Syllabus

Course Description

Course Title	Food microbiology and principles of hygiene
Course Code	40409
Course Title Additional	
Scientific-Disciplinary Sector	AGRI-08/A
Language	Italian
Degree Course	Bachelor in Enogastronomy in Mountain Areas
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
Teaching Assistant	
Semester	First semester
Course Year/s	2nd
CP	6
Teaching Hours	36
Lab Hours	24
Individual Study Hours	90
Planned Office Hours	18
Contents Summary	- Introduction to food microbiology. - Biology of microorganisms - Ecophysiology of food related microorganisms - Control of food microorganisms. - Hygiene and application standards for the prevention of foodborne infections. - Microorganisms and metabolites as indicators of quality and microbial fermentation. - Introduction to fermented foods - Food pathogens.

Course Topics	Introduction to food microbiology. Spoilage, pathogenic, and beneficial microorganisms. Biology of microorganisms: structure of prokaryotic and eukaryotic cells, cell membrane, cell wall, transport mechanisms, spore differentiation. Ecophysiology of food-related microorganisms: intrinsic, extrinsic, and implicit factors of food that influence microbial growth. Control of food microorganisms. Direct and indirect methods for determining food-related microorganisms. Hygienic and practical guidelines for preventing foodborne illnesses: purchasing raw materials and food, food storage, cooked food and the use of uneaten food, refrigeration and freezing, effects of freezing and thawing, food expiration dates, food preparation and cooking (e.g., boiling, steaming), kitchen hygiene (cleaning work surfaces). Microorganisms and metabolites as indicators of quality and microbial fermentations. Food microorganisms: meat and poultry, eggs, fish, milk and dairy products, fruits and vegetables. Introduction to fermented foods: for example, yogurt, cheese, leavened baked goods, sauerkraut, and other examples of traditional fermented foods. Pathogenic microorganisms and toxic substances associated with food.
Keywords	Biology of microorganisms, control of food microorganisms, foodborne infections, food pathogens.
Recommended Prerequisites	
Propaedeutic Courses	None
Teaching Format	lectures, laboratory activities, field visits to companies in the food sector, in person teaching
Mandatory Attendance	No
Specific Educational Objectives and Learning Outcomes	The course is part of the learning area of the core teachings of the degree program, specifically in the field of food microbiology and hygiene. The course provides students with both knowledge of the general scientific methods and content of the food microbiology and hygiene sector, as well as specific professional skills. The aim of the course is to provide an integrated overview of the biology of

	microorganisms, food microbiology, and hygiene, covering topics related to food hygiene and safety in the production, distribution, administration, and preservation of food. In particular, the course offers insights into the biology of microorganisms, aspects of microbial ecophysiology, the determination and control of microorganisms, and hygienic standards for the prevention of foodborne illnesses. Finally, the course provides an overview of the main fermented foods.
Specific Educational Objectives and Learning Outcomes (additional info.)	
Assessment	The exam consists of an oral test, including questions to assess the knowledge and skills acquired during the course, including laboratory experience, and to evaluate the ability to transfer these skills to applied cases of microbiology and food hygiene.
Evaluation Criteria	Clarity of answers and appropriate lexical choice, ability to summarize, relevance of topics covered, and ability to elaborate.
Required Readings	The lecturer will provide specific material (PowerPoint presentations) for each topic covered in the course. Lecture notes are strongly recommended as study material.
Supplementary Readings	
Further Information	
Sustainable Development Goals (SDGs)	Clean water and sanitation, Good health and well-being