

**Información del Plan Docente**

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	558 - Bachelor's Degree in Industrial Design and Product Development Engineering
ECTS	6.0
Course	1
Period	First semester
Subject Type	Basic Education
Module	---

**1.Basic info****1.1.Recommendations to take this course****1.2.Activities and key dates for the course****2.Initiation****2.1.Learning outcomes that define the subject****2.2.Introduction****3.Context and competences****3.1.Goals****3.2.Context and meaning of the subject in the degree****3.3.Competences****BASIC COMPETENCES**

CB01. Students have demonstrated knowledge and understanding in a field of study that is part of the general secondary education curricular, and is typically at a level which, although it is supported by advanced textbooks, includes some aspects that involve knowledge of the forefront of their field of study.

CB02. Students can apply their knowledge to their work or vocation in a professional manner and have competences typically demonstrated through devising and defending arguments and solving problems within their field of study.

CB03. Students have the ability to gather and interpret relevant data (usually within their field of study) to inform judgments that include an important reflection on social, scientific or ethical issues.

CB04. Students can communicate information, ideas, problems and solutions to both specialist and non-specialist

audiences.

CB05. Students have developed those skills needed to undertake further studies with a high degree of autonomy.

#### GENERAL COMPETENCES

GC01. Able to acquire basic knowledge of the profession of industrial design, to combine that generalist knowledge and expertise with those who generate innovative and competitive proposals.

GC04. Ability to organize time effectively and coordinate activities to acquire new knowledge quickly and perform under pressure.

GC05. Capacity to collect, manage, analyze and synthesize information from various sources for the development of design projects and product development. Capacity to use this documentation to obtain conclusions aimed at solving problems and making decisions with initiative, creativity and critical thinking, in order to generate new product concepts, new ideas and solutions.

GC06. Ability to generate the necessary documentation for the proper transmission of ideas through graphics, reports and technical documents, models and prototypes, oral presentations in Spanish and other languages.

GC07. Ability to use and master techniques, skills, tools and techniques and communication and others specific of design engineering needed for design practice.

GC08. Ability to learn continuously, to develop autonomous learning strategies and to work in multidisciplinary groups with motivation and determination to achieve goals.

GC10. Ability to plan, budget, organize, direct and control tasks, people and resources.

#### SPECIFIC COMPETENCES

SC05. Ability to conduct effective and professional presentations through drawing and digital technologies using visual skills to communicate ideas and concepts quickly and efficiently, by selecting the most appropriate media and content.

### **3.4.Importance of learning outcomes**

### **4.Evaluation**

### **5.Activities and resources**

#### **5.1.General methodological presentation**

The learning process that is designed for this subject is based on the following:

6 credits of the subject corresponding to 150 hours of student work, organized in:

Lectures: 15h.

Problems and practices: 45h.

Personal work: 87h.

Exams and tests: 3h.

## **5.2.Learning activities**

### **1. Lectures.**

1 hour per week is devoted to the treatment of the theoretical content of the subject. The lecture and the use of ICT will be used to encourage the development of general skills and specific qualifications of the subject in the student. The theoretical explanations will be provided with examples that are clarifiers for the student. In order to achieve greater student participation, it will take place the implementation of active methodologies as the groups and roles dynamics working. Each block of theoretical content will carry the corresponding proposed activity.

### **2. Practical classes.**

3 hours per week to enhance the student's ability to represent industrial products through experimentation with different techniques of graphic representation. In each practical class you will work with a different product. It is necessary that the student go to practical classes with the corresponding material. Working with three-dimensional products and product images showing different views will be combined.

### **3. Supervised projects**

These works are develop both individually and in groups.

### **4. Independent work of the student.**

The student will apply content rights treaties to solve the proposed work. This activity is essential in the learning process and overcoming evaluation activities.

### 5.3.Program

The general contents of the course are:

- \* Drawing Basics: map out the proportions.
- \* Spatial and volumetric values in the representation of the product.
- \* Domain 2D supports, traditional materials and techniques: graphite, pastel, marker.
- \* Design of display panels.

The program that is offered includes the following activities:

- \* Analysis of the form.
- \* Analysis of the perspectives.
- \* Applying the most appropriate perspectives depending on the product.
- \* Visual memory.
- \* Natural copy.
- \* Study of human anatomy.
- \* Organization dimensional space.
- \* Labor field: search and analysis of certain products.
- \* Study of color: physical, psychological and symbolic analysis.
- \* Visual textures.
- \* Light points choice. Study of chiaroscuro.
- \* Products compositions and different types of funds\* Analysis of different types of reticles.
- \* Application of different types of reticles to the presentation panels.

