

30003 - Graphic expression and computer-assisted design

Información del Plan Docente

Academic Year	2016/17
Academic center	110 - Escuela de Ingeniería y Arquitectura
Degree	436 - Bachelor's Degree in Industrial Engineering Technology
ECTS	6.0
Course	1
Period	Half-yearly
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

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 teaching process will be developed in four main levels:

a) theory classes,

30003 - Graphic expression and computer-assisted design

- b) exercise classes,
- c) laboratory classes and
- d) supervised practices; with increasing level of student participation.

In the theory classes, the constants Standardization Industrial Drawing and Descriptive Geometry will be taught, illustrated with numerous examples each topic. In the exercise classes, the students will solve exercises under the supervision of a teacher.

The laboratory practices will be developed in small groups, where the student will handle the software of Computer Aided Design.

The supervised practices will consist of individual or group homework of technical applications that the student will develop with the guidance and supervision of the teacher.

5.2.Learning activities

5.3.Program

The main contents are summarized in the following points:

STANDARDIZATION AND INDUSTRIAL DRAWING: Introduction to Graphic for Engineers. Standardization and Computer Aided Design. Drawing instruments and drafting machines. Formats, scales, line types and lettering. Orthographic views. Representation of threads and gears. Broken-out and sections. Dimensioning.

CIVIL ENGINEERING APPLICATIONS: The top view of the point, the line and the plane. Intersection of lines and planes. Resolution of roofs of buildings. The graphical representation of the top of the earth: Contours, drawing lines of constant slope, profiles, earthworks, road layout.

DESCRIPTIVE GEOMETRY: Techniques of labering points, lines and planes. Intersections of lines and planes. Parallelism. Orthogonality. Auxiliary views. Rotations. True size of a plane. The true-length diagram. Distances. Angle between lines and planes.

SURFACES: Contour apparent and representation of surfaces. Defining and types of surfaces. Sections and intersection of lines. Intersections of surfaces. Development of surfaces. Applications: Elbows and transition pieces.

COMPUTER AIDED DESIGN: Introduction and general operation of the software. Main screen. Command input. Function keys. File management. Environment of software. Drawing aids. Coordinate systems. Display commands. Drawing commands. Selecting entities. Reference entities. Editing commands. Working with layers. Text and shading. Dimensioning. Blocks: creation and insertion. Attributes. Attribute listing. Introduction to 3D design.

5.4.Planning and scheduling

5.5.Bibliography and recomended resources