

60642 - Environmental Chemistry

Syllabus Information

Academic year: 2024/25

Subject: 60642 - Environmental Chemistry

Faculty / School: 100 - Facultad de Ciencias

Degree: 540 - Master's in Industrial Chemistry

ECTS: 8.0

Year: 1

Semester: Annual

Subject type: Compulsory

Module:

1. General information

The subject and its expected results respond to the following objectives:

To provide students with tools that allow them to carry out different activities in the industrial chemical sector, knowing and complying with environmental requirements. To teach students the mechanisms that influence the environment as well as the knowledge and skills related to sustainability. To provide them with tools to develop a correct environmental chemistry within a company.

These goals are aligned with the following Sustainable Development Goals (SDGs) of the United Nations Agenda 2030 (<https://www.un.org/sustainabledevelopment/es/>), so that the acquisition of the learning results of the subject provides training and competence to contribute to some extent to their achievement: SDGs 3, 4, 6, 7, 8, 9, 9, 11, 12, 13, 14 and 15.

2. Learning results

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

To conduct activities in the industrial chemical sector knowing and complying with environmental requirements.

To understand the mechanisms that influence the environment and acquire the necessary commitment to contribute to its conservation, as well as to have the knowledge and skills related to sustainability from the point of view of chemistry.

To value environmental knowledge as a competitive factor and differentiating element.

To solve practical and real cases by applying the knowledge acquired.

To know the techniques and tools to carry out a correct environmental chemistry in a company as well as a chemical control of the environment.

To prepare reports and oral presentations.

To select appropriate analytical methods

3. Syllabus

Block 1: Introduction to the environment and legal framework.

Block 2: Chemistry of the atmosphere and atmospheric pollution

Block 3: Chemistry of the hydrosphere and water pollution.

Block 4: Geochemistry and soil contamination.

Block 5: Waste.

Block 6: Polluting industrial products. Chemical Risk Analysis.

Block 7: Environmental Analysis.

Block 8: Environmental impact assessment.

Seminars.

4. Academic activities

The program offered to the student to help them achieve the expected results comprises activities related to the acquisition of advanced knowledge in environmental chemistry including theoretical aspects, question solving, and practical cases derived from the theoretical part. This type of activity is carried out in a classroom in a single group.

Seminars including:

Exposition of real cases related to environmental chemistry.

Oral presentation and critical discussion with industry professionals.

Tutorials to solve doubts and follow up on assignments.

5. Assessment system

First Call

1. Completion of two written tests covering theoretical and practical aspects: 70% of the final grade.

The first one, corresponding to the first semester, will be held during the January exam period (T1). The second test will assess the second semester (T2), and also the first semester for those students who have not passed it in January (T1).

The final grade for this part will be the average of T1 and T2.

2. Completion of assignments, oral presentations and discussion of the same: 30% of the final grade.

1 and 2 must be passed separately and the final grade for the subject will be the weighted average of both. If the student passes one of the parts, the grade will be saved for the second call.

Second Call

1. Written test where the knowledge acquired throughout the term will be assessed: 70% of the final grade.

2. Completion of assignments, oral presentations and discussion of the same: 30% of the final grade.

6. Sustainable Development Goals

6 - Clean Water and Sanitation

12 - Responsible Production and Consumption

13 - Climate Action