

340072 - TAD1-D3017 - Design Workshop I

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| Coordinating unit: | 340 - EPSEVG - Vilanova i la Geltrú School of Engineering |
| Teaching unit: | 717 - EGE - Department of Engineering Presentation |
| Academic year: | 2018 |
| Degree: | BACHELOR'S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2009). (Teaching unit Compulsory) BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional) |
| ECTS credits: | 6 |
| Teaching languages: | Catalan, Spanish |

Teaching staff

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| Coordinator: | Manuel López Membrilla |
| Others: | Departament 713-EQ: Agusti Fortuny Sanroma. Departament 712-EM: Hernan Alberto Gonzalez Rojas. Departament 717-EGE: Manel L. Membrilla, Dolors López, Alba Torras, Ruben de Castro. Departament 732-OE: Josep Maria Colomer Mur. Departament 737-RMEE: Antoni Andreu Torras. |

Degree competences to which the subject contributes

Transversal:

1. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 1. Planning oral communication, answering questions properly and writing straightforward texts that are spelt correctly and are grammatically coherent.
2. SELF-DIRECTED LEARNING - Level 1. Completing set tasks within established deadlines. Working with recommended information sources according to the guidelines set by lecturers.
3. EFFECTIVE USE OF INFORMATION RESOURCES - Level 1. Identifying information needs. Using collections, premises and services that are available for designing and executing simple searches that are suited to the topic.
4. TEAMWORK - Level 1. Working in a team and making positive contributions once the aims and group and individual responsibilities have been defined. Reaching joint decisions on the strategy to be followed.
5. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

Teaching methodology

Workshop 1 theory: contents are exhibited and theoretical basis of different materials, concepts, methods and results with practical applications are introduced and appropriate examples to facilitate their understanding.

Practises of workshop 1 consist of:

- 1) Sessions where projects consist of statements.
- 2) Global or specific complementary feedback so that students are able to develop proposed projects.
- 3) Guided follow-up to achieve results.

Students propose solutions for analysed and developed projects.

The lab os workshop 2 contemplates:

- 1) Possibility to do the respective model (Prototype in 3D, possible soluitons)
- 2) Guided follow-up to achieve results.

The independent learning is aimed at making presetnations of projects as well as at complementary information research and exisiting product manipulation .

Learning objectives of the subject

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To acquire a general education based on the product and get acquainted to the different parts that form them. Internal and external product analysis.

Strengthen skills, ingenuity and ability to analyze and manipulate an industrial product.

To develop minimum technical ability to solve effectively the proposed projects and ideas that students themselves generate.

To interpret the process of product development from the formal and theoretical knowledge of different subjects that make up the Design Workshop.

To develop an attitude of criticism and self-criticism of the own works and those of the colleagues.

To gain an overview of the product. Product and its components. Structure of a product.

Study load

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|---------------------------|---------------------|------|--------|
| Total learning time: 150h | Hours large group: | 6h | 4.00% |
| | Hours medium group: | 0h | 0.00% |
| | Hours small group: | 6h | 4.00% |
| | Guided activities: | 0h | 0.00% |
| | Self study: | 138h | 92.00% |

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Content

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| 1. Introduction into Product Design. Creativity. | Learning time: 2h Theory classes: 2h |
| 2. Components Analysis: Conception of Volum and Form. | Learning time: 2h Theory classes: 2h |
| 3. Product Analysis: Form, Function and Aesthetics. | Learning time: 2h Theory classes: 2h |
| 4. Product and Materials. Product and Resistance. | Learning time: 2h Theory classes: 2h |
| 5. Construction Techniques. Processes. | Learning time: 2h Theory classes: 2h |
| 6. Market Demand Analysis. Types of Clients. | Learning time: 2h Theory classes: 2h |
| Distance Activity. | Learning time: 45h Self study : 45h |

Qualification system

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Regulations for carrying out activities

Bibliography

Basic:

Hudson, Jennifer. Proceso : 50 productos de diseño : del concepto a la fabricación. Barcelona: BLUME, 2009. ISBN 9788498013832.

Kalpakjian, Serope; Schmid, Steven R. Manufacturing processes for engineering materials. 5th ed. Upper Saddle River: Pearson Education, 2007. ISBN 9789810679538.

Ashby, M. F. Materials and design [Recurs electrònic] : the art and science of material selection in product design [on line]. 2nd ed. Amsterdam ; Boston ; London: Butterworth-Heinemann, 2010 [Consultation: 07/10/2014]. Available on: <<http://www.sciencedirect.com/science/book/9781856174978>>. ISBN 9781856174978.

Earle, James H. Diseño gráfico en ingeniería. Bogotá [etc.]: Fondo Educativo Interamericano, 1976.

Complementary:

Budynas, Richard G.; Nisbett, J. Keith. Diseño en ingeniería mecánica de Shigley. 9a ed. México [etc.]: McGraw-Hill Higher, 2012. ISBN 9786071507716.

Quarante, Danielle. Diseño industrial, vol. 1, Elementos introductorios. Barcelona: CEAC Barcelona, 1992. ISBN 8432956171.

Calero Pérez, Roque; Carta Gonzalez, José Antonio. Fundamentos de mecanismos y máquinas para ingenieros. Madrid [etc.]: McGraw-Hill, 1999. ISBN 844812099X.