

## 25200 - Chemical foundations of the environment

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 25200 - Chemical foundations of the environment

**Faculty / School:** 201 -

**Degree:** 571 - Degree in Environmental Sciences

**ECTS:** 6.0

**Year:** 1

**Semester:** First Four-month period

**Subject Type:** Basic Education

**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 the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, seminars and laboratory sessions.

All the proposed activities in this subject are focused on the understanding and assimilation of the chemistry principles to understand the different chemical processes that occur in the environment. Topics explained in lectures will be complemented in laboratory sessions.

A group work will be proposed at the beginning of the course, which will involve the discussion of a proposed topic in collaboration with Fundamentals of Geology. Such topic will be closely related to contents included in both subjects: Chemistry and Geology. Also, individualized tutoring will monitor the learning process development.

#### 4.2.Learning tasks

This course is organized as follows:

- **Lectures and seminars.** Students will receive the content of each lecture as well as the collection of numerical exercises at the beginning of each session.
- **Laboratory sessions.** These laboratory sessions will take 2 hours, approximately every 15 days. Students will have the content before the session, which includes the practical procedure and the theoretical contents.



Seminars	2	2		2		2	2		2			2	2			
Laboratory sessions							2	2		2	2	2		2		
Team work																
Evaluation										1						
Non face-to-face work																
Individual work	4	4	4	2	4	2	4	4	2	3	8	2	2	2	4	4
Team work				2		2			2		2	2	2	2		
TOTAL	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Faculty of Sciences website and Moodle (<http://moodle.unizar.es/>).

#### 4.5. Bibliography and recommended resources

- BB** Chang, Raymond. Química / Raymond Chang, Williams College ; traducción, María del Carmen Ramírez Medeles, Rosa Zugazagoitia Herranz ; revisión técnica, María Aurora Lanto Arriola ... [et al.] . 7ª ed. México [etc.] : McGraw-Hill, cop. 2003
- BB** Kotz, John C.. Química y reactividad química / John C. Kotz, Paul M. Treichel, Jr., Patrick A. Harman ; [traducción, Ma. Teresa Aguilar Ortega] . 5ª ed. [México] : Thomson, cop. 2003
- BB** Petrucci, Ralph H.. Química general / Ralph H. Petrucci, William S. Harwood, F. Geoffrey Herring ; traducción, Concepción Pardo Gª Pumarino, Nerea Iza Cabo . 8ª ed. Madrid : Prentice Hall, cop. 2003
- BB** Química : la ciencia central / Theodore L. Brown...[et al.]; con la colaboración de Patrick Woodward ; traducción , Laura Fernández Enríquez ; Revisión técnica, María Aurora Lanto Arriola . 11ª ed. México : Pearson Educación, 2009
- BC** Huheey, James E.. Química inorgánica : principios de estructura y reactividad / James E. Huheey, Ellen A. Keiter, Richard L. Keiter ; versión en español María Teresa Aguilar Ortega. 4a. ed México : Oxford University Press, cop. 2001
- BC** Manahan, Stanley E.. Environmental chemistry / Stanley E. Manahan . 8th ed. Boca Raton [etc.] : CRC, cop. 2005
- BC** Manahan, Stanley E.. Fundamentals of environmental chemistry / Stanley E. Manahan . 2nd ed. Boca Raton [etc.] : Lewis Publishers, cop. 2001
- BC** Peterson, W. R.. Formulación y nomenclatura química inorgánica : [según la normativa IUPAC] / W. R. Peterson . 16ª ed. Barcelona : Edunsa, 1996
- BC** Peterson, W.R.. Formulación y nomenclatura química orgánica : [según la normativa IUPAC] / W.R. Peterson . - 15a. ed. Barcelona : Edunsa, 1993
- BC** Shriver, Duward F.. Química inorgánica / D. F. Shriver, P. W. Atkins, C. H. Langford ; versión española [de la 2 ed. inglesa] por Gregorio López López . [1a] ed. española Barcelona [etc.] : Reverté, D.L.1997-1998

The updated recommended bibliography can be consulted in:

<http://psfunizar7.unizar.es/br13/egAsignaturas.php?codigo=25200&Identificador=C70894>