centro adscrito a:

UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

EXECUTIVE MASTER IN SUPPLY CHAIN MANAGEMENT AND OPERATIONS MANAGEMENT

INNOVATION AND PORTFOLIO MANAGEMENT TEACHING GUIDE

[2022-2023]

GENERAL DETAILS

Name of module:	Innovation and Portfolio Management
Academic Year:	2022 – 2023
Degree:	Executive Master in Supply Chain Management and Operations Management
Number of credits (ECTS):	5
Date of latest revision:	November 2022
Lecturers in Charge:	Emilio Angles Isern

GENERAL DESCRIPTION

This module provides the key concepts of industry's digital transformation and the role of the enabling technologies of Industry 4.0 from an operational angle and how these technologies can help in the companies' innovation processes.

The syllabus encompasses digital transformation in an integral way and focuses on the use of the different enabling technologies of Industry 4.0 and their application to the industrial world, with a view to the increase in efficiency in operations and the productivity in industrial plants.

All sessions seek maximum interaction with the student, so that the contents can be adapted to the professional needs of each.

OBJECTIVES

- What is the digital transformation of companies, and how does this affect operations?
- Understanding the maturity model of digital transformation in order to apply it to your industry or business.
- The pillars of digital transformation.
- What is Industry 4.0?
- Getting to know Industry 4.0's enabling technologies.
- Identifying the main process where technologies 4.0 should be applied.
- Understanding how Industry 4.0 will affect the company's human resources.

CONTENTS

UNIT 1. Digital transformation in the company

Learning outcome

After going through the contents developed in this unit, students should be able to:

- Understand the role of the company's digital Transformation
- Understand the different aspects of digital transformation
- Link digital transformation to the company's maturity model.

Contents

1. Description of digital transformation
2. Key elements in industry's digital transformation

UNIT 2. The pillars of digital transformation

Learning outcome

After going through the contents developed in this unit, students should be able to:

- Identify the pillars of digital transformation
- Understand the principles of digital transformation
- Identify the challenges of digital transformation

Contents

1. Basic concepts in Cloud Computing, servers, networks, cybersecurity and applications
2. The role of the person in digital transformation
3. Real cases

UNIT 3. Economy 4.0

Learning outcome

After going through the contents developed in this unit, students should be able to:

- Get to know the origins of Industry 4.0
- Get to know the nature of the application of Industry 4.0
- The main objectives of economy 4.0
- Understand the extent of the impact of Industry 4.0

Contents

1. Stages and processes in the development of industry 4.0
2. Main objectives of economy 4.0

TEMA 4. Industry 4.0's enabling technologies

Learning outcome

At the end of this unit, students should be able to:

- Understand the impact of technologies 4.0
- Learn to value the challenges involved in the complexity of implementing technologies 4.0
- Availability of the decision elements to lend support to business from the point of view of the implementation of enabling technologies 4.0

Contents

1. Enabling technologies 4.0
2. Examples of the application of enabling technologies 4.0

4. TEACHING AND LEARNING METHODOLOGY

The teaching and learning methodology is developed from brief theoretical explanations that introduce examples and cases that facilitate an immediate application to the job of the contents covered in each topic. The deployment of the Learning by Doing model, based on experiential training, enables action-oriented learning to be obtained.

The subject is organised in such a way that students may obtain the knowledge of the different topics, put them into practice and develop a participative, proactive and critical attitude towards them. Hence, classroom sessions will be divided into theory and practice, and learning activities are introduced as an opportunity to complement the learnings obtained and assimilate them in greater depth.

5. ASSESSMENT

The Executive Modular Education programs are based on a competency assessment model, in which the progress of the students in achieving the objectives set out in the study program is assessed.

The evaluation system for this module aims to guarantee both the understanding of the contents and the student's ability to put them into practice, assessing progress and continued effort. Teaching staff will ensure the assimilation of the contents through the evaluable activities and the tutored project in the classroom.

6. BIBLIOGRAPHY

- **In pursuit of the perfect plant**. Pat Kennedy, Vivek Bapat, Paul Kurchina. Ed.Evolved Technologist Press
- **The big nine**. Amy Webb. Ed. Public Affairs