

30103 - Graphic expression and computer-assisted design

Syllabus Information

Academic year: 2024/25

Subject: 30103 - Graphic expression and computer-assisted design

Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia
179 - Centro Universitario de la Defensa - Zaragoza

Degree: 425 - Bachelor's Degree in Industrial Organisational Engineering
563 - Bachelor's Degree in Industrial Organisational Engineering

ECTS: 6.0

Year: 1

Semester: First semester

Subject type: Basic Education

Module:

1. General information

The main objectives of the subject are, on the one hand, to develop the student's capacity for spatial vision, and on the other hand, to transmit skills that allow them to express with precision and clarity graphic solutions in the different systems of representation. The knowledge and use of Computer Aided Design (CAD) will provide students with communication tools applicable in all stages of their professional life.

To take this subject the student should have a previous general knowledge of the contents of the subject of Technical Drawing of Bachillerato.

Defence profile: The curriculum is in the process of being phased out. The content of this teaching guide is the same as that of the 2023-2024 academic year. It can be consulted on this same website by selecting the aforementioned academic year at the top.

2. Learning results

- They are proficient in solving graphical problems that may arise in engineering.
- Develop skills and abilities that allow to express with precision, clarity, objectivity and universality graphic solutions.
- Acquire the capacity of abstraction to be able to view an object from different positions in space.

3. Syllabus

COMPANY

1- Technical Drawing and Representation Systems

1-1.- Geometric Drawings. Basic Metric Normalization and Geometric Drawings Sketching Dimensioning Cutting and Sections Thread Representation Taper, Convergence, Inclination and Slope

1-2.- Industrial Technical Drawing. Advanced Standardization of Removable and fixed connecting elements. Surface Marks and Tolerances, Toothed Wheels, Bearings Assemblies and Parts. Materials

2.- Knowledge and Application in CAD-CAE Development

2-1 Knowledge and Application in CAD-CAE Development (I) Introduction to the Modeling Process Working with Sketches Introduction to 3D Operations Assemblies (Assemblies, Groups, U.F.) Exploded Documentation 2-2 Knowledge and Application in CAD-CAE Development (II) Schematic Development Software

4. Academic activities

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Theoretical-practical classes (30h): The theoretical concepts of the subject will be explained and practical examples will be developed to support the theory when necessary.

Laboratory practices (30h): The students will be divided into several small groups, where the concepts and procedures corresponding to CAD-CAE tools will be explained and applied..

Tutored practical work -Tutorials-: Tutored practical work, work and exercise follow-up, including attendance and individual attention, during the schedule published on the EUPLA website.

Personal study. Individual dedication necessary to consolidate a correct learning process.

Assessment test: Individual test where the student, in addition to the grading function, will be able to identify their degree of understanding and assimilation of the subject.

5. Assessment system

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CONTINUOUS ASSESSMENT SYSTEM

Participation (20%): Activities and work proposed in class; Attitude and direct observation of skills and abilities in the subject.

Individual/Group Work -CAD-CAE- (40%): Proposed work.

Assessment test (40%): Test of practical application of concepts and procedures.

All items will have a summative value as long as the value in each one of them is > 4

The students that in the continuous assessment have not passed some of the sections will have to present themselves in the corresponding callings ONLY of that part not passed or, if necessary, make the appropriate corrections.

OVERALL FINAL ASSESSMENT TEST

The student must opt for this modality when, due to their personal situation, they cannot adapt to the pace of work required in the continuous assessment system, has failed or would like to raise their grade after having participated in the continuous assessment system.

Individual work: CAD-CAE- (50%): Schematic, plan and assembly works.

Assessment test (50%): Test of practical application of concepts and procedures.

All items will have a summative value as long as the value in each one of them is > 4

6. Sustainable Development Goals

4 - Quality Education

5 - Gender Equality