Annex 6

DISCIPLINE DESCRIPTION

1. Information on the study programme

1.1 Academic institution	**UNIVERSITY OF ORADEA**
1.2 Faculty	**FACULTY OF ENVIRONMENTAL PROTECTION**
1.3 Department	**FOOD PRODUCT ENGINEERING**
1.4 Field of study	**FOOD PRODUCT ENGINEERING**
1.5 Cycle of study	**MASTER**
1.6 Study programme/Qualification	**AGRI-FOOD SAFETY AND SECURITY /MASTER DEGREE**

2. Information on the discipline

2.1 Name of discipline			MICROBIOLOGIC CONTROL OF AGRI-FOOD PRODUCTS				
2.2 Course holder			ASSOCIATED PROFESSOR PhD BARA CAMELIA				
2.3 Seminar/Laboratory/Project holder			ASSOCIATED PROFESSOR PhD BARA CAMELIA				
2.4 Year of study	1	2.5 Semester	II	2.6 Type of evaluation	EX	2.7 Regime of discipline	C

(C) Compulsory; (O) Optional; (E) Elective

3. Total estimate time (hours per semester of didactic activities)

3.1 Number of hours per week	3	out of which: 3.2 course	2	out of which 3.3 seminar/laboratory/project	1
3.4 Total hours in the curriculum	42	out of which: 3.5 course	28	out of which 3.6 seminar/laboratory/project	14
Time allotment					58
Study assisted by manual, course support, bibliography and notes					10
Additional documentation in the library/ on specialised electronic platforms and in the field					10
Preparation of seminars/laboratories/ topics/reports, portfolios and essays					16
Tutorship					20
Examinations					2
Other activities.....					
3.7 Total hours of individual study	**58**				
3.9 Total hours per semester	**100**				
3.10 Number of credits	4				

4. Prerequisites (where appropriate)

4.1 curriculum	Previous knowledge of General Microbiology, Microbiology of Food Products, Hygiene of Food and Agrifood Units.
4.2 competences	Manipulation of biological samples in safe conditions for the user.

5. Conditions (where appropriate)

5.1. related to course	The course room equipped with video projector; internet connection
5.2. related to seminar/laboratory/ project	Food safety specific equipment for practical applications. Laboratory equipment: optical microscope, sample homogenizer, pH meter, UV lamp, related equipment (autoclave machine, oven, laminar flux), specific utensils (inoculation loops, pipettes).

6. Specific competences acquired	
Professional competences	**C5** Cooperation with the authorities responsible for food safety and quality. **C5.1** Identification of specialized terminology on the quality, standards and food hygiene in order to collaborate and cooperate with the authorities responsible for food safety and quality **C6** Consultancy, advice and carrying out extension activities. **C6.1** Identification of elementary concepts, theories, models and methods on the possibility of extending a production activity in the food industry
Transversal competences	CT1 Applying strategies of perseverance, rigor, efficiency and accountability in the work, punctuality and accountability for the results of personal activities, creativity, common sense, analytical and critical thinking, problem solving, etc., based on the rules and principles of professional ethics code values in the food sector. CT2 Applying networking techniques within a team, enhancement and shaping of empathic capacities of interpersonal communication and ownership of some specific tasks in the group activity to treat / solve individual / group conflict, as well as the optimal management of time. CT3 Efficient use of various ways and learning/ training techniques to acquire the information from electronic and bibliographic databases both in Romanian and in an international language, as well as to evaluate the need and usefulness of extrinsic and intrinsic motivation of continuing education.

7.Objectives of discipline (coming from the specific competencesacquired)

7.1 General objective	Description and use of basic concepts, theories and methods used in quality control and expertise of food products, related to the chemistry of the compounds that determine the quality and traceability of food products, to the transformations they undergo during processing, transport and storage, to equipment and methods for the determination and analysis of these compounds and the legislation in the field. The explanation and interpretation of the transformations that occurred during the production, storage, transportation of food products and the explanation and interpretation of the conceptual changes in the consumer profile and implicitly in the marketing policies. The application of principles and methods of projection,

	conception, execution and control for production, with the imposition and control of variation limit factors. To develop control and prevention strategies for emerging food borne pathogens, thereby helping to reduce the unacceptably high incidence of food borne disease and to improve the competitiveness of the food industry.
7.2 Specific objectives	To offer a comprehensive array of analytical tools to identify unwanted microbiological contamination issues. Applying the strategies of perseverance, rigor, efficiency and responsibility in work, punctuality and taking responsibility for the results of personal activity, creativity, common sense, analytical and critical thinking, problem solving, etc., based on the principles of the norms and values of the code of professional ethics in the field food.

