

28842 - Industrial Projects: Standardization and Legislation

Syllabus Information

Academic Year: 2019/20

Subject: 28842 - Industrial Projects: Standardization and Legislation

Faculty / School: 175 - Escuela Universitaria Politécnica de La Almunia

Degree: 424 - Bachelor's Degree in Mechatronic Engineering

ECTS: 4.0

Year: 4

Semester: Second semester

Subject Type: Optional

Module: ---

1.General information

1.1.Aims of the course

Understanding, sorting out and conveying information obtained from different sources.

Motivation and self-learning ability.

Making and interpretation of layouts and schemes based on appropriate regulations and symbology.

Application of current legislation to an Industrial Project.

1.2.Context and importance of this course in the degree

When carrying out a technical project, engineers must know how to deal with a number of law documents such as regulations, guidelines, recommendations, reports, rules, etc., where methods, calculations, guidelines, etc. are stated for most of the activities they perform, which they must know and be able to apply.

Each course of the degree aims at covering a field in the Technological and Scientific training of the student, in this case the correct application of the regulations and valid legislation when carrying out an industrial project. Success in this task will influence the feasibility of the project.

It is a supplementary course to the Project Office subject that reinforces and broadens concepts related to the preparation of technical documentation in project management.

1.3.Recommendations to take this course

This course does not have compulsory previous requirements, but students of the Degree in Mechatronic Engineering are advised to have passed, or at least taken, the subject of Technical Drawing, Computer Aided Design and Project Office. It is necessary to have basic knowledge in the use of CAD tools.

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 organization of the actual teaching will be based on the following guidelines:

- Lectures: Theoretical activities carried out mainly through exposition by the teacher, where the theoretical supports of the subject are displayed, highlighting the fundamental, structuring them in topics and or sections, interrelating them.
- Practice Sessions: Theoretical discussion activities or practice work preferably performed in the classroom and requiring high student participation and performance directed by the teacher.
- Autonomous works: Activity to be undertaken by the student personally. Usually done outside the classroom. Consultations in other media, application in OT-lab with the relevant software, laboratory or at home. Professor, at the request of the student, tracks the students work.
- Individual/group tutorials: These are the ones done through personalized attention, individually or in groups, from the teacher in the department. They aim to help to solve the problems that students come across, following a schedule published in the Web of the EUPLA. These tutorials can be on-site or virtual (Moodle).

4.2.Learning tasks

The course includes the following learning tasks:

UNIT 1/2:

- Lectures/practice sessions (10h): The theoretical concepts of the subject will be explained and illustrative practical examples will be developed as a support for the theory when it is deemed necessary.
- Classroom practice (10h): Students will, individually or in groups, perform part of the Practical Exercises and will be monitored by the teacher.

UNIT 3:

- Classroom practice (20h): It consists of making and Industrial Activity Project to legalize an industry. The classes will be practical lessons in the computer room. The student will develop the project with professor assistance.

Autonomous work and study: This off-site part is given about 60 hours of work, necessary for the study of theory, problem-solving and the production of school work (Practical Exercises) valid for assessment.

Tutorials and generic off-site activities: Each teacher will publish a schedule of Student service throughout the semester.

4.3.Syllabus

The course will address the following topics:

THEORETICAL CONTENTS

- Topic 1: Drawings and plans in projects
 - 1.1- Project Drawing Standardization. Standardization in Sketching, Dimension drawing, Threads and Sections and Representation of pieces.
 - 1.2- Standardization in metrology. Roughness and surface finish. Tolerances.
 - 1.3- Standardization in design elements. Joint Components. Bearings
 - 1.4. Set and detail view. (Content and distribution in the drawings). Standardized elements in a set. Conventions used in a set. How to present a Set and detail view plan. Exploded View plans. Representation and distribution.
- Topic 2: Standardization and regulation of projects
 - 2.1 - Standardization and regulation. Organizations for Standardization. Standardized and legislative documents. Useful Standards and regulations for industrial projects.
 - 2.2- Introduction to CE Marking. New Approach Directives. Essential requirements. Technical documentation.
- Topic 3: LEGALIZATION OF AN INDUSTRIAL ACTIVITY
 - 3.1. ACTIVITY PROJECT
 - Urban development constraints
 - Activity classification - Environmental law.
 - Other regulations
 - 3.2. INDUSTRIAL REGISTER
 - Facilities subject to regulations:
 - Electrical installations regulations.
 - Fire protection facilities.
 - Storage of chemical products.
 - Pressure equipment regulations.
 - Regulations for thermal installations in buildings.

- Safety Regulations for Refrigeration Installations

PRACTICAL CONTENTS

- Topic 1.
 - 1.1 Sketching. Views and sections. Metrology in laboratory
 - 1.2 Fittings (Tolerances). Selecting and calculating fittings.
 - 1.3 Sets and Detail View. Based on a cross-sectional view: Making plans according to current standards and a report describing the system.
- Topic 2.
 - 2. Working Regulations and legislation applicable to a project. Technical report about the regulations and legislation to be applied in a project/product.
- Topic 3.
 - 3. Development of an industrial activity project.

4.4.Course planning and calendar

The lectures and practical sessions in the laboratory are distributed following the schedule set up by the University, published, prior to the start date of the course, on the EUPLA website, as well as the tutorials.

The rest of the activities (handing-in of practice tasks, presentations, etc.) will depend on the planning of the Subject and will be communicated to the students at the beginning of the year.

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://eupla.unizar.es/asuntos-academicos/examenes>

4.5.Bibliography and recommended resources

http://biblos.unizar.es/br/br_citas.php?codigo=28842&year=2019