1. OVERVIEW

Subject area	Project: Organisation in the Smart Industry I
Degree	Bachelor's Degree in Industrial Organisation Engineering
School/Faculty	Faculty of Science, Engineering and Design
Year	3º
ECTS	9
Type	Compulsory
Language(s)	Spanish
Delivery Mode	On campus
Semester	1

2. INTRODUCTION

This subject involves a real project where students apply their knowledge from other subjects such as Skills Development.

The project will be set by a coordinating professor in the subject with the help of specialist lecturers in related subjects. The aim is for students to put into practice the knowledge acquired in the learning syllabus.

This project has a basic common syllabus made up of the content described. However, additional content may be included if a particular project requires it. Students will be able to propose a specific field of application.

For the final assessment students will present a record of the project, describing the work done and the prototype developed. It will also be necessary to defend the project to an audience including the subject coordinator. These may include professors from related subject areas.

3. SKILLS AND LEARNING OUTCOMES

Basic skills (CB, by the acronym in Spanish):

- CB1 - Students have shown their knowledge and understanding of a study area originating from general secondary school education, and are usually at the level where, with the support of more advanced textbooks, they may also demonstrate awareness of the latest developments in their field of study.
- CB2 - Students can apply their knowledge to their work or vocation in a professional manner and possess the skills which are usually evident through the forming and defending of opinions and resolving problems within their study area.
- CB3 - Students have the ability to gather and interpret relevant data (usually within their study area) to form opinions which include reflecting on relevant social, scientific or ethical matters.
- CB4 - Students can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.
- CB5 - Students have developed the learning skills necessary to undertake further study in a much more independent manner.

Cross-curricular skills (CT, by the acronym in Spanish):

- CT2 - Independent learning: skills for choosing strategies to search, analyse, evaluate and manage information from different sources, as well as to independently learn and put into practice what has been learnt.
- CT3 - Teamwork: ability to integrate and collaborate actively with other people, areas and/or organisations to reach common goals.
- CT4 - Written/spoken communication: ability to communicate and gather information, ideas, opinions and viewpoints to understand and be able to act, spoken through words or gestures or written through words and/or graphic elements.
- CT5 - Analysis and problem-solving: be able to critically assess information, break down complex situations, identify patterns and consider different alternatives, approaches and perspectives in order to find the best solutions and effective negotiations.
- CT6 - Adapting to change: be able to accept, consider and integrate different perspectives, adapting your own approach as required by the situation at hand, and to work effectively in ambiguous situations.
- CT7 - Leadership: be able to direct, motivate and guide others by identifying their skills and abilities, in order to effectively manage their development and common interests.
- CT8 - Entrepreneurial spirit: ability to take on and carry out activities that generate new opportunities, foresee problems or lead to improvements.

Specific skills (CE, by the acronym in Spanish):

- CE08 - Ability to use basic knowledge of production and manufacturing systems in industrial organisation processes.
- CE13 - Ability to apply design and management techniques and tools to control production and operations in industrial organisation.
- CE14 - Ability to apply knowledge of quality and environmental management systems in the field of industrial organisation engineering.
- CE18 - Ability to organise, complete and defend a project in the field of industrial organisation engineering.

Learning outcomes (RA, by the acronym in Spanish):

- RA1 - Carry out a group project which includes effectively solving industrial organisation problems in the Smart Industry. These may include operations design or management, logistics or supply chain management.
- RA2 - Perform an economic analysis and a social and environmental impact study.
- RA3 - Gather information relative to the project field and analyse and synthesise it to understand its field of application.
- RA4 - Apply agile methods to develop projects, plan tasks, assign responsibility, deadlines and end products.
- RA5 - Hold work meetings where students use critical thinking to reflect on where they and their colleagues stand. Propose innovative solutions and develop objective arguments which lead to a unified decision-making process.
- RA6 - Adapt to new situations by reconsidering ideas and reformulating them to reach the final objective in the most suitable way.
- RA7 - Draw up a well-structured report.
- RA8 - Present the results to a specialised audience.
- RA9 - Defend the quality of the project before a non-specialised audience using explanatory videos of very short duration.

The following table shows how the skills developed in the subject area match up with the intended learning outcomes:

Skills	Learning outcomes (RA, by the acronym in Spanish)
CB1, CB2, CT2, CE8, CE13, CE14, CE18	RA1 - Carry out a group project which includes effectively solving industrial organisation problems in the Smart Industry. These may include operations design or management, logistics or supply chain management.
CB3, CE14	RA2 - Perform an economic analysis and a social and environmental impact study.
CB1, CB2	RA3 - Gather information relative to the project field and analyse and synthesise it to understand its field of application.
CT2, CE14	RA4 - Apply agile methods to develop projects, plan tasks, assign responsibility, deadlines and end products.
CT3, CT4, CT7, CT8	RA5 - Hold work meetings where students use critical thinking to reflect on where they and their colleagues stand. Propose innovative solutions and develop objective arguments which lead to a unified decision-making process.
CT3, CT5, CT6	RA6 - Adapt to new situations by reconsidering ideas and reformulating them to reach the final objective in the most suitable way.
CT4	RA7 - Draw up a well-structured report.
CB2, CB4, CB5, CT4	RA8 - Present the results to a specialised audience.
CB2, CB4, CB5, CT4	RA9 - Defend the quality of the project before a non-specialised audience using explanatory videos of very short duration.

4. CONTENTS

This subject area deals with the following topics:

- Logistics operations design,
- Distribution models,
- Supply chain management in the Smart Industry.

5. TEACHING/LEARNING METHODS

The types of teaching/learning methods are as follows:

- Master lectures
- Collaborative learning
- Problem-based learning
- Project-based learning
- Case study
- Gamification
- Field work (field trips, work experience)

6. LEARNING ACTIVITIES

The types of learning activities, plus the amount of time spent on each activity, are as follows:

Learning activity	Number of hours
Master lectures	22.5
Problem-solving	7.5
Case studies and field studies	7.5
Integration projects	95
Debates and discussions	12
Learning contract (definition of interests, needs and objectives)	3
Autonomous learning	54.5
Tutorials	20
Knowledge tests	3
TOTAL	**225**

7. ASSESSMENT

The assessment systems, plus their weighting in the final grade for the subject area, are as follows:

Assessment system	Weighting
Assessment of attitude (attitude assessment rubrics, class participation)	10%
Self- and Peer-assessment (learning contract, learning objectives)	30%
Project journals (integrated projects, degree dissertation)	35%
Presentations and defence of projects (integrated projects, degree dissertation)	25%

On the Virtual Campus, when you open the subject area, you can see all the details of your assessment activities and the deadlines and assessment procedures for each activity.

8. BIBLIOGRAPHY

- La Guía de los Fundamentos para la Dirección de Proyectos (Guía del PMBOK®). Project Management Institute, Inc.
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- Manners-Bell, John. (2019). Technical Note on Future of Logistics. Inter-American Development Bank.
- Informe de Valoración Logística ANFAC 2020
- ECG-IRU Joint statement on e-CMR