

Academic Year/course: 2021/22

30132 - Management of Innovation and Technology Policy

Syllabus Information

Academic Year: 2021/22

Subject: 30132 - Management of Innovation and Technology Policy

Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia

Degree: 425 - Bachelor's Degree in Industrial Organisational Engineering

ECTS: 6.0

Year: 4

Semester: First semester

Subject Type: Compulsory

Module:

1. General information

1.1. Aims of the course

The aim of the course is to provide students with a solid basis in the field of the application of innovation and technological change in organizations.

These approaches and objectives are in line with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>), in such a way that the acquisition of the course learning outcomes provides training and competence to contribute to their achievement to some degree.

4. Quality education.

4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

8. Decent work and economic growth.

8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.

9. Industry, innovation and infrastructure.

9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending.

1.2. Context and importance of this course in the degree

The course enables students to apply the knowledge acquired in other previous subjects, both with an economic, and techno-scientific nature, which will provide them with the skills and knowledge to give a better performance. Students are expected to identify technologies and knowledge about which he should keep an autonomous contact that will allow them to work out project-like solutions, to complex problems from a strategic management perspective.

1.3. Recommendations to take this course

The usual ones to access the studies of any engineering degree, basically having completed the scientific-technological baccalaureate and knowledge of economic management.

2. Learning goals

2.1. Competences

Upon passing the subject, the student will be more competent to ...

C27 Lead the technological change of organizations, particularly within the framework of public innovation systems and in the field of Defense.

C02 Plan, budget, organize, direct and control tasks, people and resources.

C03 Combine general and specialized engineering knowledge to generate innovative and competitive proposals in the professional world.

C04 Solve problems and make decisions with initiative, creativity and critical thinking.

C05 Apply information and communication technologies in Engineering.

C06 Communicate and transmit knowledge, abilities and skills in Spanish, adapting the scientific-technical level to the audience.

C09 Work in a multidisciplinary group and in a multilingual environment.

C11 Keep a lifelong learning approach and develop self-learning strategies.

2.2. Learning goals

The student, to pass this subject, must demonstrate the following outcomes ...

1. Design and implement strategies for innovation and technological development in organizations.
2. Design and implement technological surveillance systems to stand up against competitors and to take advantage of business opportunities in the market. Use patent systems as a means of protecting innovation and as an identification of competitive opportunities.
3. Carry out technological audits to diagnose the comparative situation of the organization with their competitors.
4. Design and implement effective technology transfer systems to improve the organization's competitiveness.
5. Learn about the keys of success and failure in the development and adoption of product and process innovations in organizations.
6. Know how to evaluate and select the most suitable R + D + i proposals in accordance with the technological innovation strategy.
7. Manage the development of innovation activities in the organization (new products and processes) identifying the appropriate course of action for its correct planning and management.
8. Know how to plan and decide early cancellations for the development of technological innovations.
9. Learn about the principles of training and management of multidisciplinary teams of human resources for the development of innovations.
10. Learn about the structure of public innovation systems in which organizations will develop technological innovations.
11. Establish and manage technological cooperation agreements with other economic agents (companies and research centers).
12. Know and be able to use the external sources of financing available in public innovation systems to carry out innovation activities.
13. Prepare proposals for innovation and technological development activities for national and international R & D & i plans.

2.3. Importance of learning goals

This course prepares students for professional performance in an organization that innovates, faces changes and must

continually adapt to new situations from a management and strategic view. Specifically:

1. Manage their experience and their own knowledge, as well as that of members of their organization, to achieve operational improvements, brainwave proposals and innovative alternatives to improve production and organizational systems.
2. Plan changes that improve global systems based on scientific-technical and management knowledge.

3. Assessment (1st and 2nd call)

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

The assessment of the subject provides for a split assessment system and a global final assessment system.

1. Split assessment system.

The split assessment system will have the following group of grading activities:

- **Individual activities in class:** The solving of theoretical and practical exercises in class will account for 10% of the final grade for the course. The active participation of the student will be taken into account, answering the questions posed by the teacher during the teaching period and the marks of the theoretical-practical exercises posed and handed in on site. All activities will account for the same proportion of the global mark of that block, being graded from 0 to 10 points.

