

29703 - Graphic expression and computer aided design

Syllabus Information

Academic year: 2023/24

Subject: 29703 - Graphic expression and computer aided design

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 434 - Bachelor's Degree in Mechanical Engineering

ECTS: 6.0

Year: 1

Semester: 434-First semester o Second semester

107-First semester

Subject type: Basic Education

Module:

1. General information

This subject aims to develop the student's spatial vision, as well as to provide them with graphic representation tools that will allow them to communicate with third parties through a universal language, according to ISO standards. This will not only allow students to represent geometric figures and industrial parts, but also to interpret technical information that they will encounter in the future professional environment.

It is recommended to have a previous general knowledge of the contents of Technical Drawing of Bachillerato.

These approaches and objectives are aligned with targets 4.3, 4.4 and 5.1 of the Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>).

2. Learning results

- Master the resolution of problems that may arise in engineering.
- Develop skills and abilities that allow expressing graphic solutions with precision, clarity and objectivity.
- Acquire the capacity of abstraction to be able to see objects from different positions in space.

3. Syllabus

Topic 1.- System of Dimensioned Plans:

- Representation of roofs
- Land representation

Topic 2.- Dihedral System:

- Changes of plane, turns and abatissements
- Surfaces, intersections and developments

Standardization in Technical Drawing:

- Views and cuts
- Annotation
- Execution of plans

4. Academic activities

Master classes (14 h): sessions in which the different systems of representation and the rules of technical drawing will be explained.

Problem solving (28 h): sessions in which specific exercises of each topic will be presented to work and solve in class.

Laboratory practices (18 h): sessions in which you will learn how to use a CAD tool to solve exercises of each topic.

Exams, deliverables, work tutoring and personal work (90 h): includes hours of individual work, study, assessment and group tutoring of tutored exercises.

5. Assessment system

The grade of the subject is divided into the Graphic Expression part (75%) and the Computer Aided Design part (25%).

The minimum grade in both parts for averaging must be 4.0 out of 10.

a) Graphic Expression (75%)

If Continuous Assessment is chosen, 25% of the final grade will be obtained from the periodic delivery of exercises (10%) plus a partial exam (15%). The remaining 50% will be given by the grade of the global exam of the subject that will consist of a series of practical exercises of the different representation systems. In any case, the minimum grade for each part in order to be averaged must be 4.0 out of 10.

If a student does not obtain the minimum grade in the Continuous Assessment, or if they prefer, 75% of the final grade will be obtained by the grade of the global exam.

b) Computer Aided Design (25%)

The preferred assessment system will be the weighting of the grades of the deliverables at the end of each session of DAO practices (6 in total). This grade will be valid for both calls.

If a student does not achieve the minimum grade in the weighting of the submissions (4.0 out of 10), or if they prefer, they will do a specific DAO practical exercise on the day of the comprehensive exam.