Universidad Zaragoza

Academic Year/course: 2022/23

29976 - Managing the firm 4.0

Syllabus Information

Academic Year: 2022/23
Subject: 29976 - Managing the firm 4.0
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 430 - Bachelor's Degree in Electrical Engineering
434 - Bachelor's Degree in Mechanical Engineering
435 - Bachelor's Degree in Chemical Engineering
436 - Bachelor's Degree in Industrial Engineering Technology
438 - Bachelor's Degree in Telecomunications Technology and Services Engineering
439 - Bachelor's Degree in Informatics Engineering
440 - Bachelor's Degree in Electronic and Automatic Engineering
470 - Bachelor's Degree in Architecture Studies
476 -
558 - Bachelor's Degree in Industrial Design and Product Development Engineering
581 - Bachelor's Degree in Telecomunications Technology and Services Engineering
ECTS: 4.0
Year: 470 - Bachelor's Degree in Architecture Studies: 5
581 - Bachelor's Degree in Telecomunications Technology and Services Engineering: 3
434 - Bachelor's Degree in Mechanical Engineering: 4
440 - Bachelor's Degree in Electronic and Automatic Engineering: 4
439 - Bachelor's Degree in Informatics Engineering: 4
435 - Bachelor's Degree in Chemical Engineering: 4
430 - Bachelor's Degree in Electrical Engineering: 4
438 - Bachelor's Degree in Telecomunications Technology and Services Engineering: 4
436 - Bachelor's Degree in Industrial Engineering Technology: 4
476 - : XX
558 - Bachelor's Degree in Industrial Design and Product Development Engineering: 4

Semester: First semester
Subject Type: Optional
Module:

1. General information

1.1. Aims of the course

This course offers an overview of the technological changes that are transforming the value chain of companies, their way of competing and their general environment. The students will acquire management tools to lead the digital transformation of a company based on the disciplines of innovation management and management of organizational change.

These approaches and objectives are aligned with some of the Sustainable Development Goals, SDGs, of the 2030 Agenda (https://www.un.org/sustainabledevelopment/en/) and certain specific goals, in such a way that the acquisition of the learning outcomes of the subject provides training and competence to the student to contribute to a certain extent to their achievement

9. Build resilient infrastructure, promote sustainable industrialization and foster innovation
Target 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

1.2. Context and importance of this course in the degree

Introduces the students into advanced management concepts related to innovation and the disruptive advances that are taking place in industrial production processes. It is a complement to the technical knowledge acquired by the student throughout his degree and an expansion of the skills as a manager that the student has acquired in previous courses in this field.

1.3. Recommendations to take this course

To have interest in the topics of product and process innovation in the manufacturing and ICT fields. To have disposition to work on sources from various origins, academic and professional, in English, which will be the working language in the subject.

2. Learning goals

2.1. Competences

Manages, identifies opportunities and leads business transformation to the digital world

Time management and teamwork skills
Skills to defend your ideas in English

2.2. Learning goals

The student identifies business opportunities in the new economic and business environment.
Identifies the needs of digital transformation in existing companies.
Takes advantage of open innovation in the company.
Designs strategies for enhancing innovation against competitors.
Designs strategies for the appropriation of value.
Identifies the need for change in the organization and leads those changes.
Designs the organization in accordance with the company's strategy

2.3. Importance of learning goals

Engineers play a transforming role in society. We must adapt the profile of the students to the new environment in which they will have to carry out their professional activity. The present subject aims to train their management skills in an increasingly digitized and automated environment.
Robotics and automation, artificial intelligence, big data, augmented reality and the Internet of things are just some of the levers of change that are already taking place.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

We assess student learning globally (knowledge and skills).
Gradual evaluation: continuous work is recommended and will be assessed by the gradual evaluation system. The teachers will use the following combination to evaluate the acquisition of the competences by the student:
1. Resolution of cases and seminars (60%) The degree of preparation by the student, the quality of his oral presentation and the ability to defend his arguments. Cases will be solved preferably with the entire group of students, and this requires prior student's personal work.
2. Exam (40%) The understanding of the subject and the ability to connect different parts are evaluated. It will take place on the date set by the School.

Global evaluation: Students who have not passed the gradual evaluation must take a final global test consisting of: Delivery of an essay for each of the cases, readings and exercises carried out during the course. Oral defense of two of the essays chosen by the teachers. Exam of knowledge about the subject.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

This is a student-centred course. Competencies as time management, teamwork, and the ability to defend their ideas are explained, applied and evaluated, both in-group and individual activities.

The resolution of cases and seminars is the main teaching and evaluating activity.

4.2. Learning tasks

The distribution of hours between the different activities planned in the course is shown in the following table:
Master classes 10h
Problem solving and cases 30h
Personal work (preparation of cases and seminars) 37h
Personal study 20h
Assessment tests (exam) 3h
Total 100h

4.3. Syllabus

Topic 1. Introduction to innovation management
Topic 2. Appropriation of the value of innovation
Topic 3. Dominant designs and technological standards
Topic 4. Open innovation and absorptive capacity
Topic 5. Managing digital transformation
Topic 6. The organization of the digital company
Topic 7. The strategy of the company in the digital economy

4.4. Course planning and calendar

Information about class schedules and exams calendar can be found on the website of the School of Engineering and Architecture: http://eina.unizar.es

4.5. Bibliography and recommended resources

This bibliography serves as a general reference, but most of the contents will be based on recent articles and cases that will be offered to students throughout the course through the platform Moodle.

http://biblos.unizar.es/br/br_citas.php?codigo=29980&year=2020