

Course guide

340079 - DIBA - Basic Design

Last modified: 06/07/2026

Unit in charge:	Vilanova i la Geltrú School of Engineering	
Teaching unit:	717 - DEGD - Department of Engineering Graphics and Design.	
Degree:	BACHELOR'S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2009). (Compulsory subject).	
Academic year: 2026	ECTS Credits: 6.0	Languages: Catalan, Spanish

LECTURER

Coordinating lecturer:	JOSE MARIA MONGUET FIERRO
Others:	Primer quadrimestre: ALEJANDRO TREJO OMEÑACA - D5011, D5012, D5021, D5111, D5112

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

7. D23. Knowledge of design and product TOPOLOGIA and its presentation.
8. D41. Control of tools related to design processes.
9. D43. Knowledge of design methodology.
10. D49. Ability to analyze and to synthesize bidimensional and tridimensional forms.
11. D58. Practical knowledge of industrial design methodology.

Transversal:

1. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.
2. ENTREPRENEURSHIP AND INNOVATION - Level 2. Taking initiatives that give rise to opportunities and to new products and solutions, doing so with a vision of process implementation and market understanding, and involving others in projects that have to be carried out.
3. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 2. Applying sustainability criteria and professional codes of conduct in the design and assessment of technological solutions.
4. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.
5. EFFECTIVE USE OF INFORMATION RESOURCES - Level 2. Designing and executing a good strategy for advanced searches using specialized information resources, once the various parts of an academic document have been identified and bibliographical references provided. Choosing suitable information based on its relevance and quality.
6. 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

- In the theoretical sessions, the contents will be presented and the theoretical bases of the subject, concepts, methods and results will be introduced, illustrating them with convenient examples to facilitate their understanding.
- The practical sessions will alternate between team work sessions, which will consist of statements and guided processes to achieve a result, and sessions of group exposition of concepts, techniques and procedures, for the resolution of exercises and practical work.
- The non-classroom activity is oriented to team work.

LEARNING OBJECTIVES OF THE SUBJECT

To provide the basic knowledge, criteria and tools needed to transform initial ideas into minimally viable products, services or experiences.

To introduce and apply design, creativity and design-driven innovation methodologies in project development.

To develop the ability to use generative artificial intelligence critically, creatively and responsibly throughout the design process.

To foster active, collaborative and reflective learning, with teaching staff acting as guides, mentors and facilitators of the process.

To promote an integrated understanding of design that incorporates technological, social, environmental, economic and market-related dimensions.

STUDY LOAD

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

Total learning time: 150 h

CONTENTS

Creativity

Description:

- 1.1.- Creative teams
- 1.2.- Creativity techniques
- 1.3.- Creativity management

Related competencies :

- . D23. Knowledge of design and product TOPOLOGIA and its presentation.
- . D49. Ability to analyze and to synthesize bidimensional and tridimensional forms.

Full-or-part-time: 18h

Theory classes: 12h

Laboratory classes: 6h

Design Ontology

Description:

- 2.1.- Categories and dimensions of design
- 2.2.- Design methods
- 2.3.- Design process

Related competencies :

- . D41. Control of tools related to design processes.
- . D43. Knowledge of design methodology.
- . D58. Practical knowledge of industrial design methodology.

Full-or-part-time: 18h

Theory classes: 12h

Laboratory classes: 6h

Design-led innovation

Description:

Development of the practices associated with the contents of the program following a structure of challenge definition, solution analysis, project work, prototype development and improvement study.

Related competencies :

- . D23. Knowledge of design and product TOPOLOGIA and its presentation.
- . D41. Control of tools related to design processes.
- . D58. Practical knowledge of industrial design methodology.

Full-or-part-time: 18h

Theory classes: 12h

Laboratory classes: 6h

ACTIVITIES

P1. Challenge definition

Delivery:

Team presentation and report

Related competencies :

05 TEQ N2. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.

04 COE N2. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.

07 AAT N2. 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.

Full-or-part-time: 4h

Theory classes: 4h

P2. Solution analysis

Delivery:

Team presentation and report

Related competencies :

06 URI N2. EFFECTIVE USE OF INFORMATION RESOURCES - Level 2. Designing and executing a good strategy for advanced searches using specialized information resources, once the various parts of an academic document have been identified and bibliographical references provided. Choosing suitable information based on its relevance and quality.

