

30170 - Environmental engineering

Información del Plan Docente

Academic Year	2018/19
Subject	30170 - Environmental engineering
Faculty / School	179 - Centro Universitario de la Defensa - Zaragoza
Degree	563 - Bachelor's Degree in Industrial Organisational Engineering
ECTS	4.5
Year	2
Semester	Second semester
Subject Type	Compulsory
Module	---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The learning process designed for this subject is based on the development of theoretical-practical activities focused on environment pollution. The particular contents described in the verified manuscript of the degree and the corresponded credits are patented in these activities. The aim of these activities is to provide student with the expected learning outcome and the habits which help them in their professional and personal life.

4.2.Learning tasks

The teaching methodology consist of next active learning activities: lectures, practical sessions, problem-based learning, seminars, exams and finals. These activities could be complemented with others like problem solving tasks, mini-project

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work and lab reports redaction and the personal study.

Through the Moodle platform the professoriate makes the activities program accessible for the students with its corresponded username and password in the web site <http://moodle.unizar.es>.

Teaching materials

During the course, audio-visual and paper-based materials will be used. Documents necessary for the development of the course will be provided in advance in person and through the Moodle platform: <http://moodle.unizar.es>.

4.3.Syllabus

Topic 1. Engineering concepts applied to the environment

1.1. Introduction to engineering calculations

1.2. Mass balances

1.3. Fluid flow concepts

1.4. Separation processes

Topic 2. Water pollution

2.1. Introduction

2.2. Pollutants and its characterization

2.3. Depuration treatments

Topic 3. Atmospheric pollution

3.1. The atmosphere

3.2. Air pollution

3.3. Atmospheric pollution control

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Topic 4. Waste pollution

4.1. General concepts

4.2. Properties of the waste

4.3. Waste treatments

Topic 5. Environmental Management System (EMS)

5.1. Introduction

5.2. EMS Planning

5.3. EMS Implementation

5.4. EMS Certification

4.4.Course planning and calendar

Information about class calendars, class schedules and exam schedules will be published through the center website: <http://cud.unizar.es>.

Teachers will inform the students in person about the different activities that will be carried out during the course, all this information will be also available through the Moodle platform: <http://moodle.unizar.es>

4.5.Bibliography and recommended resources

Teaching materials or notes of the subject available in the Moodle Platform