

29914 - Chemistry extension II

Información del Plan Docente

Academic Year	2018/19
Subject	29914 - Chemistry extension II
Faculty / School	110 - Escuela de Ingeniería y Arquitectura
Degree	435 - Bachelor's Degree in Chemical Engineering
ECTS	6.0
Year	2
Semester	First 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 that is designed for this subject is based on the following:

- Theory classes as participative and interactive lectures (4.5 ECTS).
- Participative seminars (1.5 ECTS).
- Personalized tutorials.

Students matriculated in the course can log in to contents and materials in the space allocated to the subject in the Moodle platform.

4.2.Learning tasks

The available program that will assist the student to achieve the expected results involves the following activities... Theoretical sessions as participative and interactive lectures, participative seminar sessions and personalized tutoring classes. The following contents will be studied.

29914 - Chemistry extension II

INORGANIC CHEMISTRY

UNIT I: AN INTRODUCTION TO THE STUDY OF THE INORGANIC CHEMISTRY.

UNIT II: REPRESENTATIVE ELEMENTS.

UNIT III: METALLURGY. INTRODUCTION TO THE STUDY OF THE TRANSITION ELEMENTS.

ORGANIC CHEMISTRY

UNIT IV: INTRODUCTION TO THE STUDY OF ORGANIC CHEMISTRY.

UNIT V: STRUCTURE AND PROPERTIES OF ORGANIC COMPOUNDS.

UNIT VI: REACTIVITY OF ORGANIC COMPOUNDS.

4.3. Syllabus

Programme

INORGANIC CHEMISTRY

UNIT I

AN INTRODUCTION TO THE STUDY OF THE INORGANIC CHEMISTRY:

- HISTORICAL EVOLUTION OF THE INORGANIC CHEMISTRY.
- REACTIONS IN INORGANIC CHEMISTRY.
- AN INTRODUCTION TO THE STUDY OF THE ELEMENTS: Study of the variation of the periodic properties.

UNIT II

REPRESENTATIVE ELEMENTS: Occurrence and abundance, extraction and uses, properties, and principal compounds.

- HYDROGEN.
- THE NOBLE GASES.
- HALOGENS.
- CHALCOGENS.
- THE GROUP 15 ELEMENTS.
- THE GROUP 14 ELEMENTS.
- THE GROUP 13 ELEMENTS.
- GROUP 1: THE ALKALI METALS
- GROUP 2: THE ALKALINE EARTH ELEMENTS.

UNIT III

29914 - Chemistry extension II

METALLURGY. INTRODUCTION TO THE STUDY OF THE TRANSITION ELEMENTS.

- CONCENTRATION OF ORES. TYPES OF METALLURGICAL PROCESSES.
- GENERAL PROPERTIES OF THE TRANSITION ELEMENTS: Applications in the chemical industry.

ORGANIC CHEMISTRY

UNIT IV

INTRODUCTION TO THE STUDY OF ORGANIC CHEMISTRY:

- HISTORICAL EVOLUTION OF CARBON COMPOUNDS CHEMISTRY.
- AN INTRODUCTION TO THE STUDY OF IMPORTANT FAMILIES OF ORGANIC COMPOUNDS.

UNIT V

STRUCTURE AND PROPERTIES OF ORGANIC COMPOUNDS:

- THE STRUCTURE OF IMPORTANT FAMILIES OF ORGANIC COMPOUNDS, ISOMERISM (CONSTITUCIONAL ISOMERS AND STEREOISOMERS), CONFORMATIONAL ANALYSIS.
- PHYSICAL, ACID-BASE AND SPECTROSCOPIC PROPERTIES OF ORGANIC COMPOUNDS.

UNIT VI

REACTIVITY OF ORGANIC COMPOUNDS.

- THE MAIN TYPES OF ORGANIC REACTIONS. SYNTHESIS AND REACTIVITY OF ALIPHATIC AND AROMATIC HYDROCARBONS. SYNTHESIS AND REACTIVITY OF CARBONYLIC COMPOUNDS.

4.4.Course planning and calendar

Planning and scheduling

Schedules of lectures will coincide with the officially established and will be available at: <https://eina.unizar.es/>.

The calendar will be established in coordination with the rest of matters at beginning of course. The presentation of works will be notified in advance, in the moodle page for the course, on the platform Moodle at the University of Zaragoza, <https://moodle2.unizar.es/add/>.

UNITS	ACTIVITY	HOURS	GROUPS
-------	----------	-------	--------

29914 - Chemistry extension II

An introduction to the study of the Inorganic Chemistry (UNIT I)	Theory	2	1
	Questions	1	1
	Tutoring	1	1
Eepresentative elements (UNIT II)	Theory	18	1
	Questions	2	1
	Tutoring	2	1
Metallurgy. Introduction to the study of the Transition elements (UNIT III)	Theory	2	1
	Questions	1	1
	Tutoring	1	1
Introduction to the study of the Organic Chemistry (UNIT IV)	Theory	2	1
	Questions	1	1
	Tutoring	1	1
Structure and properties of Organic compounds (UNIT V)	Theory	12	1
	Questions	2	1
	Tutoring	2	1
Reactivity of Organic compounds (UNIT VI)	Theory	8	1
	Questions	2	1
	Tutoring	2	1

29914 - Chemistry extension II

ACTIVITY	PRESENCIAL (hours)	HOMEWORK	TOTAL
Theoretical sessions	44	66	110
Seminars	9	8	8
Tutoring classes	9	8	8
Examinatios	6		6
TOTAL	68	82	150

4.5. Bibliography and recommended resources