

Course guide

340081 - DIPR - Product Design

Last modified: 19/05/2026

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:

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. D20. Ability to design and to project in different communication surroundings in a effective and efficient way with different agents interacting in industrial design and development process.
2. D21. Ability purchasing power to take decisions related to graphic representation of concepts.
3. D22. Ability to apply methods, techniques and specific instruments for each way of technical representation.
4. D23. Knowledge of design and product TOPOLOGIA and its presentation.
5. D29. Knowledge of editing and technical documents representation.
6. D32. Ability to carry out product projects, machines, mechanism and installations.
7. D38. Ability to identify the language of forms, its values and relation with cultural surroundings.
8. D39. Ability to analyze repercussions generated by products in society.
9. D40. Ability to know and interpret the necessity of the market and user.
10. D41. Control of tools related to design processes.
11. D44. Knowledge of ANTROPOMETRIA.
12. D45. Knowledge of ergonomic of specific necessity.
13. D57. Ability to redesign products.
14. D61. Practical knowledge of product detail design.
15. D62. Practical ability to analyze form, composition and structure of products.

Transversal:

16. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.
17. 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.
18. EFFICIENT ORAL AND WRITTEN COMMUNICATION. Communicating verbally and in writing about learning outcomes, thought-building and decision-making. Taking part in debates about issues related to the own field of specialization.
19. 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.
20. 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.
21. EFFECTIVE USE OF INFORMATION RESOURCES. Managing the acquisition, structure, analysis and display of information from the own field of specialization. Taking a critical stance with regard to the results obtained.

TEACHING METHODOLOGY

- 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 teaching material that is considered likely to be published by the teaching staff will be found on the digital campus (Atenea)

- Practical Work Sessions are made up of:

- 1) Sessions where practices will consist of statements and processes designed to achieve a specific result.
- 2) Practices and Individual Development Articles
- 3) Individual project (optional).
- 4) The practice sessions involve the active participation of the student through the presentation and debate of individual practices.
- 5) Theoretical-Practical Exercises of evaluable control.

- Debate Sessions: These sessions will discuss topics related to Product Design, contributed by teachers and students, with active and dynamic participation by the students with the corresponding monitoring by the teachers. As a result of this debate, the student will prepare the corresponding article

Students will have to study to assimilate the theoretical concepts and develop the proposed activities, as well as take notes (the main asset in monitoring) the contents of the subject in the classroom.

Non-face-to-face autonomous learning is aimed at assimilating and developing the contents of the subject.

LEARNING OBJECTIVES OF THE SUBJECT

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STUDY LOAD

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

Total learning time: 150 h

CONTENTS

-1. Science of Product Design. Introduction

Description:

- Introduce and define the historical perspective of objects through or through Product Design: Human, Objects and the Environment (H-O-E).
- The evolution and major technological and social transformations through Product Design. The design of Products as knowledge transfer.
- Understand Product Design as a Science, a Technique and an Art.
- Identify methodology and processes in Product Design.
- Importance in Product Design of the 3D concept: Design, Speech and Debate.

Specific objectives:

Understand Design in its entirety as: Science, Technique and Art. As such, the student has to identify and analyze the various parts that form and integrate Product Design in the different aspects of Product Engineering.

Full-or-part-time: 6h

Theory classes: 6h

-2. Product Analysis. Form and Function.

Description:

- Define the intrinsic relationship between Form and Function: The form follows the function and the function is conditioned by the form.
- Define the basic or primitive geometries that define the shapes.
- Justify each global or partial form of the objects and its projection in its function.
- Relationships of forms and functions in the components and modules of the products. Product Functions.
- Structure and composition of objects and products. Fiscal definition and attributes.

Specific objectives:

Conceptualize and visualize global or partial forms and functions of objects and products, in their initial and final design phase.

Full-or-part-time: 6h

Theory classes: 6h

-3.Product Ergonomics and Usability.

Description:

- Ergonomics and its context: Industrial, Organizational and Environmental.
- Ergonomics applied to product design. Most relevant aspects.
- The study of ergonomics: anthropometric-morphological analysis. Domains.
- Ergonomics study: product-user interaction. Usability.

Full-or-part-time: 6h

Theory classes: 6h

-4. Product Language

Description:

- The Product language and its syntax: semantics, syntax and pragmatics.
- Identify the syntax of the product language with its explicit and implicit functions.
- Importance of product language and the communicative language of objects.
- The product language and its functions.
- The emotional design. Its social impact.

Full-or-part-time: 6h

Theory classes: 6h

-5. EcoDesign and Product Life Cycle. Research in Product Design

Description:

- Ecodesign. Define the importance of Product Design and its environmental impact.
- Typologies and Possibilities of Product Design in the personal, social and environmental context.
- The circular design. Circular design metric. Its importance in the initial product design process.
- Research in product design. Systems and methods most used or implemented.

Full-or-part-time: 6h

Theory classes: 6h

-6. Design Debates. Personal Article. From information to knowledge

Description:

- Importance of 3D in Product Design: Design, Speech and Debate.
- Create your own personal space for reflection and thinking on different topics linked to Product Design. Generate a written article based on the topics covered.
- Create a necessary use of a communication language based on what was explained in theoretical and practical sessions, having the language of the product as a basic reference.
- Possibility of generating new products and services from the debates. Business possibilities.
- From information to be able to generate various knowledge.

