

## Syllabus

### Course description

<b>Course title</b>	Fermentations as tools for making traditional and innovative foods and beverages
<b>Course code</b>	44701
<b>Scientific sector</b>	AGR/16 Agriculture Microbiology
<b>Degree</b>	Master in Food Sciences for Innovation and Authenticity
<b>Semester</b>	1st
<b>Year</b>	I
<b>Academic year</b>	2024/25
<b>Credits</b>	8
<b>Modular</b>	No

<b>Total lecturing hours</b>	48
<b>Total exercise hours</b>	32
<b>Attendance</b>	Not compulsory
<b>Prerequisites</b>	---
<b>Course page</b>	

<b>Specific educational objectives</b>	<p>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.</p> <p>The course consists of one module of 80 hours of frontal lectures and laboratory.</p> <p>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 of addressing the students to manage with the industrial applied biotechnology on fermentation processes.</p>
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<b>Lecturer</b>	Marco Gobbetti; marco.gobbetti@unibz.it
<b>Scientific sector of the lecturer</b>	AGR/16 Agriculture Microbiology
<b>Teaching language</b>	English
<b>Office hours</b>	Monday to Thursday by appointment

<b>List of topics covered</b>	<p>The course will cover the following topics:</p> <ul style="list-style-type: none"> <li>- Biochemistry and Physiology of Lactic acid Bacteria</li> <li>- Fermented milks</li> <li>- Cheese making</li> <li>- Sourdough baked goods</li> <li>- Fermented fruits and vegetables</li> <li>- Functional foods</li> </ul>
<b>Teaching format</b>	<p>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.</p>
<b>Learning outcomes</b>	<p>Through the study and the application of the topics presented during lectures, students have to achieve the:</p> <ol style="list-style-type: none"> <li>1. knowledge and understanding of the fundamentals of the manufacture of fermented foods;</li> <li>2. capacity to project, manage and to solve food related processing for innovation and authenticity;</li> <li>3. development of a concept into a process and products;</li> <li>4. management of microbes in food processing;</li> <li>5. capacity of showing concepts achieved in the course.</li> </ol>
<b>Assessment</b>	<p>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.</p> <p>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.</p>
<b>Assessment language</b>	English
<b>Evaluation criteria and criteria for awarding marks</b>	<p>Students are asked to attend an oral exam.</p> <p>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.</p>
<b>Required readings</b>	<p>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.</p>