

Teaching guide

IDENTIFICATION DETAILS

Degree:	Biomedicine		
Field of Knowledge:	Science		
Faculty/School:	Experimental Science		
Course:	EXPERIMENTATION METHODOLOGY I		
Type:	Compulsory	ECTS credits:	7
Year:	1	Code:	2136
Teaching period:	First-Second semester		
Area:	Methodology of Biomedical Experimentation		
Module:	Experimental Methodology in Biomedicine		
Teaching type:	Classroom-based		
Language:	Spanish		
Total number of student study hours:	175		

SUBJECT DESCRIPTION

A fundamental objective of the Biomedicine degree is to train students to work in the biomedical field, and we therefore consider excellent practical training to be essential.

Students will be immersed in the practical work of the laboratory from the first semester, through the practical credits of certain subjects and the Methodology of Experimentation I course. This will establish and consolidate the theoretical-practical knowledge acquired throughout the course, and begin laying the foundations for acquiring the principles that should govern research work.

Methodology of Experimentation I is part of the Methodology of Biomedical Experimentation course that is taught throughout the first, second, third, fourth, fifth and sixth semesters. It is a compulsory, annual course comprising 7 ECTS credits, including 2.5 ECTS in theoretical training in Basic Instrumental Techniques commonly used in a research laboratory in the field of Biomedicine and 4.5 practical ECTS credits in research laboratories.

This course consists of two interrelated blocks: firstly, a theoretical part which studies the physical-chemical

foundations and the different applications of basic and essential tools in a laboratory for the isolation and characterization of biomolecules, such as electrophoresis, centrifugation and chromatography. The second block encompasses the practical part of the course. The student will learn to identify, and correctly and safely handle laboratory equipment (both teams and materials). In addition to consolidating the concepts learned in the theoretical part, students will learn to design experimental approaches, analyse results and infer conclusions. Both blocks will provide the student with a solid theoretical-practical training in the basic techniques cited, as well as rigorous, critical and ethical scientific thinking.

SKILLS

Basic Skills

Students must have demonstrated knowledge and understanding in an area of study that is founded on general secondary education. Moreover, the area of study is typically at a level that includes certain aspects implying knowledge at the forefront of its field of study, albeit supported by advanced textbooks

Students must be able to apply their knowledge to their work or vocation in a professional manner and possess skills that can typically be demonstrated by coming up with and sustaining arguments and solving problems within their field of study

Students must have the ability to gather and interpret relevant data (usually within their field of study) in order to make judgments that include reflections on pertinent social, scientific or ethical issues

Students must be able to convey information, ideas, problems and solutions to both an expert and non-expert audience

Students must have developed the learning skills needed to undertake further study with a high degree of independence

General Skills

Acquire the skills needed for experimental work: its design and execution, the compilation of results and the obtention of conclusions, understanding the limitations of an experimental approach.

Specific skills

To understand and be able to apply the molecular tools needed to develop research projects and design biomedical processes.

To understand the chemical and physical foundations of the instrumental techniques of use in a biomedicine experimentation laboratory.

Know the different laboratory instruments and materials (biological and non-biological) and their obtention and handling for different purposes, observing the pertinent principles of security.

DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
70 hours	105 hours