

WE activities are guided by a set of fundamental values, including innovation, critical thinking, and a focus on solving complex, future-oriented challenges.

Co-creation projects at IPB play a key role in regional development, promoting collaboration between teachers, students of diverse nationalities and cultures, and local partners.

The proposed challenges aim to support and stimulate regional development. In this edition, the challenges are proposed by organizations in collaboration with the Municipality of Miranda do Douro.

In essence, co-creation initiatives at IPB are fundamental to driving regional development, expanding educational opportunities, and building strong partnerships that benefit both the community and the participants. By prioritizing innovation and collaboration, these projects lay the foundation for a sustainable and prosperous future.

Teams meet weekly and carry out a set of weekly activities according to the defined calendar and phases of the process:

Additional information

KICK-OFF
 - Context Canvas
 - Fieldwork Preparation Identify Stakeholders
 WE-VISIT: Visit to Miranda do Douro
 - Research Presentation
 WE-ENSIVION:
 - Benchmark check point
 - What already failed?
 - Benchmark review with feedback
 - Identify your guiding question
 - (Re)Definition of the problem to work on;
 - Definition of the team and plan of each element - remote deliverable
 - Insight Canvas
 - PESTEL
 - Brainstorm and solutions selection- presentation
 - Prototyping and testing - report and status report - remote deliverable
 IMMERSIVE WEEK: Testing and iterating
 WE-PICTH: Final Pitch (Public presentation)

Final Report delivery

Batch in collaboration with the Instituto Superior Técnico of Lisbon:17 students and 2 acilitators.

Electronic validation

Barbara Costa Vilas Boas Barroso, Claudia Cristina Silva Costa, Fernando Augusto Pereira, Ines Monteiro Barbedo de Magalhaes, Juliana Almeida de Souza, Pedro Miguel Monteiro Rodrigues	Vera Alexandra Ferro Lebres	Luis Manuel Santos Pais
11-12-2025	11-12-2025	12-12-2025

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