Academic Year/course: 2023/24

29971 - Design workshop: Introduction to design engineering

Syllabus Information

Academic year: 2023/24
Subject: 29971 - Design workshop: Introduction to design engineering
Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
Degree: 558 - Bachelor's Degree in Industrial Design and Product Development Engineering
ECTS: 4.0
Year: 4
Semester: Second semester
Subject type: Optional
Module:

1. General information

The traditional concept of "Industrial Design" has been extended to "Product/Service Design". From this approach, the knowledge of the product users' needs is the core of the development process. For this purpose, the specialty of Design Engineering applies its own methods, and others that adapt knowledge from sociology, psychology or anthropology to the technical offices. Acronyms such as UX, HCD or PSS are already part of the vocabulary of engineering centres. From long time ago, Design is not limited to the aesthetic aspect of products, and Product Development involves more than the definition of components and technology. Product/Service Systems and their multidisciplinary and people-cantered approach are strategic in achieving the SDGs. The starting point is the exhaustive and empathetic knowledge of the needs of people, attending not only to the end user, but to all those involved. Then comes the conceptualization of solutions in processes of Applied Creativity in which the users themselves participate. Finally, we come to the Development looking for the best technological solution, and the Prototyping and testing of the proposed solutions.

2. Learning results

This innovation pattern is stated under models such as Human Centred Design or Design Thinking. It offers great potential to any professional in the field of engineering and architecture as it allows a transversal Product/Service Development, from its technological, communicative, ergonomic, emotional and market adequacy, so that competence in these matters is a growing demand among employers.

This subject will allow students of engineering and architecture profiles other than Design Engineering to learn about the specialty of this specific profile with which they will undoubtedly collaborate in the future, and to experience first-hand the contribution that their methods make to the field of innovation and product development. By taking this subject, the students of Engineering and Architecture Degrees other than the Industrial Design and Product Development Engineering Degree will obtain a general and basic vision of the theoretical and methodological principles that characterize and support the specialty of Design Engineering.

For this purpose, the subject will help them to know the basic principles that characterize the work models of Design Engineering, based on Human Centred Design, Applied Creativity, Design Thinking and Product/System/Service, among others

3. Syllabus

The program foreseen for this subject includes the following contents:

- Design Thinking and User-Centred Design.

- Phases and approach to the design process.

- Design of: product, graphic, services, PSS.

- Design methods.

- Applied creativity.

- Product development.

- Prototyping and testing processes.

4. Academic activities

The subject is based on the principles of project-based learning and has an eminently practical approach, despite the fact that it relies on the exposition of essential theoretical contents.

The planned academic activities consist of a series of theoretical sessions and case presentations (20h.) that guide the development of practical activities (20h.)

5. Assessment system

The teaching-learning process requires an evaluation approach that allows assessing the student's learning in a global way (knowledge and skills) . The evaluation of the subject is based on a combination of the following tasks:

Presentation and analysis of theoretical contents and/or cases by the students (up to 30% of the final grade).

Specific practices and project development (minimum 70% of the final grade).

Note: Following the regulations of the University of Zaragoza in this regard, a global evaluation test will also be scheduled for those students who decide to opt for this second system.