

27229 - Environmental Physical Chemistry and Photochemistry

Syllabus Information

Academic Year: 2019/20

Subject: 27229 - Environmental Physical Chemistry and Photochemistry

Faculty / School: 100 -

Degree: 452 - Degree in Chemistry

ECTS: 5.0

Year: 4

Semester: Second semester

Subject Type: Optional

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 methodology followed in this course is oriented towards achievement of the learning objectives. It is strongly related to understanding and reasoning processes. A wide range of teaching and learning tasks are implemented, such as theoretical sessions, group work presentation and seminars.

Students are expected to participate actively in the class throughout the semester.

Classroom materials will be available via Moodle. These include a repository of power point used in class, the course syllabus, as well as other learning resources and online support material.

Further information regarding the course will be provided on the first day of class.

4.2.Learning tasks

The course includes 5 ECTS organized according to:

- Formative activity 1 (3 ECTS): Interactive lecture classes on photochemistry and environmental physical chemistry (see section 5.3 for the topics).
- Formative activity 2 (1 ECTS): Case-based solving classes and seminars and group work presentations. In this formative activity is essential the participation of the students.
- Formative activity 3 (1 ECTS): laboratory sessions.

4.3.Syllabus

1. The environment: atmosphere and hydrosphere. Basic concepts.
2. Physical Chemistry of the atmosphere.
 - Photochemical processes.
 - Kinetics of tropospheric reactions.
 - Air pollution.
 - Primary and secondary pollutants.
 - Acid rain.
 - Destruction of the ozone layer.
3. Physical Chemistry of the hydrosphere.
 - Physical properties of water and aquatic systems.
 - Acid-base reactions in water.
 - Redox reactions in aquatic systems.
 - Photochemical processes in aquatic systems.
 - Contamination of aquatic systems.
4. Fundamental of the physical removal of chemical contaminants.

4.4.Course planning and calendar

For further details concerning the timetable, classroom and further information regarding this course please refer to the [?Facultad de Ciencias " website.](#)

4.5.Bibliography and recommended resources

http://biblos.unizar.es/br/br_citas.php?codigo=27229&year=2019