

Academic Year/course: 2022/23

28842 - Standardisation and Legislation of Industrial Projects

Syllabus Information

Academic Year: 2022/23

Subject: 28842 - Standardisation and Legislation of Industrial Projects

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

Degree: 424 - Bachelor's Degree in Mechatronic Engineering

ECTS: 4.0

Year: 4

Semester: **Subject Type:** Optional

Module:

1. General information

1.1. Aims of the course

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

- ? Introduce the future Engineer into the production of Projects, mainly Industrial, and provide him with knowledge on current legislation.
- ? Knowledge on current regulations.
- ? Search, interpretation and classification of documentation obtained from different sources.
- ? Develop, plan and manage technical projects.
- ? Motivation and self-learning ability.
- ? Making and interpretation of plans and diagrams based on the regulations and appropriate symbols.
- ? Apply regulations in the field of Industrial Safety, Industrial Quality and PRL.
- ? Develop critical ability and ethical responsibility in professional activities.
- ? Present the work carried out in a coherent way, both orally and in writing.

These approaches and objectives are in line with the following Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda (<https://www.un.org/sustainabledevelopment/es/>), in such a way that the acquisition of the course learning outcomes provides training and competence to contribute to their achievement to some degree:

- Goal 4: Quality Education
- Goal 7: Clean and Affordable Energy
- Goal 8: Decent Work and Economic growth
- Goal 9 : Industry, Innovation and Infrastructure

and, specifically, with the targets:

- ? Target 4.3 By 2030, ensure equal access for all men and women to quality technical, vocational and higher education, including university education.
- ? Target 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
- ? Target 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development
- ? Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix
- ? Target 8.2: Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors
- ? Target 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound

technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

1.2. Context and importance of this course in the degree

When carrying out a technical project, the engineer must know how to deal with a series of legislative documents such as regulations, guidelines, recommendations, opinions, standards, etc., where rules, methods, calculations, guidelines, etc. are set up for most of the activities that they perform, which they must know and be able to apply.

Each course that makes up the degree tries to cover a field in the Technological and Scientific training of the student, in this case the correct application of the current regulations and legislation when carrying out an industrial project. The viability of the project will depend on success in that task.

This is a complementary subject to the Technical Office course that reinforces and broadens concepts related to the production of technical documentation both in Project management and on the application of Industrial Safety, Industrial Quality and PRL regulations.

1.3. Recommendations to take this course

It is advisable to have passed the Graphic Expression courses (Year 1), to have completed those compulsory courses for the 2nd and 3rd years, and to have completed the Technical Office course. It is necessary to have basic knowledge in the application of CAD tools

2. Learning goals

2.1. Competences

Upon completion of the course, the student will acquire the following skills and abilities

- ? IG02. Ability to cope with the activities associated to Engineering Projects.
- ? GI03. Knowledge in basic and technological subjects that enable them to learn new methods and theories, and give them the versatility to adapt to new situations.
- ? IG06. Ability to manage specifications, regulations and mandatory standards.
- ? GI11: Knowledge, understanding and ability to apply the necessary legislation in the course of their duties as Industrial Technical Engineers in the field of industrial electronics.
- ? GC05. Ability to evaluate alternatives.
- ? GC08: Ability to find technical information, as well as its understanding and evaluation.
- ? GC10. Ability to produce technical documentation and to present it with the help of appropriate computer tools.
- ? GC12. Knowledge of safety, certification, industrial property and environmental impacts.
- ? GC17. Ability to correctly interpret blueprints and technical documentation.
- ? EI12: Knowledge and skills to organize and manage projects. Learn about the organizational structure and functions of a technical office whose purpose is to carry out and manage projects.

2.2. Learning goals

The student, to succeed in this course, must demonstrate the following results...

- ? Understand the concepts associated to the knowledge areas of the degree.
- ? Develop, plan and manage technical projects.
- ? Understand, order and convey the information obtained from different sources.
- ? Present in a coherent way, orally and in writing, the work done.
- ? Motivation and self-learning ability.
- ? Knowledge of current regulations.
- ? Production and interpretation of plans and diagrams based on the regulations and appropriate symbols.
- ? Manage the computer tools necessary for the design, preparation and development of projects.

2.3. Importance of learning goals

This course has a remarkable nature of information and knowledge of the regulations to follow, as well as the legislation to use, that is, it offers training with contents of application and immediate development, necessary for the production of reports or technical documents.

Through the achievement of the proper learning outcomes, the necessary ability for the understanding and knowledge of the regulations, graphic representation techniques and current legislation is acquired.

Its engineering nature offers training for the production of reports, technical documents and projects. It is, therefore, a course with a cross-curricular nature, with particular relevance, especially in those subjects with graphic design content and, specifically, in the Degree Tasks and Projects.

