

## 25818 - Design workshop III

### Información del Plan Docente

<b>Academic Year</b>	2016/17
<b>Academic center</b>	110 - Escuela de Ingeniería y Arquitectura
<b>Degree</b>	271 - Bachelor's Degree in Industrial Design and Product Development Engineering
<b>ECTS</b>	6.0
<b>Course</b>	3
<b>Period</b>	First Four-month period
<b>Subject Type</b>	Compulsory
<b>Module</b>	---

### 1. Basic info

#### 1.1. Recommendations to take this course

To success in this subject it is essential to have studied the subjects Taller de Diseño I and II, which sets the basic block of methodologies to be developed ; also the subjects Creativity and Materials, whose knowledge is applied here , and in general , the other subjects of 1st and 2nd year , whose contents are applied directly to this subject . It is highly recommended to attend it at the same time or after the subject Process Manufacturing .

#### 1.2. Activities and key dates for the course

The subject applies project based learning (PBL) , and has a workload evenly distributed throughout the semester .

### 2. Initiation

#### 2.1. Learning outcomes that define the subject

The student, for passing this subject , should demonstrate the following results ...  
He/She is able to develop products satisfactory to an increasingly level of complexity .  
is capable of performing a relatively complex product development, in a technically satisfactory manner , in terms of definition of components , materials selection and production processes, cost estimation , etc.  
is able to perform a design project within a business environment, understanding the conditions that the company can strategy cally impose on the project .

is able to define design specifications and to work accordingly with them.  
is able to apply to projects various presentation techniques.

Begins to understand the importance of considering aspects such as range , product portfolio or catalog , or brand presence in the product.

#### 2.2. Introduction

The bulk of the course will be the development of practical projects , which will be tutored in practical classes of group

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work, and which also will accommodate various practices and exercises in the classroom .

Students will develop these projects with a greater degree of autonomy than the developed so far in the preceding subjects and with a greater degree of responsibility. It is intended that the largest possible part of the projects consist of actual proposals made by different industrial companies.

### 3.Context and competences

#### 3.1.Goals

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

The bulk of the course will be the development of practical projects, which will be tutored in practical classes work in groups, by teachers of the Department of Graphic Expression and the Department of Manufacturing Engineering Department of Design and Manufacturing. The aim is to put a special emphasis on solving problems associated with the assessment and definition of production processes for manufacturing the product. For that reason the course will be coordinated with the Manufacturing Process subjects, of the same term.

Students will develop these projects with a greater degree of autonomy than the developed so far in the preceding subjects and with a greater degree of responsibility. It is intended that the largest possible part of the projects consist of actual proposals made by different industrial companies.

The course will have a reduced number of lectures, which will include the presentation of contents with presentations and examples, and allow learning definitions, concepts, and various methodologies and theoretical approaches to discipline, and which also have different place practical content based on case analysis.

#### 3.2.Context and meaning of the subject in the degree

The subject arises as a continuation of the subjects Design Workshop I and II and Creativity, and is part of the group of subjects of PBL that forms a vertical axis in the development of the degree. In this course, the students acquired the necessary knowledge to deal with industrial design projects and receive more advanced training on issues related to product development (more specifically , it is proposed to emphasize the importance of a proper definition of production processes that the product will be manufactured ) , and project management , some of which will be fully developed in the electives that are offered in the degree, and Design Methodology 4th year , and , of course, Thesis Work .

#### 3.3.Competences

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

- Perform detailed design of products.
- Solve complex problems.
- Ask questions of a technical-productive area and testing within the context of project development evaluation.
- Development of projects of relatively complex industrial design.
- Conduct analysis of the physical structure of the product.
- Ask analysis and design methodologies applied to more complex product.
- Define design requirements and specifications of product design, within the project environment with technical and ergonomic requirements.

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In addition, in general, the following skills will be developed: Basic knowledge of the profession, ability to learn, ability to organize and plan, skill information management, capacity analysis and synthesis, capacity to generate new ideas, ability to solve problems, ability to apply knowledge into practice, decision making, oral and written communication, responsibility at work, work motivation, capacity for teamwork, ability to work independently, interpersonal skills Concern quality and improvement.

### 3.4.Importance of learning outcomes

Having a solid methodology to apply at work is a basic starting point that provides security to the industrial design professional as it helps to plan the work, directing efforts adequately to the achievement of predetermined targets and maintain control of all the process.

On the other hand , the proper definition and control of production processes is essential for the success of the product , and to integrate into other aspects such as the generation of innovative and competitive concepts , or appropriate formal developments oriented the market and the user.

### 4.Evaluation

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

The evaluation will be ongoing and will be based on meeting the stated objectives in the main semester project (which can be supplemented with other projects or exercises) , through the evaluation of different sections within the exercise itself or project. It may be supplemented by the realization of a final theoretical test, it will not lead beyond 15% of the total mark .

*Note: Following the rules of the University of Zaragoza in this regard, in the subjects with systems of continuous or gradual assessment, an overall test assessment will also be scheduled for students who decide to opt for this second system.*

### 5.Activities and resources

#### 5.1.General methodological presentation

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

Teachers involved in the subject Graphic Expression Area with a teaching load of 4 credits , and the Department of Manufacturing Processes , with a teaching load of 2 credits .

By performing practical projects on environment as real as possible , students will gradually acquire experience in project development , as necessary to join in the future the labor market. The theoretical classes provide the knowledge necessary for the proper progress in the development of projects.

This subject is related , as said , with Design Workshop I and II , Creativity and Design Methodology , but will coordinate with manufacturing processes, (and , where appropriate , Technical Language ) to propose joint projects of different subjects.

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### 5.2.Learning activities

The program offered to help the students achieve the expected results includes the following activities ...

The bulk of the course will be the development of practical projects, which will be tutored in practical classes of group work, and which also will accommodate various practices and exercises in the classroom. (2 credits).

The course will have a small number of lectures, which include the exposure of content with presentations and examples, and allow learning definitions, concepts, and various methodologies and theoretical approaches to discipline (1 Credit).

Students will develop projects with a greater degree of autonomy than the developed so far in the preceding subjects and with a greater degree of responsibility. It is intended that the largest possible part of the projects consist of actual proposals made by different industrial companies. The work to be performed by them in the development of practical and theoretical study will be around 3 credits.

### 5.3.Program

### 5.4.Planning and scheduling

It will be defined at the beginning of the course

### 5.5.Bibliography and recommended resources

- Munari, Bruno. ¿Cómo nacen los objetos? : Apuntes para una metodología proyectual / Bruno Munari . - 1ª ed., 11ª tirada Barcelona : Gustavo Gili, 2006
- Moles, Abraham. Teoría de los objetos / A. Moles ; [versión castellana de Laura Pla Bacín] Barcelona : Gustavo Gili, 1974
- Manzini, Ezio. Artefactos : hacia una nueva ecología del ambiente artificial / Ezio Manzini ; prólogo de Francisco Jarauta. 1a ed., 1a reimpr. Madrid : Celeste : Experimenta ediciones de Diseño, D.L. 1996
- Wong, Wucius. Fundamentos del diseño / Wucius Wong ; [versión castellana de Homero Alsina Thevenet y Eugeni Rosell i Miralles] . - 3a. ed. Barcelona : Gustavo Gili, D.L. 1995
- Arbonies, Ángel L.. Nuevos enfoques en la innovación de productos para la empresa industrial / Ángel L. Arbonies . Madrid : Díaz de Santos, cop. 1993
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- Lefteri, Chris. Así se hace : técnicas de fabricación para diseño de producto / Chris Lefteri. 1ª ed. en lengua española Barcelona : Blume, 2008