

66213 - Environmental Management in Industry

Syllabus Information

Academic year: 2024/25

Subject: 66213 - Environmental Management in Industry

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 531 - Master's in Chemical Engineering

ECTS: 6.0

Year: 1

Semester: First semester

Subject type: Compulsory

Module:

1. General information

The objective of the subject is to provide the student with a general knowledge of the different environmental obligations and authorizations that may be required from the industry regarding waste, emissions and discharges. Also, it aims to help the student to know the voluntary management systems that may make the environmental management of companies easier. Finally, it aims to teach the student different industrial processes, the problems they generate and the possible solutions considered through the best available techniques.

2. Learning results

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

To know the legal requirements for an industrial process from an environmental point of view. To analyse the specific environmental aspects of industrial processes.

To apply the knowledge about processes in order to identify better available technologies for a specific industrial process from BREF reference documents.

To be able to find the companies that provide environmental services to industries, such as waste disposal or emissions to the atmosphere.

To be able to reason critically about real cases.

To know the environmental management systems that can be applied to the industry's internal functioning.

3. Syllabus

BLOCK 1.- INTRODUCTION

1. Competency distribution among administrations.

2. Regulation of relationships between company-administration.

BLOCK 2.- ADMINISTRATIVE AUTHORIZATIONS.

3. Administrative authorizations regime and requirements: waste, atmosphere, discharges and soils.

4. Integrated environmental authorizations.

5. Promotion of environmental actions: environmental taxes and validation certificates

BLOCK 3.- MANAGEMENT SYSTEMS

6. Strategic context for a sustainable development. Agenda 2030. Environmental aspects.

7. Environmental management systems in organizations.

8. Implementation of Agenda 2030 and SDG in organizations.

BLOCK 4.- ENVIRONMENTAL ASPECTS OF TYPICAL PRODUCTIVE PROCESSES

9. Environmental impact of typical industries in various sectors. Visit to facilities.

4. Academic activities

Master classes (25 h) where the theory will be taught, and model problems will be solved on the board.

Face-to-face problem solving and case studies classes (20 h) by the student under the supervision of the teacher.

Special practice sessions (15 h) corresponding to visits to companies, expert talks, thematic seminars or similar.

Application works (25 h) that can be done individually or, preferably, in groups. Teachers will propose different topics or accept proposals from students.

Individual study (49 hours).

Personalized tutoring teacher-student (10 h).

Assessment (6 h). There will be a global text to assess all the theoretical and practical knowledge achieved by the student.

5. Assessment system

The student must demonstrate achievement of the intended learning results through the following assessment activities:

Option 1:

Assessment is global and includes:

1. Production of different academic works (T) proposed in the subject. These works will be assessed taking into account the content, clarity and thoroughness, application of the contents taught in the subject, concept understanding and the correctness of the presentation.
- 2.- Presentation and oral debate (PDO). Students must orally present and defend some of the academic works.
- 3.- Exam (E) that will consist of a written test with different types of theoretical and practical questions. The exam will have two different parts: one corresponding to blocks 1 and 2 and the other to block 3. A minimum grade of 4.0 out of 10 is required in each part so its result can be averaged and considered as passed.
- 4.- Direct observation on the active participation in classes (O). The grade of the subject will be calculated as follows: $\text{Grade} = 0.45T + 0.10PDO + 0.40E + 0.05O$

A minimum grade of 4.0 out of 10 is required in each of the three first items so it can be averaged and the subject considered as passed:

Option 2:

An exam similar to the one in Option 1 (60% of the final grade) and an individual work to be delivered and presented in public (40% of the final grade). A minimum grade of 4.0 out of 10 is required in each of the items so it can be averaged and the subject considered as passed.

6. Sustainable Development Goals

4 - Quality Education

9 - Industry, Innovation and Infrastructure

12 - Responsible Production and Consumption