Universidad Zaragoza

Year : 2019/20

28803 - Graphic expression

Syllabus Information

Academic Year: 2019/20
Subject: 28803 - Graphic expression
Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia
Degree: 424 - Bachelor's Degree in Mechatronic Engineering
ECTS: 6.0
Year: 1
Semester: First semester
Subject Type: Basic Education
Module: ---

1.General information

1.1.Aims of the course

The subject and its expected results respond to the following approaches and objectives:

- Start the future engineer in the spatial representation of graphics drawing and know the different representation systems.
- To understand the importance of the subject as a communication language at all levels of the industry. Apply, in the graphics documents, geometric drawing processes and technical drawing standards related to the industrial world.
- Knowledge and application of DAO programs (CAD-CAE) and its use as a 2D and 3D representation tool, if applicable.
- To be able to capture, through the resolution of practical cases published for this purpose, all the procedures and theoretical knowledge acquired, making an impact on their autonomous work, given the importance of non-contact credits in the new EHEA framework.
- Realization and printing of technical documents-plans.

1.2.Context and importance of this course in the degree

The subject aims to train students for the design and graphic representation of diagrams, geor

Belongs to one of the basic disciplines common to other Engineering Degrees. In particular, tł

1.3.Recommendations to take this course

In order to take this subject, the student should have prior general knowledge of the contents of the Baccalaureate Technical Drawing subject. In particular, you should know the tracings and constructions of triangles, quadrilaterals, regular polygons, geometric loci, technical curves, conical and cyclic curves.

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

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

- Lectures: theoretical activities conducted by the teacher, so that the theoretical support of the subject is given, highlighting the major issues, structuring them on chapters and/or sections and connecting them to each other.
- Classroom practice work/seminars/workshops: Theoretical discussion activities or practice work preferably performed in the classroom and requiring high student participation
- Lab Practice work: The total group of lectures will be divided into several groups according to the number of students enrolled, but never more than 20 students so that smaller groups are formed. CAD-CAE Practical Activities with the relevant software will be made in the Technical Office classroom.
- Individual tutorials: These are made on a one-to-one basis, at the department. They aim to help to solve problems that are the students might have, particularly those which for several reasons cannot attend group tutorials or need more personalized attention. These tutorials may be face-to-face or virtual (Moodle or e-mail) in a timetable published on the EUPLA website

4.2.Learning tasks

The course includes the following learning tasks, which involve the active participation of the students, so that, to achieve the learning outcomes (Considering the experimental level is high, which means a 2h a week for Theory, 2h for practice work and 6 for other activities), no redundancy intended with the above mentioned

- Theoretical-Practical classes (Classroom 30h): The concepts and procedures of the subject will be developed and practical examples as support will be developed. Also, problems and case studies will be done to complement the theoretical concepts studied
- Lab practice work (30h): Students will be divided into several groups not bigger than 20 students / being monitored by the teacher and they will develop the concepts and procedures in CAD-CAE
- Tutorials: Monitored autonomous activities: Although they will rather have a mixed nature between face-to-face and non-class tuition they have been considered separately and will be focused mainly to seminars and tutorials under the supervision of the teacher.
- Personal Study: Assimilation of the concepts and procedures for a proper learning process
- Assessment test: Individual test where the student shows his level of understanding and competence on the subject.

4.3.Syllabus

The course will address the following topics:

1 Technical Drawing and Representation Systems

1-1.- Geometric Plotting. Basic standardization.

- Sketching
- Dimension Drawing
- Views and Sections
- Thread Representation
- Cone-shaping, Convergence, Tilt or Pending

1-2.- Industrial Technical Drawing. Advanced Standards

- Detachable and Fixed Joint
- Tolerances. Fundamental concepts
- Gearwheels
- Bearings

2 Knowledge and application of CAD / CAE Tools

2-1.- Knowledge and Applications in the development of CAD / CAE (I).

- Introduction to the Modeling Process
- Working with Sketches
- Introduction to Operations
- Assemblies (Sets, Groups or Functional Units)

- DocumentationPresentation -Exploding-

2.2 Knowledge and Application in the Development of CAD-CAE (II)

- Scheme Development Software

4.4.Course planning and calendar

The Theory and Problem-Solving Lectures and the practical sessions in the laboratory are given according to the schedule set up by the School and it is published, prior to the start date of the course, on the EUPLA website, as well as the tutorial schedule.

The most significant dates -Planning of the Subject- (initial test, work proposals, and presentations and evaluation test) will be explained in the classroom, at the beginning of the course and in the Moodle Virtual Classroom.

The weekly schedule of the subject will be published at
http://www.eupla.unizar.es/asuntos-academicos/calendario-y-horarios

The dates of the global evaluation test (official calls) will be published at http://www.eupla.unizar.es/asuntos-academicos/examenes

4.5.Bibliography and recommended resources

RESOURCES:

- Access to the subject documentation using the Moodle platform
- Freehand drawing tools and Pendrive

http://biblos.unizar.es/br/br_citas.php?codigo=28803&year=2019