

SYLLABUS

1. COURSE DESCRIPTION

Degree:	Biotechnology
Course:	Techniques and Instrumental Analysis
Module:	Instrumental Methods of Analysis and Molecular Biology Systems
Department:	Physical, Chemical and Natural Systems
Academic Year:	2017-18
Term:	Second
ECTS credits:	6
Year:	3rd year
Type:	Compulsory
Language:	Spanish

Course Model:	C1	
a. Basic learning (EB):		50%
b. Practical learning (EPD):		50%



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2. LECTURERS

Coordinator	
Name:	Bruno Martínez Haya
School:	School of Experimental Sciences
Department:	Physical, Chemical and Natural Systems
Area:	Physical Chemistry
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3. TOPICS

1. Instrumental techniques for analyte separation

Gas chromatography, Liquid chromatography, capillary electrophoresis.

2. Nuclear Magnetic Resonance

Fundamentals y applications in Biological Systems.

3. Mass spectrometry

Volatilization and ionization of biomolecular compounds. Ion detection and mass analysis. Fragmentation techniques. Biomolecular identification. Applications in proteomics and metabolomics.

4. Advanced Spectroscopy

Vibrational spectroscopy. Infrared absorption and Raman dispersion. Identification and structural characterization of biomolecules. UV-Vis Spectroscopy: Absorption- and Fluorescence-based techniques. Fluorescence microscopy.

5. Scanning Microscopy

Electron Microscopy (SEM, TEM). Scanning Microscopy Techniques (AFM, STM). Applications in biological systems.