3. Assessment (1st and 2nd call)

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

To succeed in the course, the student must demonstrate that they have achieved the expected learning outcomes through any of the following procedures:

3.1.1 Continuous assessment

? Participation. - (10%) Attendance, at least 80%, to face-to-face activities (practice work, lectures, technical visits, etc.); Attitude and direct observation of abilities and skills and request-presentation of the project.

? Individual work 1 (30%):

- Documentation Delivered 15%
- Defense 10%

? Individual work 2 (30%):

- Documentation Delivered 15%
- Defense 10%

? Individual work 3 (30%):

- Documentation Delivered 15%
- Defense 10%

All activities must be passed individually (obtaining at least 50% of their total value), the grade being the result of the addition of all of them once prorated to their score when the previous condition is met.

The talks and technical visits are considered mandatory to pass the subject in the continuous assessment mode.

Students who have not passed all the activities described in the continuous assessment must take ONLY the ones failed:

? The projects must be delivered one week before the call date, agreeing with the teacher, if applicable, on the defense date.

3.1.2 Global Final Assessment Test (Official Calls)

Student must take this modality when they cannot adapt to the pace of work required in the continuous assessment system. To be evaluated in one of the calls, the work must have been delivered 10 days before the call date of the subject that is published on the EUPLA website, setting up the defense date with the teacher.

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

? Individual theoretical evaluation test (40%). The student must pass a theoretical and/or practical test in which the knowledge acquired during the course will be evaluated.

? Individual work (60%): Technical Project

- Digital delivery of the Project (30%)
- Individual defense of the submitted documentation (30%).

All activities must be passed individually (obtaining at least 50% of their total value), the grade being the result of the addition of all of them once prorated to their score when the previous condition is met.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

- The approach, methodology and assessment of this guide are intended to be the same for any teaching scenarios. They will be adapted to the social-health situation at any particular time, as well as to the instructions given by the authorities concerned.

The organization of teaching will be carried out following the following guidelines:

- ? Theory sessions: Lectures intended to explain the theory concepts of the subject, highlighting the fundamentals, structuring them in topics and / or sections and relating them to each other.
- ? Practice sessions/seminars/workshops: The teacher solves problems or practical cases. This type of teaching complements the theory presented in the lectures with practical tasks.
- ? Self-learning practice sessions: Tasks that the student has to carry out personally, normally outside the classroom. Consultations in other media, application in the computer room with the relevant software, in the laboratory or at their homes. The teacher, at the request of the student, monitors the work in the tutorials.
- ? Supervised practical work - Individual/group tutorials-: These are carried out through personalized attention. They aim to help solve the doubts that the students may come across, particularly those who for different reasons cannot attend theory sessions or need more personalized attention. These tutorials may be face-to-face or virtual. (Moodle).

4.2. Learning tasks

The program offered to the student to help them achieve the expected results includes activities that involve their active participation. This course is organized as follows:

- ? Theory sessions (30h): The theoretical concepts of the subject will be explained and illustrative practical examples will be developed to support the theory when necessary.
- ? Classroom practice sessions/seminars/workshops: (30h): Students will be divided into several groups, being tutored by the teacher. Concepts and procedures of computer tools will be applied, especially those of CAD-CAE.
- ? Supervised practical work -Tutorials: Supervised practice tasks, monitoring of work and exercises, which includes assistance and individualized or group attention, as the case may be, at times published on the EUPLA website. (Included in the 6 weekly hours that the student must dedicate to the subject).
- ? Personal study: Individual work necessary to consolidate a correct learning process. (Included in the 6 weekly hours that the student must dedicate to the subject).

4.3. Syllabus

- ?Graphic representation? Standardization
- ? Types of lines in the graphic representation
- ? Dimensioning
- ? Tolerances
- ? Superficial finishings
- ? Blueprints
- ? Legends
- ? Sketches

Industrial Project / Technical Report

- ? Contents
 - Basic documentation
 - Other documents
- ? Application
- ? Types of Industrial projects

Relations with the public administration

- ? Town Councils
- ? Province Councils
- ? Community Councils
 - Industrial records
- ? Others (supplying companies)

Industrial Safety

- ? CE sealing
- ? RD 1215 Law Decree 1215/1997, of July 18, which establishes the minimum health and safety provisions for the use of work equipment by workers

Legislation

- ? Law 38/1999, of November 5, on Building Regulations
- ? Law 31/1995, of November 8, on the prevention of Occupational Risks
- ? Law Decree 314/2006, of March 17, passing the Technical Building Code
- ? LUA - Law Decree 1/2014, of July 8, of the Government of Aragon, passing the revised text of the Aragon Urban Planning Law
- ? Law 11/2014, of December 4, Prevention and Environmental Protection of Aragon

4.4. Course planning and calendar

The lectures and 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 relevant dates - Course Planning - (Project proposals and delivery-Presentation, etc.) will be given in the teaching sessions and posted in the Moodle Virtual Platform.

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

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

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=28842>

RESOURCES:

Access to the Course documentation through the Moodle platform.