

25877 - Design Workshop I: Creativity

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	558 - Bachelor's Degree in Industrial Design and Product Development Engineering
ECTS	6.0
Course	2
Period	Second semester
Subject Type	Compulsory
Module	---

1. Basic info

1.1. Recommendations to take this course

The subject belongs to the backbone of the degree and to the group of subjects " Design Workshop ", it is a continuation of the contents of the courses " Design Workshop I and II" , for this reason it is highly recommended to have overcome these subjects .

Similarly, it is advisable to have a good level of technical drawing and sketching, to improve and increase communication skills own this subject .

1.2. Activities and key dates for the course

The subject share contents with other subjects in 2nd year 2nd term module , so it is necessary to make a good coordination of both activities / work as dates, each date or key activity is defined in the statement of the common project module and the schedule of sessions and presentation of works section.

Each subject/course timetables , start and ending dates , teaching schedules and office hours of teachers are published and can be found on EINA website :

<https://eina.unizar.es/>

2. Initiation

2.1. Learning outcomes that define the subject

The student, for passing this subject , must show the following results:

1. Understand the creative process, its stages and the relationship with the industrial design. Get to know creative techniques and apply methods through the design process.
2. Understand and apply the creative divergent and convergent process , in relation to design methodologies .
3. Get to know how to create new concepts, and apply the ability for abstraction and split problems.
4. Get to know how to use techniques for detection, analysis and solving problems . Solving simple design problems.
5. Explore, reflect and create new ideas and subsequent selection . Ability to use techniques for idea generation and selection , individually or collectively .

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2.2.Introduction

Knowledge and application of the creative process to the design process are critical in the Bachelor's Degree in Industrial Design and Product Development Engineering for innovation and product improvement. This subject is integrated into the 2nd year 2nd term module which aims to ensure that students are able to manage with knowledge about statistics, business and market analysis, new ideas generation through creativity and integration of solutions that contain an electrical system, to finally have graphics designs to apply on a final product presentation.

Students will apply creativity and integrate product decisions on:

- The basics of business management.
- Evaluate alternatives and optimize financial resources associated with the process of designing, manufacturing and marketing.
- Market analysis and statistical studies.
- Creative approach and conceptualization phases of product.
- Troubleshooting technical nature related to electricity.
- Graphics and communication applications, both on product and public appearances.

3.Context and competences

3.1.Goals

The main goal of the degree is to make proficient students dealing with the knowledge management and design skills needed for planning and developing the entire manufacturing process and product life.

In this sense, the subject is part of the group that aims the implementation and development of these skills in the most creative aspect, being a basic subject in the practice of industrial design and product development, key to understanding and problem solving and commitment to innovation and product improvement.

3.2.Context and meaning of the subject in the degree

The subject aims to get the student to start working on product development from a very early stages of the design process, implementing techniques and creative methods that will be used throughout the degree, and acquiring habits and behaviors that will work from this time continuously.

More specifically, it is intended that this course students are able to conceptualise products, defining the key elements of a product differentiating factors for innovation through ideas and new solutions. Likewise, the course sets the standards for use creativity in various forms in all stages of the design process.

3.3.Competences

BASIC COMPETENCES

CB03. Students have the ability to gather and interpret relevant data (usually within their field of study) to inform judgments that include an important reflection on social, scientific or ethical issues.

CB04. Students can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.

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GENERAL COMPETENCES

GC05. Capacity to collect, manage, analyze and synthesize information from various sources for the development of design projects and product development. Capacity to use this documentation to obtain conclusions aimed at solving problems and making decisions with initiative, creativity and critical thinking, in order to generate new product concepts, new ideas and solutions.

SPECIFIC COMPETENCES

SC13. Understand the creative process, its stages and relationship with industrial design. Understand and apply divergent and convergent design methods, similar to those found in the creative process and develop the capacity of conceptualization.

3.4.Importance of learning outcomes

The course is related to the group of subjects " Design Workshop" , all these subjects are methodological and experimental so that learning is based on "project based learning", practice is a very important factor in the learning process . It also provides expertise to other cross and electives subjects .

