

Degree programme	Type	Course
Applied Microbiology	OB	1

Contact lecturer

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Group languages

You can consult this information at the [end](#) of the document.

Prerequisites

It is expected to have a good conceptual background in microbial metabolism and physiology, molecular microbiology, microbial cell culture techniques, genetic manipulation of microorganisms and protein engineering.

Objectives

The objective of this module is to provide students with an overview of microorganisms of industrial interest, microbial diversity and their potential on an industrial scale in production/transformation processes.

There will also be several microbial products of industrial and biomedical interest and how microbial cell factories can be used for the production and adaptation of the same for biotechnological and biomedical applications.

Learning outcomes

1. Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
2. Use and manage bibliographic information and computer resources related to microbiology and related sciences.
3. Use scientific terminology to account for research results and present these orally and in writing.
4. Communicate and justify conclusions clearly and unambiguously to both specialist and non-specialist audiences.
5. Recognise microbial diversity as an offer of new microorganisms and microbial products that are of interest to industry and the welfare of society.
6. Acquire knowledge of the most up-to-date tools and systems used in industrial microbiology and the industrial microbiology-biotechnology interface.

Contents

-R+D to obtain products or microorganisms of industrial interest.

-The Cell Factory concept: microbial production of metabolites, enzymes and recombinant drugs.

-Experimental design in microbial biotechnology.

-Production and engineering of protein drugs and materials of clinical interest.

-Microbiology in different industrial sectors (health, pharmaceutical, agri-food, cosmetics).

-Value and technological transfer of microbial products.

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Individual study	135	5.4	1, 2, 4, 5, 6
Lectures	46	1.84	1, 4, 5, 6
Preparation of an oral dissertation	41.75	1.67	1, 2, 3, 4, 6

This module consists of lectures delivered by researchers in fields related to Microbiology and Biotechnology, professionals working in industries relevant to these disciplines, and experts in innovation, technology valorization, and knowledge transfer. Throughout the module, students will participate in group work activities during class sessions. Attendance at a minimum of 60% of the lectures is required.

Annotation: within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Evaluation of group assignments: oral presentations	25	0.25	0.01	1, 2, 3, 4, 6
Individual evaluation: multiple choice test 1	35	1	0.04	4, 5, 6
Individual evaluation: multiple choice test 2	40	1	0.04	1, 3, 4, 5, 6

The module will be evaluated through two individual multiple-choice examinations and the submission of a group work, which will be evaluated by means of an oral presentation.

To pass the module, students must achieve a weighted average mark of 5 or above, as well as a mark of 4 or higher in each individual written assessment. If the module is not passed, the individual evaluation can be recovered.

To take part in the remedial exam, students must have been previously evaluated in a set of activities equaling at least two-thirds of the final score of the course or module. Therefore, the student will be graded as "No Avaluable" if the weighting of all conducted evaluation activities is less than 67% of the final score.

In the event that the students wish to improve the qualification of the individual evaluation, they will be able to opt for a grade improvement test that will be carried out the same day as the recovery test, giving up the grade obtained previously in this section. Students who want to take this test must contact the module teachers in writing at least 72 hours before the scheduled day to take the test. It is necessary to get a minimum of 5 to pass it.

Attendance of at least 60% of the theoretical classes is compulsory to pass the module

Single assessment:

The single assessment consists of a single individual written examination in the form of a multiple-choice test, in which the contents of the entire theory program of the subject will be assessed. The grade obtained in this synthesis test will account for 75% of the final grade for the subject.

Evaluation of the oral presentation will follow the same process as the continuous evaluation. The grade obtained will account for 25% of the final grade of the subject.

The single individual test will be held on the same date fixed in the calendar for the last continuous evaluation test. A similar recovery system and criteria for passing the module will be applied, as described for continuous assessment.

Any irregularity committed in an assessment activity (including academic fraud, plagiarism, or the improper use of artificial intelligence, unless such use is expressly authorised in the module guide) that may lead to a significant alteration of the assessment outcome will result in that activity being awarded a mark of 0. Where the module guide stipulates that passing the module requires successful completion of several assessment activities, and irregularities are detected in more than one assessment activity within the same module, the final mark for the module will be 0. In addition, students who commit any of these irregularities may be subject to disciplinary proceedings.

Bibliography

The necessary basic and specific bibliography will be published on the Moodle space of the course. The databases required to obtain the materials needed for the individual assignments will be specified.

Software

No specific software is foreseen.

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE

Type of teaching	Group	Language	Semester	Shift
(TEm) Theory (master)	1	Spanish	first semester	morning-mixed