25822 - Design Methodology

Información del Plan Docente

Academic Year	2017/18
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	271 - Bachelor's Degree in Industrial Design and Product Development Engineering
ECTS	9.0
Year	4
Semester	First Four-month period
Subject Type	Compulsory
Module	---

1.General information

1.1.Introduction

The subject is the last and main core subject of project development of the degree. It should serve to apply to it the total of the knowledge acquired by the student throughout the preceding courses and especially in the subjects of Design Workshop I, II and III, and Creativity. This subject should be assumed prior to the completion of Final Year Thesis Work by the / the student step.

1.2.Recommendations to take this course

It is highly recommended that the student has passed the core and compulsory subjects of the three previous courses, and especially Design Workshop I, II, III, Creativity and Ergonomics.

The course is complemented by the subject Technical Office, performing complementary contents, and working in common in a Project module, so it is highly recommended that both subjects shall be followed at the same time.

1.3.Context and importance of this course in the degree

The subject is the most content (9 ECTS) within the first semester of the fourth year, and relates directly to the subject of Technical Office, so that the contents of both will be complementary to such an extent that different parts of the same project will be developed in the two subjects, by raising a draft module subjects.

Overcoming them will assume that the student is ready to undertake the end of studies in regard to their ability to take over and develop a project of industrial design and product development.

1.4.Activities and key dates

This course is eminently practical, and is based on the development of one or more projects in collaboration with companies throughout the semester. For this reason it will be established a number of key dates that coincide with the

most important milestones of the project: Release, presentation of the different stages of development, and final delivery at the end of the teaching period. The exact dates will be agreed with partner companies in each course in the subject, and will be defined at the beginning of the course and may undergo some adjustment or variation depending on the availability of such employees, so it is strongly recommended that / the students should constantly monitoring of the subject.

2.Learning goals

2.1.Learning goals

The student, for passing this subject, should demonstrate the following results:

The student, for passing this subject, must demonstrate that he/she is able to work together in teams in the development of an industrial design project for the realization of a product, within the context of the company.

More specifically, it must be able to perform project planning according to the requirements of a client company, prior to execution, and writing a specification that collect such planning.

From these specifications, he/she must be able to develop the project following planning proposal, being likewise able to develop phases of data collection and analysis, prior to the generation of concepts, documentation, drafting specifications project specifications, proposing innovative and creative proposals for product development, and to perform and complete technical definition for possible production.

All such work must be properly documented so as to ensure that the client company maintains the degree of necessary information and control over the project, and that the achievement of project objectives established in the planning and specification is ensured.

2.2.Importance of learning goals

The ability to apply the acquired knowledge to development of professional activity is one of the most important values that can get the student from his college training period. By working in this subject it is that capacity to be strengthen.

In addition, students will gain experience in the exercise of their activity in as close as possible to the real context, which in addition to the knowledge gained will provide them experience, confidence and security at the time to undertake their work, as a prelude to the start of their professional activity.

3.Aims of the course and competences

3.1.Aims of the course

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The subject and its expected results meet the following approaches and objectives:

The ultimate aim of the degree is to train professionals in industrial design and product development to be able to meet the different parts of the project within the context of the company. The various subjects of workshop projects previously developed to this, served to be developing and implementing such capacity, while they were acquiring all the basic and indispensable technical knowledge to meet increasingly complex and greater demands in projects. In this sense, the course aims to simulate as realistically as possible the work of a professional industrial design and product development, for what the students will work as a team within the context of a company to resolve a particular term project so that it meets a series objectives to be defined in advance, and following a methodology and pre planning.

3.2.Competences

Passing the course, students will be more competent to ...

The skills that the student will develop are those related to planning, project management and control of industrial design and product development in the context of the company. More concretely:

- Ability to plan the work of a team of people.

- Ability to collect and generate useful documentation for the project from various sources.

- Ability to dialogue with third parties, be they customers, employees or suppliers.

- Ability to manage and control the development and evolution of a project to ensure the achievement of predetermined targets.

All related to the development of the technical work and engineering necessary to define all the characteristics of a product to a point that allows to its possible industrialization and production.

In general, the subject participates in the acquisition of the following skills:

- Basic knowledge of the profession.

- Ability to learn.

- Ability to organize and plan.

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- Ability to manage information.

- Capacity for analysis and synthesis.

- Ability to generate new ideas.

- Ability to solve problems.

- Ability to apply knowledge to practice.

- Decision making.

- Oral and written communication skills.

- Responsibility at work.

- Motivation for work.

- Motivation to achieve goals.

- Capacity for teamwork.

- Interpersonal skills.

- Capacity for adapting to new situations.

- Ability to acquire an ethical commitment.

- Concern for quality and improvement.

4.Assessment (1st and 2nd call)

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

The student must demonstrate that it has achieved the intended learning outcomes through the following evaluation activities:

The student will develop one or more projects (depending on the type of project and partner companies can be a single project or other options) team which will provide between 80% and 100% of the total mark of the subject.

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These projects will be developed throughout the semester and along the same students will be performing partial presentations of results that will be evaluated, adding a series of notes which, on average, the overall rating of the note of practices will be obtained.

These presentations will be assessed the following sections:

- Project planning: Writing a valid specification for the start of the project conditions.

- Documentation and conclusions: depth, breadth and value for the project of information collected at the beginning of it and the analysis thereof.

- Writing a list of specifications prior to the conceptual design phase. Amplitude, accuracy and value to the project.

- Generation of concepts: level innovation, technical feasibility, potential profitability, quality of presentation of proposals.

- Formal Development of the selected proposal: Aesthetics, ergonomics, suitability for production processes, communication skills.

- Functional Development: Materials and processes, mechanical, electrical or other systems, definition of assembly sequences, environmental performance, use sequence, technical definition.

- Technical documentation: Level of development and value of it for production.

- Oral presentation of the finished project.

- Means used in the presentation of the completed project: Amplitude, their quality, communicative ability and value thereof from the point of view of efficiency.

The entire project will be delivered at the end of the teaching period to meet the requirements of continuous assessment, although those students who wish to improve their note or have chosen to anoint overall assessment may deliver the work involved in convening the examination period, in the latter shall notify as soon as possible the teacher of the subject, so that it can coordinate the execution of the work with the requirements of the partner companies.

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The learning process that is designed for this subject is based on the following:

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The course is based primarily on the development of one or more projects proposed by companies. Students work in teams, developing the project, with the support of the teachers of the subject and the subject in collaboration with Technical Office. Most classes consist of practical sessions for tutoring and monitoring the project, where different groups in a similar way is a company dedicated to industrial design and product development.

The course has a series of theoretical sessions, including lectures, presentations by professionals and will include visits to client company. The timing of the sessions will be presented in the first classes of the course and necessarily adapt to the availability of external collaborators in the subject.

5.2.Learning tasks

The program that is offered to the student to achieve the expected results includes the following activities:

In addition to the practical sessions, theoretical sessions will include the development of the following topics:

- Strategies project management company, project types.

- Multiproject and organization of working groups and resource management.

- Innovation Management.

- Design specifications.

- Industrial protection, patents and trademarks.

- Portfolio management and product range.

- Presentation of the product on the market.

- The exercise of free professional or business activity.

- Study of cases.

5.3.Syllabus

5.4.Course planning and calendar

It will be offered at the beginning of the course, and will be agreed with the / the students of the subject, depending on the availability of external collaborators.

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5.5.Bibliography and recommended resources