Universidad Zaragoza

Year : 2019/20

28825 - Manufacturing Processes II

Syllabus Information

Academic Year: 2019/20
Subject: 28825 - Manufacturing Processes II
Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia
Degree: 424 - Bachelor's Degree in Mechatronic Engineering
ECTS: 6.0
Year: 3
Semester: Second semester
Subject Type: Compulsory
Module: ---

1.General information

1.1.Aims of the course

The great variety of objects, pieces, products ... that there are in the market have been obtained through a more or less complex production process. This course provides the keys to determine some of them.

A production process is related to, product quality, product economy, functionality and application of that product

Relate these variables implies that the student will be able to select materials, machines, tools, measuring instruments, process, etc ... to manufacture the product

The subject is of a technological and applied nature. Selecting a production process is a global objective in the course.

1.2.Context and importance of this course in the degree

Each subject of the career consists of covering a field in the Technological and Scientific formation of the student, in this case, the selection of a process, the success in this task will condition the viability of the product, both technically and economically.

Directing and managing a company, or a part of it, and the manufacturing processes of an industrial component, mechanism or machine competently, is the objective that seeks to cover this subject.

Intervene in the design of components proposing improvements and alternatives, that fulfilling the specific objectives have a lower cost, weight, ... is also an objective to achieve.

1.3.Recommendations to take this course

There is no prerequisite to take this subject. However, the content to be taken will require the competency of the skills and abilities acquired, mainly, in the subjects of Graphic Expression, Statistics, Physics, Mathematics and Manufacturing Processes I.

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

1 Theory Classes: The theoretical concepts of the subject are explained and illustrative examples are developed as a

support to the theory when necessary, focus on relevant problems related to the different productive processes exposed.

2. Practical Classes: The teacher resolves practical problems or cases for demonstrative purposes. This type of teaching complements the theory shown in the lectures with practical aspects.

3. Laboratory Workshop. These classes are highly recommended for a better understanding of the concepts because those items whose calculation is done in theory classes are shown in working mode

4. Tutorials related to any concept of the subject. This activity is developed in a presidential mode with a defined schedule or through the messaging and forum of the virtual classroom Moodle.

4.2.Learning tasks

The course includes the following learning tasks:

- Lectures and Laboratory Workshop. It will take 4 hours per week till the 60 hours, necessary to accomplish the objectives of the subject study, will be reached
- Laboratory Workshop. The group is divided up into various groups, according to the laboratory capacity.
- Study and personal work. This non-face-to-face part is valued in about 90 hours, necessary for the study of theory, problem solving and revision of documents
- Individual tutorials. Each teacher will publish a schedule of attention to the students throughout the four-month period

4.3.Syllabus

The course will address the following topics:

- Topic 1. Processes of forming by plastic deformation. Introduction. Rolling. Forging. Extrusion. Deep drawing, Folding, Applications.Processes of plastics and composite forming.
- Topic 2. Processes of forming by subtractive manufacturing. Theory of metal machining. Cut parameters, Technology of cutting tools. Geometry. Cutting fluids, Highly efficient machining. Machines Introduction. Lathe, milling machine, drill, etc. Geometry shapes obtained and processes.

4.4.Course planning and calendar

The theory classes and problems are given in the timetable established by the centre, as well as the hours assigned to the practices.

The presentation of the works will be done on the last day of class on the subject.

4.5.Bibliography and recommended resources

http://biblos.unizar.es/br/br_citas.php?codigo=28825&year=2019