

25240 - Environmental chemistry

Información del Plan Docente

Academic Year	2016/17
Academic center	201 - Escuela Politécnica Superior
Degree	277 - Degree in Environmental Sciences
ECTS	6.0
Course	
Period	Four-month period
Subject Type	Optional
Module	---

1. Basic info

1.1. Recommendations to take this course

This subject is offered in the [English Friendly](#) form

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

The course involves the use the following teaching/learning methods and activities:

1. **Lectures** : The theoretical sessions consisting mainly in participatory lectures.
2. **Lab sessions** : During these sessions students learn to handle laboratory equipment to conduct experiments and to interpret and present the results.
3. **Problem seminars** : The proposed problems may be discussed in group. The participation of students will be

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promoted intensively.

4. **Academic project** : Students will work in group in a topic of interest for the subject under the supervision of the professor. Each group will have tutoring sessions in which they will present their progress and emerging difficulties to the professor. Finally, all groups will orally present the most important aspects of the work, opening a short discussion on the topic afterwards.
5. **Complementary activities** (when possible): visits to places of interest for the subject, videos viewing, debates, comment on articles and news, conduct seminars-conferences on specific issues of particular relevance, etc.
6. **Self-study and work**
7. **Evaluation**

5.2.Learning activities

Learning methods and strategies designed for the subject include the following activities...

1. **Lectures**: The lectures are designed to provide the students with knowledge about the chemistry and evolution of different pollutants in the environment, as well as an introduction to Sustainable chemistry. It will be encouraged an interactive environment that will be used to discuss and reinforce the lecture contents.
2. **Lab sessions** : This activity requires self-study of the protocols and instructions for planned activities before going to the lab. Student will complete individual questionnaires just before starting in the lab and after finishing the session.
3. **Problem seminars** : This activity complements the contents presented in lectures by problem-solving sessions. A very active participation of the students in the sessions will be promoted.
4. **Academic project** : This activity requires the student to work in a group of students on a topic related to the subject that extends the contents of lecture, and finally they will elaborate a written report and present orally the most relevant of it. The tutor will give the student regular feedback on progress. In addition, the project requires the student to construct logical arguments to communicate effectively.
5. **Complementary activities** (when possible): visits to places of interest for the subject, videos viewing, debates, comment on articles and news, conduct seminars-conferences on specific issues of particular relevance, etc.

In addition to the mandatory activities of this course, other voluntary activities (some of the complementary activities) may be offered. Tasks resulting from these activities will be evaluated and may add extra points to the final mark of the subject (up to 1 point/10).

5.3.Program

Lecture

Lesson 0 . General issues about the course.

MODULE I. Environmental chemistry.

Lesson 1. Environmental performance of pollutants: Transportation and/or accumulation.

Lesson 2 . Abiotic transformation and biotransformation of pollutants.

Lesson 3. The impact of the chemical industry on the environment.

Lesson 4. Pollutants originating from the chemical industry and their environmental degradation, accumulation and effect; pesticides, hydrocarbons (petroleum), polycyclic aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), dioxins (PCDD), dibenzofurans (PCDF), polybrominated diphenylethers (PBDE), polymeric materials, surfactants and metallic

