

## Course guide

### 320149 - TDEP - Experimental Design Workshop Product

**Last modified:** 19/04/2023

**Unit in charge:** Terrassa School of Industrial, Aerospace and Audiovisual Engineering  
**Teaching unit:** 717 - DEGD - Department of Engineering Graphics and Design.

**Degree:** BACHELOR'S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2010). (Optional subject).

**Academic year:** 2023    **ECTS Credits:** 6.0    **Languages:** Catalan

#### LECTURER

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**Coordinating lecturer:** JOSE LUIS LAPAZ CASTILLO - JOSE CARLOS MARTINEZ MALO

**Others:** JAVIER EDUARDO HERNANDEZ AMAYA  
JOSE CARLOS MARTINEZ MALO  
ADRIANNA MAS CUCURELL

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

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##### Specific:

1. DES: Ability to design and project in different situations, effectively and efficiently with different agents involved in the process of design and industrial development.
2. DES: Ability to take decisions related to the graphic representation of concepts.
3. DES: Ability to apply specific methods, techniques and instruments for each form of technical drawing.
4. DES: Knowledge of the types of design and products, and their presentation.
5. DES: Advanced knowledge in 3D modeling.
6. DES: Knowledge of basic animation and 3D simulation.

##### Transversal:

7. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
8. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
9. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.
10. SELF-DIRECTED LEARNING - Level 1. Completing set tasks within established deadlines. Working with recommended information sources according to the guidelines set by lecturers.
11. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.

## TEACHING METHODOLOGY

- A theoretical introduction will be made at the beginning of each session and the evolution of each practice will be indicated
  - In the practices will be realized designs of virtual and real prototypes of everyday objects
  - The work will consist of the creation of consumer products, at the teacher's proposal, designed expressly from an idea of inventiveness
- Original and proper or to solve a known problem or manifest deficiency
- Manual instruments and techniques of graphic representation, infographic applications and 3D CAD will be used to carry out research, study, analysis and reasoning of existing designs, as well as for the creation of a new model for each case
  - The theory and practice classes will be done using both the design workshop and the computer classroom.
  - Appropriate projects will be proposed at the hours of the course and deadlines forcing commitment and responsibility.

## LEARNING OBJECTIVES OF THE SUBJECT

- Stimulate inventiveness to foster innovation
- Develop, systemize and organize the creative process
- Encourage creativity and ingenuity to develop innovative objects
- Develop the ability to imagine, create and perform new product ideas
- Apply knowledge, skills and abilities acquired in the graphical representation.
- Apply graphical techniques in the transmission of ideas in the design process industry.
- Understand the design process of industrial design and implement appropriate expressive techniques
- To promote the application of skills learned in other courses
- To provide knowledge and develop skills to study the design of urban and domestic equipment
- To expand the application of eco-design
- To provide knowledge and develop skills for presenting industrial projects
- Simulate the client-design team and develop product lines

## STUDY LOAD

Type	Hours	Percentage
Self study	90,0	60.00
Hours large group	30,0	20.00
Hours small group	30,0	20.00

**Total learning time:** 150 h

## CONTENTS

### TOPIC 1: Design analysis and functionality

#### Description:

- 1 - Functions and product requirements.
- 2 - Classification of problems.
- 3 - Feasible solutions

#### Related activities:

Design of street furniture.

#### Full-or-part-time: 20h

Theory classes: 2h

Laboratory classes: 6h

Self study : 12h

## TOPIC 2: Articulated joint

### Description:

- 1 - Analysis of constraints.
- 2 - Strategies and geometric options.
- 3 - Simulation graphical possibilities.

### Related activities:

Folding Product design

**Full-or-part-time:** 32h

Theory classes: 3h

Laboratory classes: 9h

Self study : 20h

## TOPIC 3: Re-Design of daily products

### Description:

- 1- Defining characteristics.
- 2 - Analysis and interpretation of data.
- 3 - Alternative Design upgrade.

### Related activities:

Design of office equipment.

**Full-or-part-time:** 20h

Theory classes: 2h

Laboratory classes: 6h

Self study : 12h

## TOPIC 4: Value of variable geometry function

### Description:

- 1 - geometric configuration and operation.
- 2 - Identify needs.
- 3 - Generating optimal geometry.

### Related activities:

Design of domestic equipment. Design of home appliances.

**Full-or-part-time:** 45h

Theory classes: 5h

Laboratory classes: 14h

Self study : 26h

### TOPIC 5: Systems of product families

**Description:**

- 1- Functions and analysis of usability.
- 2 - Approach series.
- 3 - Determination of the integral approach.

**Related activities:**

Design of manual use tools.

**Full-or-part-time:** 33h

Theory classes: 3h

Laboratory classes: 10h

Self study : 20h

## ACTIVITIES

### (ENG) PROVA PARCIAL

### (ENG) PROVA FINAL

### (ENG) ACTIVITAT VINCULADA 1

**Full-or-part-time:** 113h

Laboratory classes: 45h

Self study: 68h

## GRADING SYSTEM

The activities will be approved only if the teacher has supervised them in class.

The assimilation of contents, theory of the subject, individually tests, the practical achievements and the defense of the projects will be part of the evaluation.

Percentages:

During the course will be held between 8 internships / project and two exams. A total of 10 activities. Each has a weight of 10%

## EXAMINATION RULES.

1. Classes will be theoretical and practical
2. The theoretical content will be applied and taught in theoretical and practical sessions
3. 10 activities will be carried out during the course
4. The completion of all exercises and attendance are essential for the evaluation
5. Papers that have not been supervised by teacher in the class may not be approved.