

Basic Instrumental Techniques

Code: 100921
ECTS Credits: 3

Degree	Type	Year	Semester
2500253 Biotechnology	OB	1	1

Contact

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Use of languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: No

Prerequisites

There are no prerequisites for this course. The student is advised to refresh the chemistry and biology knowledge acquired during the "batxillerat".

Objectives and Contextualisation

The general objective of this course is to familiarise the student with the basic techniques used in the biochemistry/molecular biology laboratory.

Content

- Introduction to the biochemistry lab. Safety, good practices, laboratory notebook, use of materials and chemicals, quantitative transfer of liquids, statistical analysis, informatics tools.
- Buffers, electrodes, biosensors. Sample preparation techniques. Radioisotopes.
- Centrifugation. Basic principles. Instrumentation: low, high speed and ultracentrifugation. Applications, subcellular fractionation.
- Chromatography. Basic principles, main types and applications.
- Spectroscopy. Basic principles: Beer-Lambert law. Basic methods: UV, visible and fluorescence. Applications, quantification of proteins.
- Nucleic acid analysis. Isolation and characterisation of DNA. Nucleic acid amplification: the polymerase chain reaction (PCR). Basic principles and applications.
- Immunological techniques. Antibody production, enzyme-linked immunosorbent assay (ELISA), immunofluorescence, Western blot, fluorescent activated cell sorting (FACS).