

Industrial Microbiology

Code: 101014
 ECTS Credits: 6

Degree	Type	Year	Semester
2500502 Microbiology	OB	3	2

Contact

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Use of languages

Principal working language: catalan (cat)

Some groups entirely in English: No

Some groups entirely in Catalan: Yes

Some groups entirely in Spanish: No

Prerequisites

The student must have completed with success the subject Microbiology of the Microbiology degree, or some subject of equivalent content.

Objectives and Contextualisation

The aim of this subject is to train the student in the different aspects microbiology which have particular relevance in the industry field, particularly those in which microorganisms participate as active production agents. A series of initial lectures deals with aspects such as the manipulation and use of microbial cultures as starters in production processes, as well as with the sterilization and control procedures required to ensure that these processes are successful. A second more specific set of lectures analyses the role of microorganisms in different specific processes, making particular emphasis on the composition of the microbial communities involved, as well as on the most relevant metabolic activities.

Content

1. Introduction to Industrial Microbiology
2. Groups of microorganisms of industrial interest.
3. Problems caused by microorganisms
4. Microbial control strategies
5. Assessment of environmental microbial contamination
6. Cleaning and disinfection of industrial facilities
7. Reduction of microbial load in raw materials and products
8. Limitation of microbial growth
9. Production of cell biomass
10. Lactic fermentations on vegetables

11. Fermentation in meat
12. Production of alcoholic beverages
13. Microbiological aspects in the manufacture of dairy products
14. Production of energy using microorganisms
15. Fuel desulfurization
16. Biodegradable plastics of microbial origin
17. Microbial biosensors