At least 80% of the classroom activities (practice tasks, technical visits, classes, etc.) must be attended.

- **Posed work:** The teacher will pose the completion of a compulsory work in a group of three students maximum. The approach and appropriate development, the writing and coherence of what was discussed, as well as the achievement of results and the final conclusions reached, will be valued. This activity will account for 90% of the final grade for the course. In order to take this mark into account, the papers must be handed in on the specified dates

As a summary of the aforementioned, the following weight table of the grading process of the different activities, in which the split evaluation process of the course is based on, has been designed.

Assessment activity Weighting

Individual activities in class 10%

Posed work 90%

Prior to the first call, the teacher of the subject will notify each student whether or not they have passed based on the use of the split assessment system, based on the addition of the marks obtained in the different activities carried out, each accounting for a minimum of 50%. In case of not passing in this way, the student will have two additional calls to do so (global assessment test). On the other hand, the student who has passed the course, may also choose the final assessment, first call, to improve their grade, but never to lower it.

2. Global final assessment test.

The student must opt for this modality when, due to their personal situation, they cannot adapt to the rhythm of work required in the split assessment system, have failed or would like to increase their grade having participated in that assessment methodology. The global final assessment test will include the following grading activities

- **Written exam:** This test will include theoretical and / or practical questions of the different issues to be evaluated. The test will consist of 4 or 5 theory and applied theory questions. This activity will account for 100% to the final grade for the course. Only one test with representative questions of the issues will be taken.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The learning process designed for this subject is based on the following: Strong interaction between the teacher/student. This interaction is brought into being through a division of work and responsibilities between the students and the teacher. Nevertheless, it must be taken into account that, to a certain degree, students can set their learning pace based on their own needs and availability, following the guidelines set by the teacher. The current subject Management of innovation and technology policy is conceived as a stand-alone combination of contents,

yet organized into three fundamental and complementary forms, which are: the theoretical concepts of each teaching unit and the solving of problems or the resolution of questions, at the same time supported by other activities. The organization of teaching will be carried out using the following steps:

- Lectures: Theoretical activities carried out mainly through exposition by the teacher, where the theoretical supports of the subject are displayed, highlighting the fundamental, structuring them into topics and or sections, interrelating them.
- Practice Sessions: The teacher resolves practical problems or cases for demonstrative purposes. This type of teaching complements the theory shown in the lectures with practical aspects.
- Individual Tutorials: Those carried out giving individual, personalized attention with a teacher from the department. Said tutorials may be in person or online.

If classroom teaching were not possible due to health reasons, it would be carried out on-line.

4.2. Learning tasks

The course involves the active participation of the student, in a way that the results achieved in the learning process are developed and includes the following learning tasks:

- **Face-to-face generic activities:**
 - * **Theory Classes:** The theoretical concepts of the subject are explained and illustrative examples are developed as a support to the theory when necessary.
 - * **Practical Classes:** Problems and practical cases are carried out, complementary to the theoretical concepts studied.
 - **Generic non-class activities:**
 - * Study and understanding of the theory taught in the lectures.
 - * Understanding and assimilation of the problems and practical cases solved in the practical classes.
 - * Preparation of seminars, solutions to proposed problems, etc.
 - * Preparation of summaries and reports.
 - * Preparation of the written tests for continuous assessment and final exams.
- The subject has 6 ECTS credits, which represents 150 hours of student work in the subject during the trimester, in other words, 10 hours per week for 15 weeks of class.

4.3. Syllabus

The course will address the following topics:

- Innovation
- The innovative process
- Company strategy and technology strategy
- Creativity
- Technological surveillance
- Technology foresight
- The management of research, development and innovation projects
- Protection of innovation
- The buying and selling of technology
- Cooperation between businesses
- Innovation support policies

4.4. Course planning and calendar

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Class hall sessions & work presentations timetable

The dates of the final exams will be those that are officially published at <https://eupla.unizar.es/asuntos-academicos/examenes>

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=30132>