

27212 - Analytical Chemistry II

Información del Plan Docente

Academic Year	2018/19
Subject	27212 - Analytical Chemistry II
Faculty / School	100 - Facultad de Ciencias
Degree	452 - Degree in Chemistry
ECTS	12.0
Year	3
Semester	Annual
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 methodology followed in this course is oriented towards achievement of the learning objectives. It favors the understanding of the different techniques and methods in Analytical Chemistry. A wide range of teaching and learning tasks are implemented, such as theory sessions, laboratory sessions, assignments, and tutorials.

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

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials.

27212 - Analytical Chemistry II

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

4.2.Learning tasks

The course includes 12 ECTS organized according to:

- Lectures (2.4 ECTS): 60 hours.
- Seminars and Problems sessions (0.8 ECTS): 20 hours
- Laboratory sessions (1.6 ECTS): 40 hours.
- Assignments (7.2 ECTS): 180 hours (including 20 hours of mentored work)

Laboratory sessions: 12 sessions of 3-hour and 4 sessions of 1-hour will take place approximately during November-December and March-May . Students are provided with the practical exercises' instructions to be done as well as a theoretical introduction to the session's contents.

4.3.Syllabus

The course will address the following topics:

- Topic 1: Introduction to Instrumental Analysis
- Topic 2: Basic Concepts of Chromatography
- Topic 3: Gas Chromatography
- Topic 4: High Performance Liquid Chromatography
- Topic 5: Mass Spectrometry as detection technique in Chromatography. HPLC-MS and GC-MS
- Topic 6: Introduction to spectrometric techniques
- Topic 7: Introduction to Atomic Spectrometry.
- Topic 8: Atomic Absorption Spectrometry
- Topic 9: Atomic Emission Spectrometry: Flame, Arc and Spark, Plasma
- Topic 10: Inductively Coupled Plasma-Mass Spectrometry
- Topic 11: Molecular Absorption Spectrometry: UV-VIS and Infrared
- Topic 12: Molecular Luminiscence : Fluorescence and Chemiluminiscence

4.4.Course planning and calendar

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 Facultad de Ciencias web (<https://ciencias.unizar.es/grado-en-quimica-0>).

4.5.Bibliography and recommended resources