01 EIN N2. ENTREPRENEURSHIP AND INNOVATION - Level 2. Taking initiatives that give rise to opportunities and to new products and solutions, doing so with a vision of process implementation and market understanding, and involving others in projects that have to be carried out.

04 COE N2. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.

07 AAT N2. 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.

Full-or-part-time: 4h

Theory classes: 4h

P3- Project work

Delivery:

Team presentation and report

Related competencies :

01 EIN N2. ENTREPRENEURSHIP AND INNOVATION - Level 2. Taking initiatives that give rise to opportunities and to new products and solutions, doing so with a vision of process implementation and market understanding, and involving others in projects that have to be carried out.

05 TEQ N2. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.

06 URI N2. EFFECTIVE USE OF INFORMATION RESOURCES - Level 2. Designing and executing a good strategy for advanced searches using specialized information resources, once the various parts of an academic document have been identified and bibliographical references provided. Choosing suitable information based on its relevance and quality.

07 AAT N2. 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.

Full-or-part-time: 4h

Theory classes: 4h

P4- Prototype development

Delivery:

Team presentation and report

Related competencies :

01 EIN N2. ENTREPRENEURSHIP AND INNOVATION - Level 2. Taking initiatives that give rise to opportunities and to new products and solutions, doing so with a vision of process implementation and market understanding, and involving others in projects that have to be carried out.

05 TEQ N2. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.

04 COE N2. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.

07 AAT N2. 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.

06 URI N2. EFFECTIVE USE OF INFORMATION RESOURCES - Level 2. Designing and executing a good strategy for advanced searches using specialized information resources, once the various parts of an academic document have been identified and bibliographical references provided. Choosing suitable information based on its relevance and quality.

Full-or-part-time: 4h

Theory classes: 4h

P5- Improvement study

Delivery:

Team presentation and report

Related competencies :

05 TEQ N2. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.

02 SCS N2. SUSTAINABILITY AND SOCIAL COMMITMENT - Level 2. Applying sustainability criteria and professional codes of conduct in the design and assessment of technological solutions.

04 COE N2. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.

07 AAT N2. 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.

06 URI N2. EFFECTIVE USE OF INFORMATION RESOURCES - Level 2. Designing and executing a good strategy for advanced searches using specialized information resources, once the various parts of an academic document have been identified and bibliographical references provided. Choosing suitable information based on its relevance and quality.

Full-or-part-time: 4h

Theory classes: 4h

GRADING SYSTEM

A continuous evaluation model will be applied in order to monitor the acquired knowledge, team work and individual work.

The formative evaluation requires the attendance of the student at least 90% of the practical and laboratory sessions.

The final grade (NF) will be obtained from the following formula: $NF = 0.2 \cdot NI + 0.5 \cdot NG + 0.3 \cdot NE$

NI = Individual grade (participation, attendance, attitude...) - (NOT re-evaluable)

NG = $(0.25 \cdot NG1 + 0.5 \cdot NG2 + NG3 + 1.5 \cdot NG4 + 2 \cdot NG5) / 5.25$ [NGx is the grade for each of the group activities.] - (NOT re-evaluable)

NE = Final exam score - (NOT re-evaluable)

EXAMINATION RULES.

It is essential to attend and actively participate in the classroom and to have a critical and active attitude.

The practices must be presented according to the criteria specified in each case.

BIBLIOGRAPHY

Basic:

- Monguet, Josep M.; Trejo Omeñaca, Alex. Innovació guiada pel disseny [on line]. 2a ed. Barcelona: Iniciativa Digital Politècnica. Oficina de Publicacions Acadèmiques Digitals de la UPC, 2019 [Consultation: 24/03/2022]. Available on: <https://upcommons.upc.edu/handle/2117/174464>. ISBN 9788498808186.