

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:	GENETICALLY MODIFIED ORGANISMS
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Type:	Compulsory
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ECTS credits:	6
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Year:	4
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Code:	2042
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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:	150
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SUBJECT DESCRIPTION

La generación de organismos modificados genéticamente (tanto de carácter vegetal como de carácter animal) constituye hoy en día una de las herramientas con mayor impacto en el área de la Biotecnología tanto por sus aplicaciones a nivel de generación de productos de interés como por su uso como herramienta para el estudio de multitud de procesos biológicos y patologías. La generación de organismos vegetales capaces de generar productos con alguna cualidad de interés sobre variantes naturales para el hombre, la generación de organismos animales portadores de mutaciones genéticas claves en la aparición y desarrollo de enfermedades... son ejemplos del alcance de esta disciplina dentro del área de la Biotecnología.

En consonancia con lo escrito en el párrafo anterior, la asignatura de Organismos Modificados Genéticamente

pretende dotar al alumno de los conocimientos necesarios para la generación, por medio de estrategias diversas de modificación genética, de organismos completos (tanto de carácter vegetal como animal) para la obtención de productos naturales de interés humano y el estudio de procesos biológicos y de patologías diversas.

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

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

To understand the social, economic and environmental implications of professional activity.

To understand the ethical implications of professional and personal activity.

Capacity for teamwork and group management.

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

Capacity for problem-solving and decision-making.

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

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.

To be familiar with the basic principles and theories of human and experimental sciences.

To develop oral and written communication skills.

To acquire the skills needed for experimental work: design, preparation, the compilation of results and the obtainment of conclusions, understanding the limitations of an experimental approach.

To acquire the molecular biology and biochemistry knowledge needed to develop biotechnological processes and products.

Specific skills

To be familiar with the methods for obtaining genetically modified organisms as a basis for animal experimentation and its relevance for the diagnosis and treatment of pathologies.

To be familiar with the gene transfer methodology in plants and its biotechnological application.

To understand and be able to apply genetic and genomic technologies to plant life.

To be able to approach a subject by means of rigorous, profound and comprehensive thought.

Capacity for written and oral communication of the knowledge acquired.

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

To analyse and sum up key ideas and content regarding all manner of texts; to discover the theses incorporated within them and the issues raised; and to make critical judgments about their form and content.

To nurture an attitude of intellectual curiosity and a quest for truth in all areas of life.

DISTRIBUTION OF WORK TIME

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