

30109 - Environmental engineering

Syllabus Information

Academic year: 2023/24

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 among them.
- To show the concepts that allow the analysis of the interactions between human activity and the environment.
- Show the tools for identification, valuation and mitigation of environmental impacts.
- To show the general principles of the tools available for a good environmental management.
- To present the existing basic environmental regulations (European, estatal and regional).
- Ability to analyze social, economic and environmental realities and, therefore, to identify and characterise the challenges we must face.
- Ability to outline solutions to the problems of our society.
- 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.

These approaches and objectives are aligned with the following Sustainable Development Goals (SDGs).

During this academic year we will focus on Goals 5, 6, 9, 12 and 13.

2. Learning results

The student, in order to pass this subject, must demonstrate the following results...

- Recognize and know how to assess the effect of pollutants on the receiving environment: atmosphere, water and soil.
- Know how to analyze an industrial activity and identify the environmental problems it may generate.
- Know how to plan a pollution prevention and control strategy in specific cases.
- Know how to select the most appropriate technique for purification and/or contamination control in specific cases.
- Be capable of dimensioning simple water, atmospheric and soil pollution control installations.
- Analyze the impact of different industrial activities on the environment.
- Know the fundamentals of an Environmental Management System in an industrial activity.
- To know the basic regulations related to environmental matters: discharges, atmosphere, waste, environmental impact assessment, integrated pollution control; and their derived obligations.
- Know and apply the SDGs.

3. Syllabus

1.- THEORETICAL CONTENTS

The syllabus is developed around the following thematic blocks:

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

2.- PRACTICAL CONTENTS

Each topic presented in the previous section is associated with practical exercises on real cases of application in different companies in the sector: engineering, industry and the free practice of the profession. (Visits will be made to TechnicalVisits , Talks by Professionals)

4. Academic activities

Expository presentation of the topics presented, the teacher will perform throughout this presentation small practical exercises to facilitate the learning of the subject.

At the end of the subject and through practical experiences (lectures and / or views) the student will know a part of the company related to the environment and that has been previously studied in the subject, In the course of the activity a challenge or an activity will be raised by the company. The resolution will be worked on by the students in teams. An assessment rubric will be provided to facilitate the completion of these items.

5. Assessment system

The student must demonstrate that they have achieved the expected learning results by means of the following assessment activities.

The assessment process includes two types of actions:

A continuous assessment system, which will be carried out throughout the entire teaching period.

A global assessment test, reflecting the achievement of the learning results, at the end of the teaching period.

Continuous assessment system:

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

- Individual and group activities in class.
- Exercises, theoretical questions and proposed works.
- Written assessment tests

The written assessment tests will be carried out in order to regulate learning, stimulate the distribution of effort over time and provide a more individualized evaluation tool for the educational process . These tests will include theoretical and/or practical questions on the different subjects to be evaluated, and their total number will be two,.

A fundamental requirement to be able to pass the subject by continuous assessment is to attend a minimum of 80% of the face-to-face activities.

The final grade of the subject will be weighted taking into account that 70% corresponds to the theoretical tests (written assessment tests) and 30% to the practical tests (individual and group activities in the classroom, exercises and proposed theory and practice).

2.- Global final assessment test.

As in the previous evaluation methodology, the overall final evaluation test must have the following characteristics the purpose is to check if the learning results have been achieved, as well as to contribute to the acquisition of different competences, which should be carried out by means of more objective activities if possible.

The global assessment test will have the same group of activities. Students who are going to use this assessment system will have to hand in the same works elaborated in the continuous assessment system and take the same exams that were taken in the continuous system, only that they will be taken in the same exam session.