

Teaching guide

IDENTIFICATION DETAILS

Degree:	Biotechnology
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Field of Knowledge:	Science
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Faculty/School:	Experimental Science
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Course:	INDUSTRIAL MICROBIOLOGY II
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Type:	Optional
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ECTS credits:	3
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Year:	4
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Code:	2064
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Teaching period:	Seventh semester
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Area:	Applied Biotechnology
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Module:	Biotechnological Processes and Products
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Teaching type:	Classroom-based
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Language:	Spanish
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Total number of student study hours:	75
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SUBJECT DESCRIPTION

La asignatura Microbiología Industrial II es continuación a Microbiología Industrial I. Esta asignatura persigue incrementar los conocimientos que los alumnos tienen de la industria biotecnológica de base microbiana. Con ello, se pretende repasar las principales características de los microorganismos implicados en los procesos de producción industrial. Se trata de dar un enfoque actualizado, racional y especializado de los aspectos de mayor interés en relación con la explotación industrial de los microorganismos, ilustrado con determinados ejemplos de procesos industriales

El objetivo es que los alumnos aprendan a integrar los conocimientos adquiridos en las distintas materias del Grado en Biotecnología y sean capaces de diseñar procesos y buscar la aplicabilidad a nuevos productos de

origen biotecnológico.

La asignatura Microbiología Industrial II se va a centrar en el diseño y estudio de los procesos industriales en los que intervienen los microorganismos de modo directo o indirecto. Se hará un repaso de los grupos microbianos con potencial biotecnológico, sus ventajas/desventajas para el crecimiento a gran escala y se profundizará en las aplicaciones de los microorganismos modificados genéticamente. Los alumnos prepararán trabajos en equipo en los que desarrollen una propuesta innovadora.

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

To be familiar with the applications of biotechnology in the healthcare, food, agrobiotechnological, environmental and chemical fields.

Capacity for teamwork and group management.

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

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

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

To develop oral and written communication skills.

Specific skills

To be familiar with microorganisms having industrial significance and understand their biotechnological potential.

To identify the main products of microbial origin with biotechnological applications in various social and economic areas.

To be familiar with the requirements of microorganisms and the cellular lines established to carry out large-scale fermentations.

To understand how the basic knowledge generated within a laboratory in various models may transform into biotechnological applications for the benefit of society.

To work suitably in a laboratory with biological material (bacteria, fungi, viruses, animal and plant cells, plants and animals) and with regard to the safety, handling and disposal of biological waste.

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 work in a team in an efficient and coordinated manner.

To be able to negotiate and sell a personal project.

DISTRIBUTION OF WORK TIME

CLASSROOM-BASED ACTIVITY	INDEPENDENT STUDY/OUT-OF-CLASSROOM ACTIVITY
30 hours	45 hours