Course guide
320135 - DB - Basic Design

Last modified: 11/04/2025

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). (Compulsory subject).

Academic year: 2025 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: JORDI VOLTAS AGUILAR

Others: Martinez Malo, Jose Carlos
Javier Hernandez, com a professor d'activitats dirigides en taller.

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CED41-DIDP. Mastery of tools related to the design process. (Specific technology module: Industrial Design)
CED42-DIDP. Knowledge of design tools to apply in product design and redesign projects. (Specific technology module: Industrial Design)
CED47-DIDP. Ability to design interfaces. (Specific technology module: Industrial Design)
CED48-DIDP. Ability to understand and apply the creative process and its organization. (Specific technology module: Industrial Design)
CED49-DIDP. Ability to analyze and synthesize bi and three-dimensional forms. (Specific technology module: Industrial Design)

CED54-DIDP. Ability to analyze, design, and project in design workshops. (Specific technology module: Industrial Design)
CED57-DIDP. Practical ability to redesign products. (Specific technology module: Industrial Design)
CED58-DIDP. Practical knowledge of industrial design methodology. (Specific technology module: Industrial Design)

Generical:
CG02-DIDP. Acquisition of technical, scientific, humanistic, aesthetic, environmental and creativity enhancing knowledge and procedures necessary for professional practice related to product design.

TEACHING METHODOLOGY

The methodology will cover the following aspects:
- Lectures
- Practical individual and group work in class
- Individual and group course projects
- Practical activities carried out in the workshop

LEARNING OBJECTIVES OF THE SUBJECT

Become familiar with the fundamentals of design.
Analyse and describe basic two-dimensional and three-dimensional shapes.

STUDY LOAD

Type	Hours	Percentage
Hours small group	45,0	30.00
Self study	90,0	60.00
Hours large group	15,0	10.00

Total learning time: 150 h

CONTENTS

Basic principles of design (1)

Description:
iconicity
Interpretation of maps
accessibility
Hotspots design
Organization of information

Full-or-part-time: 20h
Theory classes: 2h
Laboratory classes: 6h
Self study : 12h

Psychology of shapes

Description:
1.1 Visual perception
1.2 Gestalt's laws

Specific objectives:
For students to analyse the fundamentals of visual perception.

Related activities:
The interpretation and analysis of sample materials.

Full-or-part-time: 10h
Theory classes: 6h
Laboratory classes: 1h
Self study : 3h

Design components

Description:
2.1. Basic components of two-dimensional design
2.2. Repetitions. The module
2.3. Design structure. Grids
2.4. Gradation and radiation
2.5. Contrast and concentration
2.6. Texture and space

Specific objectives:
For students to learn to identify the general components that make up all compositions and structured designs.

Related activities:
The interpretation and analysis of sample materials.
Modelling of student proposals.

Full-or-part-time: 20h
Theory classes: 2h
Laboratory classes: 6h
Self study : 12h

Colour

Description:
3.1. Colour in graphic design
3.2. Colour and message
3.3. Colour charts

Specific objectives:
For students to understand the role of colour in compositions.

Related activities:
The interpretation and analysis of sample materials.
Modelling of student proposals.

Full-or-part-time: 10h
Theory classes: 1h
Laboratory classes: 3h
Self study : 6h

Graphical design basis. Composition

Description:
4.1. Aspects of shape
4.2. Design of geometrical shapes
4.3. Design of organic shapes
4.4. Types of compositions
4.5. Analysis of the directrix curves of bodies

Specific objectives:
For students to understand two-dimensional compositions and their applications in the world of design.

Related activities:
The interpretation and analysis of sample materials.
Modelling of student proposals.

