Freie Universität Bozen
Libera Università di Bolzano
Università Liedia de Bulsan

Syllabus
Course description

Course title	Fermentations as tools for making traditional and innovative foods and beverages
Course code	
Scientific sector	AGR/16 Agriculture Microbiology
Degree	Master on Food Sciences for Innovation and Authenticity
Semester	1st
Year	I
Academic year	2019/20
Credits	8
Modular	No

Total lecturing hours	50
Total exercise hours	30
Attendance	Not compulsory
Prerequisites	---
Course page	

Specific educational objectives	This course provides insights concerning the fermentation processes for making traditional and novel foods and beverages. In particular, the course shows how using selected microbes and conditioning food processing it is possible to get foods and beverages with high sensory, shelf life, nutritional and functional attributes. The course consists of one module of 80 hours of frontal lectures and laboratory. After defining the main physiology and biochemical traits of mainly lactic acid bacteria and yeasts, the course will provide the biotechnology knowledge for projecting and making traditional and novel foods and beverages. The course will provide examples for making fermented milks, cheeses, sourdough baked goods, fermented fruits and vegetables, and functional foods. The course has the educational objective to address the students to manage with the industrial applied biotechnology on fermentation processes.

Module 1	
Lecturer	Marco Gobbetti; marco.gobbetti@unibz.it
Scientific sector of the lecturer	AGR/16 Agriculture Microbiology
Teaching language	English

Office hours	Monday to Thursday by appointment
List of topics covered	The course will cover the following topics: - Biochemistry and Physiology of Lactic acid Bacteria - Fermented milks - Cheese making - Sourdough baked goods - Fermented fruits and vegetables - Functional foods
Teaching format	The course consists of lectures where the topics are presented by the professor. Course topics are presented at the blackboard and using electronic slides. Teaching material and additional materials are provided by the Professor at the beginning of each lectures.

Learning outcomes	Through the study and the application of the topics presented during lectures, students have to achieve the: 1. knowledge and understanding of the fundamentals of the manufacture of fermented foods; 2. capacity to project, manage and to solve food related processing for innovation and authenticity; 3. development of a concept into a process and products; 4. management of microbes in food processing; 5. capacity of showing concepts achieved in the course.

Assessment	The assessment of the student preparation is through an oral exam. The oral assessment includes questions to assess the knowledge and understanding of the course topics and questions designed to assess the ability to transfer these skills to case studies and practical applications. Questions on practical applications also assess the ability of the student to apply the knowledge and understanding of the course topics, the ability to make judgments and finally, the student communication skills.
Assessment language	English
Evaluation criteria and criteria for awarding marks	Students are asked to attend an oral or written exam. It is relevant for the exam to: master the specific language (also with respect to teaching language); prove the understanding of the topics and learning skills; evaluate and establish relationships between topics; grow specific skills in critical thinking. The exam mark will be assessed as follows: oral exam or written exam depending on the number of participants.

Required readings	The professor will provide the specific materials (e.g., articles, specific chapters from books) for each subject of the course. Lecture notes are strongly recommended as a study material.