8. Content*/

8.1 Course	Methods of teaching	No. of hours/Remarks
Identification of risks produced by food pathogens for human health.	Interactive Lecture	2
Microbial foodborne diseases.	Interactive Lecture	2
Purposes and needs and importance of microbiological quality control in food.	Interactive Lecture	2
Microbiological quality control of raw materials for food industry.	Interactive Lecture	2
Microbiological quality control quality control during food processing.	Interactive Lecture	2
Microbiological quality control of food alimentary products.	Interactive Lecture	2
Microbiological quality control of ready to eat food.	Interactive Lecture	2
Indicator microorganisms in food.	Interactive Lecture	2
Microbiological quality standards of food.	Interactive Lecture	2
Law aspects regarding microbiologycal quality of food.	Interactive Lecture	2
Microbiological quality assurance procedures in the food industry.	Interactive Lecture	2
Hazard Analysis Critical Control Point System.	Interactive Lecture	2
Food hygiene control measures.	Interactive Lecture	2
Ensuring food security through enhancing microbiological food control	Interactive Lecture	2

Bibliography

Bara Camelia, *Food Microbiology,* Oradea University Press, Oradea, 2005.
Bara Camelia, *Principles of appreciating the quality of some foods*, Oradea University Press, Oradea, 2008.
Bara Camelia, *Microbiology and quality of food of animal origin,* Oradea University Press, Oradea, 2008.
Apostu Sorin, *Food Microbiology, vol. II,* Cluj-Napoca, Risoprint Publishing House, 2006.
Bărzoi, D., Apostu, S., Microbiology of Foods, Risoprint Publishing House, Cluj-Napoca, 2002.
Dan, V., Microbiology of Foods, Alma Publishing House, Galați, 2001.

8.2 Seminar	Methods of teaching	No. of hours/ Remarks
Bibliography		
8.3 Laboratory	Methods of teaching	No. of hours/ Remarks
Microbiological sampling of food.	Explanations, exemplification, dialogue, case study, video	1
Indicator microorganisms in food. Cultural and microscopic methods of counting microorganisms.	Explanations, exemplification, dialogue, case study	1
Methods and laboratory techniques for detection microbiological quality of meat and meat products.	Explanations, exemplification, dialogue, case study	1
Methods and laboratory techniques for detection microbiological quality of fish.	Explanations, exemplification, dialogue, translations	1
Methods and laboratory techniques for detection microbiological quality of eggs.	Explanations, exemplification, dialogue, case study	1
Methods and laboratory techniques for detection microbiological quality of milk and milk products.	Explanations, exemplification, dialogue, case study	1
Methods and laboratory techniques for detection microbiological quality of fruits.	Explanations, exemplification, dialogue, case study, video	1
Methods and laboratory techniques for detection microbiological quality of vegetables.	Explanations, exemplification, dialogue, case study, video	1
Methods and laboratory techniques for detection microbiological quality of canned products.	Explanations, exemplification, dialogue, case study, video	1
Methods and laboratory techniques for detection microbiological quality of water.	Explanations, exemplification, dialogue, case study, video	1
Methods and laboratory techniques for detection microbiological quality of non beverage.	Explanations, exemplification, dialogue, case study, video	1
Methods and laboratory techniques for detection microbiological quality of beverage (wine and beer).	Explanations, exemplification, dialogue, case study, video	1
Methods and laboratory techniques for detection microbiological quality of cereals, flours and bakery	Explanations, exemplification,	1

products.	dialogue, case study, video	
Methods and laboratory techniques for detection microbiological quality of vegetable oil.	Explanations, exemplification, dialogue, case study, video	1
Bibliography Bara Camelia, *Practical work of microbiology*, Oradea, Oradea University Press, 2009. Bara, V., Chipurici, M., Zabik, A., Bara C., Nechita Derevenco, R., Paul, G., Bonta, M.,*General methods of practical microbiology*, Oradea, Oradea University Press, 2000. Bara Vasile, Bara Camelia, Pop Constantin, *Applied microbiology techniques*, Oradea, Oradea University Press, 1998.		
8.4 Project		
Bibliography		

* The content, respectively the number of hours allocated to each course / seminar / laboratory / project will be detailed during the 14 weeks of each semester of the academic year.

9. Corroboration of discipline content with the expectationsof the epistemic community, professional associations and representative employers from the field corresponding to the study programme

Understanding the basic concepts, theoretical and their application in practice. Elaboration and development of a specific food industry project or process, using concepts, theories and methods in the field. Preparation of a technical study by the efficient use of resources and sources of relevant and current documentation (including internet, databases, online courses).

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the final grade
10.4 Course	- for grade 5 - 50% knowledge of the subject for grade 6 - 60% knowledge of the subject for grade 7 - 70% knowledge of the Summative assessment - exam - written or oral test 70% subject for grade 8 - 80% knowledge of the subject for grade 9 - 90% knowledge of the subject for grade 10 - knowledge of the subject in proportion of 100% (the student proves the consultation of the	Summative assessment - exam - written or oral test	70%

	presented bibliographic material).		
10.5 Seminar			
10.6 Laboratory	for grade 5 - the student answers 50% of the questions correctly for grade 6 - the student answers 60% of the questions correctly for grade 7 - the student answers 70% of the questions correctly for grade 8 - the student answers 80% of the questions correctly for grade 9 - the student answers 90% of the questions correctly for grade 10 - the student answers 100% of the questions correctly	Practical evaluation	30%
10.7 Project			
10.8 Minimum standard of performance			
Execution of specific operations in the sphere of production according to the job description by complying with the rules of professional ethics and values. Making a portfolio by identifying and describing professional roles within a subordinate team. Accomplishing a bibliographic study on the food theme.			

Date of completion

01.10.2023

Signature of course holder**

Assoc.prof. PhD Camelia Bara
cameliabara@yahoo.com

Signature of seminar laboratory/project holder **

Assoc.prof. PhD Camelia Bara
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Date of approval in the department

01.10.2023

Signature of the Head of Department

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Dean signature

Assoc.prof. PhD Cristina Maerescu

** - Name, first name, academic degree and contact details (e-mail, web page, etc)will be specified.
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