\* Study of different typefaces.

#### 5.4. Planning and scheduling

Schedule sessions and presentation of works:

Contents by weeks	Contents
<b>Weeks 1-2</b>	Visual language and grammar expression graphics: Approaches to the form and product structure.
<b>Weeks 3-4</b>	Proportion analysis in product design
<b>Weeks 5-6</b>	Proportion analysis in product design
<b>Weeks 7-8</b>	Light and the product volumetric representation
<b>Weeks 9-10</b>	Design of highlight funds
<b>Weeks 11-12</b>	Presentation panels design
<b>Weeks 13-14</b>	Color treatment in product design

#### 5.5. Bibliography and recommended resources

- BB** Acaso López-Bosch, María. El lenguaje visual / María Acaso . 1ª ed. en esta colección Barcelona [etc.] : Paidós, D. L. 2011
- BB** Albers, Josef : Interacción del color / Josef Albers ; traducción de María Luisa Balseiro . - Ed. rev. y ampl. Madrid : Alianza, D.L. 2010
- BB** Design sketching : [including an extensive collection of inspiring sketches by 24 students at the Umea Institute of Design] / Erik Olofsson, Klara Sjölén [editores] ; Alexander Nemtsov ... [et al.] . 3rd ed. Klippan (Sweden) : Keeos Design Books, 2007

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- BB** Julián Pérez, Fernando : Dibujo para diseñadores industriales / [textos Fernando Julián, Jesús Albarracín ; realización de los dibujos y ejercicios Fernando Julián ... et al.] . - 3<sup>a</sup> ed. Barcelona : Parramón, 2009
- BB** Laborda Yneva, José. Teruel : guía de arquitectura = an architectural guide / José Laborda Yneva . - [1<sup>a</sup> ed.] Zaragoza : Caja de Ahorros de la Inmaculada, D.L. 1996
- BB** Powell, Dick. Técnicas avanzadas de rotulador / Dick Powell y Patricia Monahan . - [1a. ed.] Madrid : Hermann Blume, 1989
- BB** Samara, Timothy. Diseñar con y sin retícula / textos, selección de material y diseño de Timothy Samara ; [versión castellana, Mela Dávila] . - 1<sup>a</sup> ed., 3<sup>a</sup> tirada Barcelona [etc.] : Gustavo Gili, 2006
- BB** Sanz, Juan Carlos. El lenguaje del color : sinestesia cromática en poesía y arte visual / Juan Carlos Sanz . [2<sup>a</sup> ed.] Madrid : H. Blume, D.L. 2009
- BB** Serrano Tierz, Ana. Estética del producto industrial y su representación gráfica / Ana Serrano Tierz, M<sup>a</sup> Pilar Biel Ibáñez . - 1<sup>a</sup> ed. Zaragoza : Prensas de la Universidad de Zaragoza, 2012
- BB** Ware, Colin. Information visualization : perception for design / Colin Ware . 3rd ed. Amsterdam [etc.] : Elsevier : Morgan Kaufmann, cop. 2013
- BC** Arnheim, Rudolf. Arte y percepción visual : psicología del ojo creador : nueva versión / Rudolf Arnheim ; traducción de María Luisa Balseiro . - 2<sup>a</sup> ed., 4<sup>a</sup> reimp. Madrid : Alianza, imp. 2008
- BC** Brockmann, Josef. Sistemas de retículas : un manual para diseñadores gráficos = Sistemas de grelhas : um manual para designers gráficos / Josef Müller-Brockmann. - 3<sup>a</sup> ed. Barcelona : Gustavo Gili, 2012
- BC** Bürdek, Bernhard E.. Diseño : historia, teoría y práctica del diseño industrial / Bernhard E. Bürdek . - 1<sup>a</sup> ed., 4<sup>a</sup> tirada Barcelona : Gustavo Gili, 2005
- BC** Ching, Frank. Dibujo y proyecto / Francis D. K. Ching con Steven P. Juroszek ; [versión castellana, Santiago Castán y Carlos Jiménez Romera] . - 2<sup>a</sup> ed. amp. Barcelona : Gustavo Gili, D.L. 2012
- BC** Civardi, Giovanni : El claroscuro : cómo representar las luces y las sombras / Giovanni Civardi Madrid : El Drac, D.L. 2008
- BC** Dondis, D. A.. La sintaxis de la imagen : introducción al alfabeto visual / D.A.

