

Syllabus

Course description

Course title	Meta-omics approaches to study the food fermentations
Course code	46028
Scientific sector	AGR16
Degree	PhD in Food Engineering and Biotechnology
Semester	2
Year	1
Academic year	2019/2020
Credits	3
Modular	NO

Total lecturing hours	30
Total lab hours	
Total exercise hours	
Attendance	
Prerequisites	
Course page	

Specific educational objectives	<p>The course is a deepening of the disciplinary field of food microbiology, as a characterizing course.</p> <p>The aim of the course is to provide advanced knowledge on fermentation for making baked goods.</p> <p>The course gives a general overview on the physiology and biochemistry of yeasts and lactic acid bacteria, which have used for making baked goods. The procedure for making a mature sourdough has supplied. A comparison between fermentations through baker's yeast and sourdough is given with particular emphasis on the sensory, shelf life and nutritional features of baked goods.</p>
--	---

Lecturer	Raffaella Di Cagno Polo Andrea
Scientific sector of the lecturer	AGR/16
Teaching language	English
Office hours	From Monday to Thursday, on appointment
Teaching assistant (if any)	
Office hours	
List of topics covered	Introduction to omics approaches; Metagenomics and case studies; Phenomics (Use of Omnilog microarray) and case studies; Proteomics and case studies;

	Metabolomics and case studies; Transcriptomics and case studies.
Teaching format	Teaching activities consist of lectures, explaining the theoretical concepts of the course and a number of case studies have carried out. The course is presented in digital format. Presentations and scientific papers used during the course are provided to students.

Learning outcomes	<p>Knowledge and understanding of the omics approaches to investigate the food fermentations.</p> <p>Applying knowledge and understanding through the capacity to achieve information, which enable to manage the principles of the omics used to manage the food fermentations.</p> <p>Making judgments through the practical and theoretical knowledge achieved during the course.</p> <p>Communication skills to present knowledge with a language pertinent to this specific field.</p> <p>Learning skills to manage within the basic concepts of omics approaches applied to the food fermentations.</p>
Assessment	The exam consists of an oral test, including questions to verify the knowledge and capacity gained during the course.
Assessment language	English
Evaluation criteria and criteria for awarding marks	<p>A final grade is given.</p> <p>Criteria: clarity of the answers and lexical appropriateness, synthesis capacity, pertinence of the treated topics and capacity of elaboration.</p>

Required readings	OMICs Technologies: Tools for Food Science, edited by CRC Press; 1 edition (27 Jan. 2012).
Supplementary readings	Novel Omics Technologies in Food Nutrition. Debasis Bagchi, Anand Swaroop and Manashi Bagchi Xuewu Zhang, Lijun You and Kaijun Xiao. 2015. DOI: 10.1002/9781118930458.ch1