Syllabus

Course Description

Course Title	Food Microbiology
Course Code	40203
Course Title Additional	
Scientific-Disciplinary Sector	AGRI-08/A
Language	English
Degree Course	Bachelor in Agricultural, Food and Mountain Environmental Sciences
Other Degree Courses (Loaned)	
Lecturers	Prof. Raffaella Di Cagno, Raffaella.DiCagno@unibz.it https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/37608 Dott. Ali Zein Alabiden Tlais, AliZeinAlabiden.Tlais@unibz.it https://www.unibz.it/en/faculties/agricultural-environmental-food-sciences/academic-staff/person/38700
Teaching Assistant	
Semester	First semester
Course Year/s	3
CP	9
Teaching Hours	58
Lab Hours	32
Individual Study Hours	135
Planned Office Hours	27
Contents Summary	The course is part of the learning area of the courses characterizing the degree course, food science path, and specifically in the disciplinary field of food microbiology. The course provides students with both a knowledge of general scientific methods and contents of the food microbiology field and specific professional skills.

	The aim of the course is to provide an integrated overview of the field of food microbiology covering issues of food safety, food preservation and food production. In particular, the course provides insights concerning aspects of microbial ecophysiology, determination and control of food microorganisms, and the distribution of spoilage and pathogen microorganisms in plant- and animal-based food. Finally, the course provides an overview on the main fermented foods. List of the topics: - Introduction to food microbiology. - Eco-physiology of food microorganisms: intrinsic and extrinsic factors of food affecting microbial growth. Some information on the environmental adaptation responses. - Control of food microorganisms: conventional and novel hurdle technologies. - Direct and indirect methods to determine the food microorganisms. - Food microorganisms: meat and poultry, eggs, fish, milk and milk products, fruits and vegetables. - Introduction to fermented food: e.g., yoghurt, cheese, leavened baked goods, table olives and other vegetable products, fermented meat products: microbiological aspects. - Principles of probiotics. - Principles of the HACCP system
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Keywords	Food related microorganisms, food safety, fermented foods
Recommended Prerequisites	
Propaedeutic Courses	no
Teaching Format	Lectures and laboratory activities. In person teaching.
Mandatory Attendance	no
Specific Educational Objectives and Learning Outcomes	Knowledge and understanding of the role of yeasts and lactic acid bacteria in fermentation for making of main fermented foods and the control of spoilage and pathogens in foods. Applying knowledge and understanding through the development of practical laboratory skills and information gathering capabilities to manage the principles of the fermentation process used for the production of the main fermented foods, and principles to ensure the food safety and preservation. Making judgments through the practical and theoretical knowledge achieved during the course. Communication skills to present knowledge by a language pertinent to this specific field. Learning skills using informatics tools for the acquisition of technical information and continuous updating of knowledge.
Specific Educational Objectives and Learning Outcomes (additional info.)	
Assessment	The exam consists of a written test, including closed questions to verify the knowledge and capacity gained at the course as well open questions to assess the ability to transfer these skills to cases of application of food microbiology.
Evaluation Criteria	Clarity of the answers and lexical appropriateness, synthesis capacity, pertinence of the treated topics and capacity of elaboration.
Required Readings	The professor will provide the specific materials (e.g., chapters from books) for each topic of the course. Lecture notes are strongly recommended as a study material. Supplementary readings: Jay, J.M. (Ed.). Modern Food Microbiology. 5.a ed. London:

	Chapman & Hall International Thomson Publishing. Nevárez-Moorillón, G.V., Prado-Barragán, A., MartínezHernández, J.L., Aguilar, C.N. (Eds.). Food Microbiology and Biotechnology, 1st Edition, 2020 Apple Academic Press
Supplementary Readings	
Further Information	
Sustainable Development Goals (SDGs)	Clean water and sanitation, Good health and well-being