Full-or-part-time: 10h
Theory classes: 1h
Laboratory classes: 3h
Self study : 6h

Basic principles of design (2)

Description:
Shape and function
Affordance
Flexibility and effectiveness
Structural forms
Modularidad

Full-or-part-time: 20h
Theory classes: 2h
Laboratory classes: 6h
Self study : 12h

Three-dimensional design

Description:
5.1. Introduction
5.2. Sequencing plans
5.3. Wall structures
5.4. Prisms and polyhedrons
5.5. Networks
5.6. The creation of bodies from directrix curves

Specific objectives:
For students to understand three-dimensional compositions and their applications in the world of design.

Related activities:
The interpretation and analysis of sample materials.
Modelling of student proposals.

Full-or-part-time: 20h
Theory classes: 2h
Laboratory classes: 6h
Self study : 12h

Basic principles of design (3)

Description:
Need's pyramid
consistencies
Errors
Limitations

Full-or-part-time: 20h
Theory classes: 2h
Practical classes: 6h
Self study : 12h

(ENG) Introducción al proceso de diseño de producto

Description:
The creative process. The ideas in product development
The product description

Full-or-part-time: 20h
Theory classes: 2h
Practical classes: 6h
Self study : 12h

GRADING SYSTEM

The course will qualify in the following areas:
- 60% Deliverables along course.
- 30% Exams.
15% Exam 1
15% Exam 2
- 10% Theoretical continuous assesment
For those students who meet the requirements and submit to the reevaluation examination, the grade of the reevaluation exam will replace the grades of all the on-site written evaluation acts (tests, midterm and final exams) and the grades obtained during the course for lab practices, works, projects and presentations will be kept.
If the final grade after reevaluation is lower than 5.0, it will replace the initial one only if it is higher. If the final grade after reevaluation is greater or equal to 5.0, the final grade of the subject will be pass 5.0.

EXAMINATION RULES.

The non-delivery of work within the required would involved penalty of 20% in qualifying this.

The assessment methodology will
- Questionnaires
- Evaluations of all deliveries by the teacher
- Corrections and participation in the process of cross-correction by students
- Exams

BIBLIOGRAPHY

Basic:
- Dondis, Donis A. La Sintaxis de la imagen : introducción al alfabeto visual. Barcelona: G. Gili, 1976. ISBN 842520609X.
- Wong, Wucius. Fundamentos del diseño [on line]. Barcelona: Gustavo Gili, 2014 [Consultation: 03/04/2023]. Available on: https://elibro.net/es/lc/upcatalunya/titulos/45553. ISBN 8425227410.
- Munari, Bruno. Diseño y comunicación visual : contribución a una metodología didáctica. Barcelona [etc.]: Gili, 1985. ISBN 8425212030.

Complementary:
- Arnheim, Rudolf. Arte y percepción visual : psicología del ojo creador : nueva versión. 2ª ed. Madrid: Alianza, 2002. ISBN 8420678740.
- Panero, Julius; Zelnik, Martin. Las dimensiones humanas en los espacios interiores [on line]. Barcelona: Gustavo Gili, 1983 [Consultation: 03/04/2023]. Available on: https://elibro.net/es/lc/upcatalunya/titulos/176281. ISBN 8425211557.
- Phillips, Peter; Bunce, Gillian. Diseños de repetición. México D.F.: G. Gili, 1996. ISBN 9688873160.
- Stevens, Peter S. Patrones y pautas en la naturaleza. Barcelona: Salvat, cop. 1986. ISBN 8434582465.
- Williams, Christopher. Los orígenes de la forma. Barcelona: Gustavo Gili, 1984. ISBN 8425211689.
- Ghyka, Matila C. Estética de las proporciones en la naturaleza y en las artes. 3ª ed. Barcelona: Poseidón, cop. 1983. ISBN 8485083067.
- Cruz G., J. Alberto; Garnica G., G. Andrés. Ergonomía aplicada. Madrid: Starbook, 2011. ISBN 9788492650873.
- Thompson, D'Arcy Wentworth; Bonner, John Tyler. Sobre el crecimiento y la forma. 1ª reimpr. en Akal. Madrid: Akal, 2011. ISBN 9788446033394.