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- Dondis . - 1a. ed., 16a. reimpr. Barcelona : Gustavo Gili, 2003
- BC** Edwars, Betty. El color / Betty Edwars Urano, 2006
- BC** Elam, Kimberly. Geometría del diseño : estudio en proporción y composición / Kimberly Elam ; [traducción técnica, Javier Alejandro Barrientos y Olivares] . 1<sup>a</sup> ed., 1<sup>a</sup> reimpr. México, D.F. : Trillas, imp. 2009
- BC** Frutiger, Adrian. Signos, símbolos, marcas, señales / Adrian Frutiger ; [versión castellana de Carles Sánchez Rodrigo] . - 8<sup>a</sup> ed. México : G. Gili, 2002
- BC** Gage, John. Color y cultura : la práctica y el significado del color de la antigüedad a la abstracción / John Gage ; traducción de Adolfo Gómez Cedillo y Rafael Jackson Martín. - 3<sup>a</sup> ed. Madrid : Siruela, 2001
- BC** Ghyska, Matila C.. Estética de las proporciones en la naturaleza y en las artes / Matila C. Ghyska . - [3a. ed.] Barcelona : Poseidón, D. L. 1983
- BC** González Olmedo, Salvador. : Cómo pintar al pastel / S.G. Olmedo . - 9a. ed. Barcelona : Parramón, 1999
- BC** Grandis, Luigina de. Teoría y uso del color / Luigina de Grandis . - [1a ed.] Madrid : Cátedra, Cop.1985
- BC** Heller, Eva. Psicología del color : cómo actúan los colores sobre los sentimientos y la razón / Eva Heller ; traducción de Joaquín Chamorro Mielke ; [revisión técnica de María García Freire] . - 1<sup>a</sup> ed., 10<sup>a</sup> tirada Barcelona : Gustavo Gili, 2009
- BC** Johansson, Kaj. Manual de producción gráfica : recetas / Kaj Johansson, Peter Lundberg, Robert Ryberg . Barcelona : Gustavo Gili, cop. 2004
- BC** Küppers, Harald. Atlas de los colores : más de 5500 matices con su caracterización y las instrucciones para su mezcla / Harald Küppers . 1<sup>a</sup> ed., reimpr. Barcelona : Blume, 1996
- BC** Küppers, Harald. Fundamentos de la teoría de los colores / Harald Küppers ; [versión castellana de Michael Faber-Kaiser] . - 1a. ed., 7a. tirada México, [etc.] : Gustavo Gili, 2005
- BC** Martín Montesinos, José Luis. Manual de tipografía : del plomo a la era digital / José Luis Martín Montesinos, Montse Mas Hurtuna . 6<sup>a</sup> ed. València : Campgràfic, 2007
- BC** Munari, Bruno : Diseño y comunicación visual : contribución a una metodología didáctica / Bruno Munari ; [versión castellana de Francesc Serra i Cantarell ;

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- revisión bibliográfica de Joaquím Romaguera i Ramió] . - 1<sup>a</sup> ed., 16<sup>a</sup> tirada Barcelona : Gustavo Gili, 2008
- Pipes, Alan. Dibujo para diseñadores : técnicas, bocetos de concepto, sistemas informáticos, ilustración, medios, presentaciones , diseño por ordenador / Alan Pipes ; [traducción, Ramón Martínez Castellote] . - 1<sup>a</sup> ed. en lengua española Barcelona : Blume, 2008
- Porter, Tom. Manual de técnicas gráficas para arquitectos, diseñadores y artistas 1 / Tom Porter, Bob Greenstreet ; ilustraciones de Sue Goodman ; [versión castellana de Santiago Castán] . 4<sup>a</sup> ed. Barcelona : Gustavo Gili, 1987
- Pozo Puértolas, Rafael. Diseño e industria gráfica / Rafael Pozo Puértolas . - [1a. ed.] Barcelona : Elisava ; CPG, 2000
- Sanz Rodriguez, Juan Carlos. Diccionario del color / Juan Carlos Sanz y Rosa Gallego. Madrid : Akal, 2001
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- VV.AA. Para empezar a pintar con rotuladores Barcelona : Parramón, 2002
- Wong, Wucius. Fundamentos del diseño / Wucius Wong ; [versión castellana de Homero Alsina Thevenet y Eugeni Rosell i Miralles] . 1<sup>a</sup> ed., 10<sup>a</sup> tirada Barcelona : Gustavo Gili, 2009
- Wong, Wucius. Principios del diseño en color / Wucius Wong ; [versión castellana de Emili Olcina i Aya y Eugeni Rosell i Miralles] . 2<sup>a</sup> ed. amp. Col. "GG Diseño", 6<sup>a</sup> tirada Barcelona : Gustavo Gili, 2008