4.Evaluation

The subject is assessed in two parts , theoretical and practical , it is necessary to pass both parts .

The division into two parts corresponding to the following percentages :

- 25 % Examination and / or theoretical work .
- 75 % Practical work and projects (45 % exercises, 30 % module project)

The theoretical part , 25 % of the mark , be evaluated by two tests. First , a individual piece of work based on a theoretical exercise (5%). And second , by a written exam or test type exam with questions to develop. The examination or test will be held in mid- term, freeing that part should be overcome (20 %) , if not pass the test can go to the official dates in June or September.

The practical part is evaluated by three practical exercises or projects , 75 % of the mark : individual exercise (15 %) , an exercise or project partners (30 %) and module project group (30%).

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

In the course some theoretical subjects which will serve for learning definitions, the creative process, techniques and for

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reviewing cases and examples with presentations will be developed. However, the bulk of the course will consist of exercises in the classroom and on behalf of the student, tutored sessions monitoring and evaluation of project achievements and partial and general objectives of attainment.

Practical classes will consist of several simple exercises for individual work and project for collective work, the issues may be related to work of other subjects that are developed in the same quarter so that the share of research and problem solving is applicable to other exercises and student projects.

The evaluation will be continuous and will be based on meeting the objectives set out in proposed projects and exercises, through the evaluation of different sections within the exercise or project itself.

5.2.Learning activities

The lectures and master classes addressed theoretical issues and cases that are discussed and analyzed , debates are made .

The practical classes are developed through easy exercises for experimental and conceptual single work: The project is collective work and methodology seen in the theoretical part is applied .

6 ECTS : 150 hours / student distributed as Follows :

30 h . whole group class : theory and cases (15 classes 2 contact hours) Type 1

30 h . Practice class (15 sessions of 2 hours) Type 2

15 h . theoretical study

70 h . practical work

5 h. examination and presentation of projects

5.3.Program

- Concept Generation
Creativity and Creative thinking
Creative process
- Creative methods
Problem analysis. Problem solving
- Creative techniques
- Visual Thinking

5.4.Planning and scheduling

Week	Master class / cases	Practical classes
1	Creativity and creative thinking. Definition	Individual practical exercise
2	The creative process	Individual practical exercise
3	Creative methods. Characterization and Classification.	Individual practical exercise
4	Problem analysis. Problem solving	Project module.
5	Techniques I. Techniques Problem analysis.	Project module.

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6	Techniques II. Techniques individual creativity.	Project module.
7	Techniques II. Techniques individual creativity.	Project module.
8	Techniques III. Group creativity techniques.	Project module.
9	Techniques III. Group creativity techniques.	Project module.
10	Techniques IV. Assessment techniques ideas.	Work group.
11	Case Studies 1	Work group.
12	Case Studies 2	Work group.
13	Case Studies 3	Work group.
14	Case Studies 4	Work group.
15	Case Studies 5	Work group.

5.5. Bibliography and recommended resources

BIBLIOGRAFIA RECOMENDADA

- De Bono, Edward. El pensamiento creativo : el poder del pensamiento lateral para la creación de nuevas ideas / Edward De Bono. 1ª ed., 6ª reimp. Barcelona [etc] : Paidós, 2010
- Henry, Kevin. Creatividad y diseño de producto / Kevin Henry ; [traducción, Jesús de Cos Pinto y Alicia Misrahi Vallés] . - 1ª ed. en español Barcelona : Promopress, 2012
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- Marín Ibáñez, Ricardo. La creatividad / Ricardo Marín Ibáñez . 1ª ed. Barcelona : Ceac, 1980
- Manual de la creatividad : aplicaciones educativas / coordinadores, Ricardo Marín Ibáñez, Saturnino de la Torre de la Torre ; autores, Eusebio Aranda Muñoz ... [et al.] . - 1a. ed. Barcelona : Vicens Vives, 1991