

Teaching guide

IDENTIFICATION DETAILS

Degree:	Biotechnology		
Field of Knowledge:	Science		
Faculty/School:	Experimental Science		
Course:	BIOREACTORS		
Type:	Compulsory	ECTS credits:	6
Year:	3	Code:	2035
Teaching period:	Fifth semester		
Area:	Biotechnological Process Engineering		
Module:	Biotechnological Tools		
Teaching type:	Classroom-based		
Language:	English		
Total number of student study hours:	150		

SUBJECT DESCRIPTION

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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
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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

To acquire firm theoretical, practical, technological and humanistic training needed to develop professional activity.

To have acquired the ability for analytical, synthetic, reflective, critical, theoretical and practical thought.

Capacity for problem-solving and decision-making.

To be able to plan time effectively.

To foster a concern for knowledge as a key tool in the personal and professional growth process of a student.

To value sciences as a cultural fact.

To recognise the mutual influence existing between science, society and technological development in order to strive for a sustainable future.

To develop capacity for and a commitment to learning and personal development.

To develop an ability to search for, take in, analyse, sum up and relate information.

Specific skills

To be able to design and optimise a bioreactor and a biotechnological plant based on firm knowledge of engineering.

To calculate and accurately interpret the relevant parameters in the phenomena of transport and different balances of material and energy in bio industrial processes.

To be familiar with the various techniques and types of cell culture applicable to research and biotechnological industry.

To acquire the technological and engineering knowledge needed in process design.

To organise and suitably plan work in the laboratory.

To identify and define laboratory instruments and materials.

To be able to describe, quantify, analyse and critically assess the results of experiments performed in the laboratory.

To be able to apply the theoretical knowledge acquired for solving problems and practical cases linked to the various subjects.

To be able to work in a team in an efficient and coordinated manner.

DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
60 hours	90 hours