COURSE OF STUDY *Bachelor degree: Food Science and Technology (L26)*

ACADEMIC YEAR *2023-2024*

ACADEMIC SUBJECT *Control of microbiological risks in food (3 ECTS) - (I.C. Food Safety, Nutrition and Nutrition Education (6 ECTS)*

General information	
Year of the course	*Third*
Academic calendar (starting and ending date)	*Second semester (February 26th – June 21st, 2024)*
Credits (CFU/ETCS):	3
SSD	*Agricultural microbiology (AGR/16)*
Language	*Italian*
Mode of attendance	*No Compulsory*

Professor/ Lecturer	
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Telephone	*0805442950*
Department and address	*DIP. DISSPA – Università degli Studi di Bari*
Virtual room	*Microsoft Teams: code zd8ix5j*
Office Hours (and modalities: e.g., by appointment, on line, etc.)	*Monday to Friday by appointment only.*

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
75	*20*	*7*	*48*
CFU/ETCS			
3	*2.5*	*0.5*	

Learning Objectives	The course aims to provide the student with knowledge and skills relating to the process of analyzing the microbiological risk of foods, methods for the enumeration of pathogenic microorganisms in foods and for the determination of metabolites originating from microbial metabolism in foods. The student will acquire knowledge related to the prevention of microbial deterioration in food of animal and vegetable origin.
Course prerequisites	Knowledge of basic microbiology and microbiology applied to food and beverages

Teaching strategies	*Lectures will be presented through PC assisted tools (PowerPoint, video). Field and laboratory classes, reading of regulations will be experienced.* *Lecture notes and educational supplies will be provided by means of online platforms* *Projection of educational videos and practical classes (ranging from a total of 5 to 10 hours) consisting in the discussion of cases-study are also included as supplementary teaching method. A dedicated mailing list will be created for interaction with students.*
Expected learning outcomes in	

terms of	
Knowledge and understanding on:	• Knowledge about distribution, prevalence and environmental adaptation of the main food-born pathogenic microorganisms
Applying knowledge and understanding on:	• Prevention of food-born diseases
Soft skills	Making informed judgements and choices • To acquire information needed for actions aiming to improve food salubrity Communicating knowledge and understanding • Ability to describe general and eco-physiological traits, contamination pathways and modes of prevention of the main food-born pathogenic microorganisms Capacities to continue learning • Ability to improve knowledge for food safety issues, from production to consumption ○
Syllabus	
Content knowledge	• Microorganisms indicating the quality and healthiness of foods • Classification of foodborne diseases • Distribution, prevalence and environmental adaptation of the main pathogenic microorganisms carried by food
Texts and readings	• Lecture notes and lecture materials provided during the course. • Loessner, D.A. Golden. Microbiologia degli alimenti. Springer. 2009. • Paparella, A., Schirone, M., Visciano, P. Igiene nei processi alimentari. Hoepli 2023 • Madigan, M.T., J.M. Martinko, D.A. Stahl, D. Clark. Biologia dei Microrganismi, vol. 1 – Microbiologia generale. Pearson Italia, 2012. • ICMSF. Microorganisms in foods 6 – Microbial Ecology of Food Commodities. 2.a ed. New York: Kluwer Academic/Plenum Publishers. 2005. • De Felip, G. Recenti sviluppi di Igiene e Microbiologia degli Alimenti. Tecniche Nuove. 2001. • Farris, G. A., M. Gobbetti, E. Neviani, M. Vincenzini. Microbiologia dei prodotti alimentari. Casa Editrice Ambrosiana. 2012.
Notes, additional materials	• Scientific papers
Repository	All teaching material will be available to students on web platforms (class Teams code *zd8ix5j*).

Assessment	
Assessment methods	The exam consists of an oral dissertation on the topics developed during the theoretical and theoretical-practical lectures in the classroom and in the laboratory production plants, as reported in the Academic Regulations for the Bachelor Degree in Food Science and Technology (article 9) and in the study plan (Annex A). Students attending at the lectures may have a middle-term preliminary exam, consisting of a written test, relative to the first part of the program, which will concur to the final evaluation and will be considered valid for a year. The evaluation of the preparation of the student occurs on the basis of established criteria, as detailed in Annex B of the Academic Regulations for the Bachelor's degree in food science and Technology. The foreign student's profit test can be done in English in the way described above.
Assessment criteria	Knowledge and understanding • To describe distribution, prevalence and environmental adaptation of the main food-born pathogenic microorganisms

	Applying knowledge and understanding • To describe how a food technologist may act in a prevention programme of food-born diseases Making informed judgements and choices • To describe how to act for improving food salubrity Communicating knowledge and understanding • To describe general and eco-physiological traits, contamination pathways and modes of prevention of the main food-born pathogenic microorganisms Capacities to continue learning • To describe the means for targeting personal knowledges for solving new food safety issues with particular regard to food contamination paths and practices aimed at reducing the risk of contracting infections, poisoning and toxic infections that can occur following ingestion of food
Final exam and grading criteria	The evaluation criteria that contribute to the attribution of the final mark will be: knowledge and understanding, the ability to apply knowledge, autonomy of judgment, i.e. the ability to criticize and formulate judgments, communication skills
Further information	
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