

Course Unit	Innovation and Technology	Field of study	Business Sciences
Master in	Entrepreneurship and Innovation	School	School of Technology and Management
Academic Year	2023/2024	Year of study	1
Type	Semestral	Semester	2
Workload (hours)	270	Contact hours	T - 40 TP 40 PL - TC - S 12 E - OT 18 O -
Level	2-1	ECTS credits	10.0
Code	5054-664-1202-00-23		

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) José Carlos Lopes, Luís Carlos Magalhães Pires, Paulo Jorge Aragao Guimaraes

### Learning outcomes and competences

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

1. Design a process of scientific research or technological development;
2. Understand the process of innovation and the creation of technology-based companies;
3. Know the processes and mechanisms for the protection of research results;
4. Design a business concept;
5. Formulate a business strategy and evaluate its potential;
6. Know the standards and mechanisms of certification, both national and international, for the processes of Innovation.

### Prerequisites

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

### Course contents

1. Innovation and Technological Evolution - Innovation Models; 2. Types of Innovation; 3. Scientific Research Process; 4. The Process of Management of Technological Innovation; 5. Innovation Strategies; 6. RDI Management System.

### Course contents (extended version)

1. Innovation and technological evolution - innovation models
  - Linear model of innovation
  - Interactive model of innovation
  - Model chain-linked
  - Third-generation innovation model
2. Types of innovation
  - Product Innovation
  - Process Innovation
  - Organizational innovation
  - Marketing innovation
3. Scientific research process
  - Fundamental research
  - Applied research
  - Experimental development
4. The technology innovation management process
  - Interface management
  - Knowledge management
  - RDI team management
  - RDI project management
  - Management of intellectual property
5. Innovation strategies
  - Internal creativity
  - Networking and open innovation
  - Formulation of innovation strategies
  - Design thinking
  - CANVAS Model
  - Business & E-commerce
6. RDI management system
  - Innovation scoring
  - Classification of RDI activities
  - RDI financing systems
  - Standards and instruments of RDI certification
  - RDI audit methodologies

### Recommended reading

1. Bessant, J. R., & Tidd, J. (2015). Innovation and Entrepreneurship (3rd Edition). Wiley.
2. Drucker, P. (2010). Technology, Management, and Society. Harvard Business School Publishing Corporation.
3. Osterwalder, A., & Pigneur, Y. (2013). Business Model Generation. Wiley & Sons.
4. Sørensen, F., & Lapenta, F. (2017). Research Methods in Service Innovation. Edward Elgar Publishing.
5. Trott, P. (2016). Innovation Management and New Product Development (6th Edition). Pearson.

### Teaching and learning methods

Learning strategies based on practice - Learn by doing, using collaborative work. Debates, Workshops and Seminars on the contents, ensuring the development of the skills needed for future leaders and entrepreneurs. Flipped classroom approach where students lead the learning process. Reading or watching publications about the course contents and essay writing.

### Assessment methods

- Continuous Assessment - (Regular, Student Worker) (Final, Supplementary, Special)
- Practical Work - 60% (Practical work related with the main contents of the curricular unit.)

**Assessment methods**

- Development Topics - 40% (Team working sessions with a discussion of topics on the development and management of the company.)

**Language of instruction**

English

**Electronic validation**

José Carlos Lopes, Luís Carlos Magalhães Pires	Joaquim Agostinho Mendes Leite	José Carlos Rufino Amaro
05-03-2024	05-03-2024	09-03-2024