

## 30109 - Environmental engineering

### Syllabus Information

**Academic year:** 2024/25

**Subject:** 30109 - Environmental engineering

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

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

**ECTS:** 6.0

**Year:** 1

**Semester:** Second semester

**Subject type:** Compulsory

**Module:**

### 1. General information

Objectives of the subject:

- To show the basic concepts of analysis of environmental factors and their interrelation.
- To show the concepts that allow the analysis of the interactions between human activity and the environment.
- Show the tools for the identification, assessment and mitigation of environmental impacts.
- To show the general principles of the tools available for good environmental management.
- To provide knowledge of the existing basic environmental regulations (European, national and regional).
- Ability to promote critical and systemic thinking.
- Ability to generate new questions to inspire new lines of research and development of socially relevant and pertinent knowledge.
- Potential to generate alliances with other social agents (Public Administrations, companies, social entities) for the joint development of knowledge and its practical application.

### 2. Learning results

In order to pass this subject, students will have to demonstrate the following results...

- Recognises and knows how to assess the effect produced by pollutants on the receiving environment: atmosphere, water and soil.
- Knows how to analyse an industrial activity and identify the environmental problems it may generate.
- Knows how to plan a pollution prevention and control strategy in specific cases.
- Knows how to select the most appropriate technique for the purification and/or control of pollution in specific cases.
- Is capable of dimensioning simple pollution control installations in water, atmosphere and soil.
- Analyses the impact exerted on the environment by different industrial activities.
- Is able to apply the fundamentals of an Environmental Management System in an industrial activity.
- Knows the basic regulations related to the environment (dumping, atmosphere, waste, environmental impact, and integrated pollution control) and the obligations deriving therefrom.
- Knows and applies the SDGs.

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### 3. Syllabus

#### 1.- THEORETICAL CONTENTS

The syllabus of the subject is developed around the following thematic blocks:

- Topic 1 Introduction to the Environment.
- Topic 2 Environment and business.
- Topic 3 Pollution.
  - Atmospheric pollution
  - Water pollution
  - Waste
- Topic 4 Environmental Policies.
- Topic 5 Introduction to Environmental Management Systems

#### 2.- PRACTICAL CONTENTS

Each of the topics described in the previous section is associated with practical exercises on real cases of application in different companies in the sector: engineering companies, industries and the free practice of the profession. (Technical visits and talks by professionals will be carried out).

### 4. Academic activities

Presentation of the topics, the teaching staff will carry out small practical exercises throughout this presentation to facilitate the learning of the subject.

At the end of the subject and through practical experiences (lectures and / or views) students will learn about a part of the company related to the environment and that has been studied previously in the subject. The resolution will be worked on by the students in teams. An evaluation rubric will be provided to facilitate the completion of these items.

### 5. Assessment system

The assessment process will include two types of action:

A continuous assessment system, to be carried out throughout the learning period.

A global assessment test that reflects the achievement of the learning outcomes, at the end of the teaching period.

#### 1.- Continuous assessment system.

The continuous assessment system will include the following group of gradable activities:

- Individual and group activities in class.
- Exercises, theoretical questions, visits to companies, technical talks and proposed work.
- Written assessment tests

The written assessment tests will include theoretical and/or practical questions on the different subjects to be assessed, with a total number of two.

A fundamental requirement for passing the subject by continuous assessment is to attend a minimum of 80% of the classroom activities of the subject.

The final grade of the course will be weighted taking into account that 70% corresponds to the theoretical tests and 30% to the practical tests.

## 2.- Overall final assessment test.

As in the previous assessment methodology, the purpose of the overall final assessment test must be to check whether the learning outcomes have been achieved. Students who are going to use this evaluation system will take this test in the same exam session that includes the theory, activities, etc. carried out throughout the course.

## 6. Sustainable Development Goals

5 - Gender Equality

9 - Industry, Innovation and Infrastructure

13 - Climate Action