

29831 - Environmental engineering

Syllabus Information

Academic year: 2024/25

Subject: 29831 - Environmental engineering

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura
326 - Escuela Universitaria Politécnica de Teruel

Degree: 440 - Bachelor's Degree in Electronic and Automatic Engineering
444 - Bachelor's Degree in Electronic and Automatic Engineering

ECTS: 6.0

Year: 4

Semester: First semester

Subject type: Compulsory

Module:

1. General information

The main objective of this subject is to provide students with the scientific and technical knowledge that will enable them to identify and control water, air and soil pollution, providing them with quality training in the field of environmental assessment, management and environmental planning, all aimed at the protection of health and the environment. The student will acquire training in minimization techniques or measures and treatment technologies, especially in the industrial sector.

2. Learning results

- Recognize and 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.

3. Syllabus

- Unit 0. Introduction: Current environmental problems. Agenda 2030 and Sustainable Development Goals.
- Block 1. Water pollution.
- Block 2. Atmospheric pollution.
- Block 3. Contamination by waste.
- Block 4. Integrated environmental management tools.

4. Academic activities

- Participative lectures (30 hours). Expository sessions of theoretical and practical content.
- Problem solving classes and case studies (15 hours). Exercises and/or specific practical cases of will be carried out, directly applicable or complementary to what has been covered in the lectures. They will also be used for monitoring of teaching assignments.
- Practical laboratory and simulation classes (10 hours). Experimental practices will be carried out in the laboratory as well as simulation practices through the use of computer tools.
- Teaching assignments (10 hours). It will consist of supervised practical work during the semester.
- Special practices. Visits to facilities related to Environmental Engineering on a voluntary basis, always and when feasible. It is estimated that 5 hours will be dedicated to study and personal work.
- Personal study and work (80 hours).
- Assessment tests (5 hours)

At the EUPT (Teruel), the degree is offered in two different modalities: on-site and blended learning. For the modality, all of the above applies. In the blended mode, students will have at their disposal the material of work (Moodle platform) and bibliographic references that will allow them to follow the course in an autonomous way. The solving of problems and cases, as well as the

explanation of the content of the laboratory practices, will be supported by teaching videos and virtual tutorials.

5. Assessment system

The subject will be assessed by the continuous assessment system by means of the following activities:

1. Laboratory practices and simulation (15% of the grade, minimum 5 out of 10). The assessment of each practice will be done through the delivery of reports and/or written tests.

At the EUPT (Teruel), the degree is offered in two different modalities: on-site and blended learning. For the modality, the above mentioned applies. In the blended mode, laboratory and simulation practices will be evaluated through the completion of teaching tasks and exercises that allow students to interpret experimental data provided by the faculty, perform simulations and analyze case studies.

2. Practical work (20% of the grade, minimum 5 out of 10). The evaluation will be carried out through the presentation of the papers in the format indicated by the faculty and/or the completion of written tests.

The student who does not pass these activities during the teaching period will have the opportunity to pass them by means of an individual written test in the two official calls.

3. Written tests:

- Intermediate test (15% of the grade, minimum 5 out of 10). Individual written test on part of the contents of the subject.
- Final test (50% of the grade, minimum 5 out of 10). Individual written test on the rest of the contents of the subject not evaluated in the intermediate test.

If the student does not pass the intermediate test, the final test will consist of a written test of all the contents of the subject, which represents 65% of the final grade (minimum 5 out of 10).

The student who does not opt for the procedure described above will have the right to take a global test of the subject in the exam period established by the center. This global test will be available in both calls.

6. Sustainable Development Goals

6 - Clean Water and Sanitation

9 - Industry, Innovation and Infrastructure

12 - Responsible Production and Consumption