# 29709 - Environmental engineering

**Información del Plan Docente**

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|---|---|
| **Academic Year** | 2016/17 |
| **Academic center** | 110 - Escuela de Ingeniería y Arquitectura |
| **Degree** | 434 - Bachelor's Degree in Mechanical Engineering<br>330 - Complementos de formación Máster/Doctorado |
| **ECTS** | 6.0 |
| **Course** | XX |
| **Period** | Indeterminate |
| **Subject Type** | ENG/Complementos de Formación, Compulsory |
| **Module** | --- |

## 1.Basic info

## 1.1.Recommendations to take this course

## 1.2.Activities and key dates for the course

## 2.Initiation

## 2.1.Learning outcomes that define the subject

## 2.2.Introduction

## 3.Context and competences

## 3.1.Goals

## 3.2.Context and meaning of the subject in the degree

## 3.3.Competences

## 3.4.Importance of learning outcomes

## 4.Evaluation

## 5.Activities and resources

## 5.1.General methodological presentation

## 5.2.Learning activities

## 5.3.Program

Module 1. Introduction. Environmental issues. Basics of prevention and control of pollution.

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Module 2. Water pollution

Unit 1. Water cycle.

Unit 2. Types of water pollutants.

Unit 3. Physical processes/operations in water treatment.

Unit 4. Biological processes/operations in water treatment.

Unit 5. Chemical processes/operations in water treatment.

Unit 6. Water treatment facilities.

Module 3. Air pollution

Unit 1. The atmosphere and its pollution problems.

Unit 2. Types of air pollutants: Primary pollutants

Unit 3. Pollutant measurements

Unit 4. Types of air pollutants: Secondary pollutants

Unit 5. Particle collection systems.

Unit 6. Pollutant control systems.

Module 4. Residues

Unit 1. Introduction.

Unit 2. Residues management and control

Unit 3. Recycling.

Unit 4. Biological treatments for residues.

Unit 5. Thermal treatment for residues.

Unit 6. Landfills.

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Module 5. Environmental impact assessment (EIA) and environmental management systems (EMS): basic aspects.

**Laboratory sessions**

- Lab session 1: Industrial wastewater treatment by physical/chemical processes.
- Lab session 2: Use of software tools for the simulation and design of wastewater treatment facilities.
- Lab session 3: Use of software tools for the simulation and design of gas pollution control facilities.
- Lab session 4: Stabilization of residues containing dangerous substances.
- Lab session 5: Use of software tools for the management of residues containing dangerous substances.

## 5.4.Planning and scheduling

## 5.5.Bibliography and recomended resources