



Universidad
de Huelva

FICHA de la Asignatura

TITLE___INSTRUMENTAL ANALYTICAL CHEMISTRY **Tutor:** Daniel Alejandro Sánchez-Rodas Navarro

ECTS: 6.17 **Semester**__Fall__

Description

This module covers chemical analysis by means of instruments based on spectroscopy, mass spectrometry and electrochemistry, considering both theoretical and practical applications of instrumental analysis. The approach taken considers academic work (tests and exercises) in English.

Aims

The aim of this module is to provide the student with a critical understanding of the theoretical, conceptual and methodological options available for Instrumental Analytical Chemistry and an advanced level of knowledge of current analytical methodology for the determination of atomic and molecular compounds.

Learning outcomes

By the end of the module students should be able to: (5 or 6)

- Appreciate the wide range of analytical instrumentation in modern laboratories.
- Analyze environmental, health and industrial samples.
- Calculate the concentration of analytes by different calibration techniques.
- Evaluate the most suitable analytical instrumentation for each type of samples.
- Conduct experiments in the lab using instrumental analysis.

Syllabus indicative content

- Spectroscopy: Definition, instrumentation and application of analytical methods based on atomic and molecular absorption and emission of radiation.
- Mass Spectrometry: definition, principles, instrumentation and applications to atomic and molecular compounds.
- Electrochemistry: principles and application of electroanalytical methods.

Assessment

Coursework (weighting) 30%

Exam 70%

Reading list

Vicerrectorado de Extensión Universitaria y Relaciones Internacionales. Servicio de Lenguas Modernas. Pabellón 8–Campus El Carmen. 21071 - HUELVA. Telef.: +34 959 218232 - Fax: +34 959 219334. email: serv.lenguas.mod@uhu.es



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- Fundamentals of Analytical Chemistry. Skoog, West and Holler. 7th ed. Harcourt (1997)
- Quantitative Chemical Analysis. Harris. 5th ed. Freeman (2000)
- Principles of Instrumental Analysis. Skoog, West, Holler and Crouch. 6th ed. Prentice Hall (2006)
- Instrumental Analysis. Rubinson and Rubinson. Prentice Hall (2000)