25808 - Graphic expression II

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 271 - Bachelor's Degree in Industrial Design and Product Development Engineering
ECTS	6.0
Course	---
Period	Indeterminate
Subject Type	Basic Education, Compulsory
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

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.

SPECIFIC COMPETENCES

SC04. Capacity of spatial vision and knowledge of graphic representation techniques, both traditional methods of metric geometry and descriptive geometry, such as through applications of computer-aided design.

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

The learning process is based on the understanding of the theoretical contents explained to the all group during a master class and after that they are applied to some exercises and projects. This learning based on the practice and the experimentation allows to assimilate the theoretical content.

In other, some contents are introduced progressively during the master class and subsequently during the class of problems, where the group is divided into two other smaller groups, some exercises are done by the students with the help of the lecturer to assimilate the theoretical contents. During the laboratory class some projects will be made contents of the theoretical class.

Eventually, the method used to evaluate, certificate and correct the acquired capabilities of the student is during the supervised practice sessions where some projects that students have previously made, will be analyzed evaluated and corrected with them and it is possible to request the student to improve some aspects of the projects.

25808 - Graphic expression II

This methodology allows to teach the process to represent using graphic and technical tools using a practice method based on projects.

Finally with an exam there will be evaluated some acquired capabilities and knowledges, difficult to evaluate with projects

5.2.Learning activities

The learning planned activities are: theoretical classes, classes of problems and exercises, laboratory classes and supervised practice sessions

During theoretical classes the theoretical contents are developed

During the classes of problems there will be made some exercises by the students and after that commented and corrected; the objective is the acquisition and assimilation of the capabilities and knowledge explained during the theoretical classed and apply them to a real problem.

The laboratory classes are used to make some parts of the signature project using the previously acquired knowledge

The supervised practice sessions are used to evaluate, correct and clear all the aspects of the signature project where appear weaknesses and mistakes and to solve questions about the application of the knowledges to the practice.

5.3.Program

The signature is composed of these topics:

1. Standardization in technical drawing
2. Overall and individual drawings
3. Threated standard elements
4. Standard elements to provide Joint and security
5. Bearings and accessories
6. Gears
7. Roughness
8. Tolerances
9. Material designation
10. Springs
11. Plastic pieces
12. Welded assemblies
13. Metallic structures

5.4.Planning and scheduling

Week	Theoretical	Laboratory

25808 - Graphic expression II

1, 2 and 3	Standardization in Technical Drawing	Practice I: generation of templates and individual drawings.
	Overall and individual drawings. Material designation	
	Threated standard elements	
4 and 5	Standard elements to provide Joint and security. Bearings and accessories	Practice II: generation of list of elements, overall drawings and marks
	Gears	
6 and 7	Welded assemblies. Springs. Plastic pieces	Practice III: generator for shafts, threated joints and elements, keys, ribbed zones, etc.
8 and 9	Metallic structures	Practice IV: welded assemblies and plastic pieces
10 and 11	Toughness	Practice V: metallic sheet pieces
12 and 13	Tolerances	Practice VI: metallic structures. Use of roughness and tolerances
14 and 15	Tolerances	

Temporización y distribución de cargas

6 ECTS Credits: 150 hours / student

20 h. of master class (theoretical) (20 classes)

20 h. of class of problems and exercises (20 classes)

20 h. of laboratory classes (6/7 3 hours sessions)

25808 - Graphic expression II

25 h. of own study

60 h. practical work

5 h. for exams and projects presentations

5.5.Bibliography and recomended resources

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BC Calvo Lalanza, Manuel. Dibujo industrial : normalización / Manuel Calvo . - [1a. ed.] Zaragoza : Universidad, Secretariado de Publicaciones, 1991

BC Félez, Jesús. Dibujo industrial / Jesús Félez, Mª Luisa Martínez . - 3ª ed. rev., 1ª reimp. Madrid : Síntesis, 2002

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