Specific objectives:

- The purpose is for students to generate a collective and collaborative debate on a topic presented: text, article or videos, as well as on the practices carried out among other references. This allows students to not only learn from the teachers' explanations or experience but also from their peers.
- It must be kept in mind that a good part of Product Design is made up of implicit or cognitive content that is not in the product or physical object designed.

Full-or-part-time: 15h

Theory classes: 15h

-7. Practical Work Activities.

Description:

- Develop a series of established practices linked to the theory sessions presented in face-to-face class and to be developed in the practical sessions. The main indicators in their assessment being: the graphic language used in their development and execution, as well as the written language, typical of product design engineering, used in the definition and justification of the proposal and solution.
- Optionally define an individual project that supports the acquired knowledge, both theoretical and practical. Using the same assessment criteria as that used in the scheduled practices of the subject.

Full-or-part-time: 15h

Practical classes: 15h

-8. Autonomous Learning.

Description:

- Students, according to the current curriculum, have a few hours per week outside of those established in person with the teachers of the Product Design subject. In these hours of autonomous learning, students will expand their knowledge on each topic covered, making use above all of the documentation published in Atenea, as well as, and no less important, the bibliography recommended as basic in the DIPR subject.

Full-or-part-time: 90h

Self study : 90h

ACTIVITIES

(ENG)

Full-or-part-time: 6h

Practical classes: 6h



(ENG)

Full-or-part-time: 6h
Practical classes: 6h

(ENG)

Full-or-part-time: 6h
Practical classes: 6h

(ENG)

Full-or-part-time: 6h
Practical classes: 6h

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Full-or-part-time: 6h
Practical classes: 6h

P7

Full-or-part-time: 10h
Theory classes: 10h

(ENG) P6-

Full-or-part-time: 6h
Theory classes: 6h

(ENG) P8-

Full-or-part-time: 5h
Practical classes: 5h

GRADING SYSTEM

1.076 / 5.000

Continuous face-to-face evaluation is the only model established to be able to track the knowledge acquired by the student. Therefore, the lack of face-to-face monitoring is detrimental to the overall assessment of the subject.

The overall assessment of the subject will be made up of the following sections:

-Tests on the dates established by the Academic direction:

Partial and Final Evaluation... (Theoretical-Practical)40%

-Individual Activity Practices.(IA)30%

-Individual Articles from Class Discussions.....20%

-Monitoring and Entrepreneurship. (In person)10%

Students who are eligible for re-evaluation according to the academic regulations for Bachelor's and Master's studies of the EPSE VG, in this subject, correspond to the Partial (PAP) and final (PAF) evaluation tests.

For a good result, with good follow-up of the subject, it is important to have all the information and documentation published on the digital campus (Atenea) present.

EXAMINATION RULES.

Attendance at all theoretical-practical sessions in the classroom is necessary and recommended, since it constitutes a great indicator of commitment on the part of the student towards the subject, as mentioned above, it defines a personal indicator of follow-up by the student. student.

It is necessary to actively participate in the classroom and have a critical and active attitude. This aspect will have special consideration in the student's entrepreneurship and follow-up.

Monitoring, comments, feedback on activities, etc. It will be done in person, in the classroom or, if appropriate, in consultation sessions or tutorials. It will not be done by any other means than in person.

The dates and delivery conditions of the activities will be published on the digital campus (Atenea). This digital campus being the usual delivery medium or channel. In the event that an activity requires an alternative means of delivery, this will be the one established by the teaching staff.

The activities or practices developed by the students will prioritize the use of graphic language (visualization of ideas through sketches typical of Design Engineering), as well as the communication language of the Design or Product Engineer, over other means that They are foreign to him.

Other generic prior skills and qualities applicable to any activity within the university academic field will also be required, such as: respect, teamwork, ability to synthesize and prepare your own compendium of notes for the subject.

For the normal development of the subject, the following are not allowed in the classroom:

-Enter or leave the Classroom once the session has started.

-make use of the mobile phone.

-eat or drink.

-use technological devices (such as a computer, tablet...) for purposes other than taking notes.

-record or photograph with technological devices.

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Basic:

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- Viñolas i Marlet, Joaquim. Diseño ecológico : hacia un diseño y una producción en armonía con la naturaleza. Barcelona: Blume, 2005. ISBN 8495939088.
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- Munari, Bruno. ¿Cómo nacen los objetos? : apuntes para una metodología proyectual [on line]. Barcelona: Gustavo Gili, 2016 [Consultation: 27/02/2024]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=4760445>. ISBN 9788425228650.
- Pugh, Stuart. Total design : integrated methods for successful product engineering. Wokingham, England: Addison-Wesley Pub. Co., 1990. ISBN 0201416395.
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- Brown, Tim. Change by design : how design thinking transforms organizations and inspires innovation [on line]. New York: Harper Business, 2019 [Consultation: 14/02/2024]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=6931612>. ISBN 9780062856623.

Complementary:

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- Esteva Fabregat, Claudio. Antropología industrial. Barcelona: Anthropos, 1984. ISBN 8485887212.
- Lipovetsky, Gilles. El Imperio de lo efímero : la moda y su destino en las sociedades modernas. 1a ed. Barcelona: Anagrama, 2004. ISBN 9788433967787.