

27206 - Analytical Chemistry I

Información del Plan Docente

| | |
|-----------------|----------------------------|
| Academic Year | 2016/17 |
| Academic center | 100 - Facultad de Ciencias |
| Degree | 452 - Degree in Chemistry |
| ECTS | 9.0 |
| Course | 2 |
| Period | Annual |
| Subject Type | Compulsory |
| Module | --- |

1. Basic info

1.1. Recommendations to take this course

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

5.2. Learning activities

The learning process for this subject is based on the following:

60 hours of Lectures.

30 hours of Problem-based learning. The group is divided into two subgroups.

20 hours of mentoring work.

5.3. Program

27206 - Analytical Chemistry I

Part I: Aim, methodology and purpose of Analytical Chemistry.

Chapter 1: Introduction to Analytical Chemistry.

Chapter 2- The analytical process.

Chapter 3- Quality assurance in the analytical process.

Chapter 4- Equilibrium chemistry in Analytical Chemistry.

Part II: General operations in the analytical process.

Chapter 5- Sampling.

Chapter 6- Sample preparation.

Chapter 7- Sample dissolution.

Chapter 8- Calibration.

Chapter 9- Evaluation of analytical data.

Part III. Chemical methods of analysis.

Chapter 10- Gravimetric methods.

Chapter 11- Overview of titrimetric methods.

Chapter 12- Acid-base titrations.

Chapter 13- Precipitation titrations.

Chapter 14- Redox titrations.

Chapter 15- Complexation titrations.

Part IV- Electroanalytical methods.

Chapter 16- Overview of electroanalysis.

Chapter 17- Potentiometric methods.

27206 - Analytical Chemistry I

Chapter 18- Voltammetric methods.

Chapter 19- Other electroanalytical methods

5.4.Planning and scheduling

Lectures, practical sessions and examination dates will follow the scheduling fixed by the Science Faculty, which is published in its website (<https://ciencias.unizar.es/calendario-y-horarios>) and in the learning platform Moodle within the *Química Analítica I* course.

5.5.Bibliography and recommended resources

- | | |
|----|---|
| BB | Consultar información/recursos incorporados en el ADD de la asignatura. |
| BB | Harris, Daniel C.. Análisis químico cuantitativo / Daniel C. Harris . - 3ª ed. Barcelona [etc.] : Reverté, cop. 2007 |
| BC | Belarra Piedrafita, Miguel Ángel. Cálculos rápidos para los equilibrios químicos en disolución / Miguel Angel Belarra Piedrafita Zaragoza : Prensas Universitarias de Zaragoza, 2002 |
| BC | Skoog, Douglas A.. Principios de análisis instrumental / Douglas A. Skoog, F. James Holler, Stanley R. Crouch ; traductor, María Bruna Josefina Anzures ; revisión técnica Francisco Rojo Callejas, Juan Alejo Pérez Legorreta . - 6ª ed. México, D. F. : Cengage Learning, cop. 2008 |
| BC | Valcárcel Cases, Miguel. Principios de química analítica / Miguel Valcárcel Barcelona : Springer-Verlag Ibérica, D.L. 1999 |

Online resources:

Analytical Chemistry 2.0 [Bibliografía Básica de la asignatura] -
[\http://www.asdlib.org/onlineArticles/ecourseware/Analytical%20Chemistry%202.0

27206 - Analytical Chemistry I