UNIVERSITATEA DE ŞTIINŢE AGRICOLE ŞI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
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Nr._____din _____ **Form code USAMV CN - 0701040217**

SUBJECT OUTLINE

1. General data

1.1. Higher Education Institution	University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca
1.2. Faculty	Faculty of Food Science and Technology
1.3. Department	Food Science
1.4. Study field	Food Engineering
1.5. Study level[1)]	Cycle 1. Bachelor
1.6. Specialization/ Study Program	Technology of Agricultural Products Processing
1.7. Teaching Form	Regular studies

2. Course Characteristics

2.1. Name of the course	**Foodborne Diseases**							
2.2. Course leader				Proffesor PhD. Ancuţa M. Rotar				
2.3. Coordinator of the laboratory/seminar activity				Lecturer PhD. Carmen Rodica Pop				
2.4. Year of study	**IV**	2.5. Semester	**VIII**	2.6. Type of Evaluation	Continuous	2.7. Course regime	Content[2]	DD
							Level of compulsory[3]	DO

3. Total estimated time (hours/semester for the teaching activities)

3.1. Number of hours/week– frequency form	2	Of which care: 3.2. course	1	3.3. seminar/ laboratory/ project	1
3.4. Total hours in the curricula	28	Of which: 3.5. course	14	3.6. seminar/laboratory	14
Distribution of time					hours
3.4.1. Study based on handbook, notes, bibliography					4
3.4.2. Extra documentation in the library, on specific electronic platforms and on field					6
3.4.3. Prepare the seminars / laboratories / projects, theme, essays,reports, portofolio					6
3.4.4. Tutorial					4
3.4.5. Examination					2
3.4.6. Other activities					
3.7. Total hours of individual study	25				
3.8. Total hours per semester	50				
3.9. Number of ECTS [4]	2				

4. Pre-conditions (where is the case)

4.1. of curriculum	Getting base of: Food Biochemistry, Food Chemistry, Food Microbiology, Food Toxicology
4.2. of competences	Handling of biological samples under security conditions for the user and the environment

5. Conditions (where is the case)

5.1. of course development	Space and facilities: Classroom equipped with board, projector and computer
5.2. of seminar/laboratory/project development	Laboratory Equipment: Photon microscope; UV lamp; Thermostat; gas connection; related facilities (autoclave, oven, utensils specific)

6. Specific acquired competences

Proffesional competences	C1.2. Explain and interpret concepts, processes, models and methods in food science, using basic knowledge of microbiological safety of food C1.3. Apply basic principles and methods in microbiology to solve engineering and technological problems, including those related to food safety C2.3. To apply the principles and methods of microbiological investigation for solving technological problems in the agri-food chain
Transversal competences	CT2. Applying interrelationship techniques within a team; amplifying and refining the empathic capacities of interpersonal communication and of assuming specific attributions in carrying out the group activity in order to treat / solve individual / group conflicts, as well as the optimal time management.

7. Suject Objectives (as a result of the specific acquired competences)

7.1. Subject general objectives	Study of the main diseases through etiologic agents of bacterial and viral nature Knowledge of physiology, morphology and resistance of microorganisms to environmental conditions and the possibility of avoiding their presence and multiplication of food by knowing the morphological characters and and physiological behavior of the main groups of microorganisms with practical implications
7.2. Specific objectives	To know the way and the conditions in which the is achieved the food contamination with bacterial and viral microbial agents To acquire the techniques for identifying the main microorganisms involved in food contamination To ensure and understand the implications of this discipline in maintaining the food quality and protecting the health of consumers

8. Content

Crt. No.	**8.1.COURSE** **Number of hours – 14**	Methods of teaching Lecture	Observations Lecture
1.	**INTRODUCTION** The concept of bacterial diseases; History bacterial diseases; Frequency, severity and importance of bacterial diseases; Etiology and etiological classification of bacterial diseases	Lecture, heuristic conversation, explanation	2 lectures
2.	**BACTERIAL DISEASES** Anthrax, Tuberculosis, Campylobacteriosis, Listeriosis; Shigellosis - history, etiology and epizootological characters; Sources of contamination; Resistant organism to environmental factors and disinfectants; Clinical Features; Diagnosis and Prevention; Legislative measures on foodborne diseases - the destination of carcasses and edible by-products	Lecture, heuristic conversation, Explanation	3 lectures
3.	**FOODBORNE DISEASE** Foodborne disease caused by *E. coli*, EPEC, ETEC EIEC EHEC, Foodborne disease caused by *Salmonella*;	Lecture, heuristic	2 lectures

	History, etiology and epizootological characters, Sources of contamination, The resistance of microorganism to environmental factors and disinfectants ;Clinical Features, Diagnosis and prevention; Legislative measures on foodborne diseases - destination carcasses and edible by-products	conversation, Explanation	

Crt. No.	**8.2. PRACTICAL WORK Number of hours – 14**	Teaching Method: Case Study	Practical work
1.	Anthrax, Tuberculosis, Campylobacteriosis, listeriosis, Shigellosis - Methods of diagnosis and identification, case studies.	Case study, simulation of situations, methods of group work, individual	3 Practical works (6 hours)
2.	Foodborne disease caused by *E. coli*, EPEC, ETEC EIEC EHEC, Foodborne disease caused by *Salmonella*;	Case study, simulation of situations, methods of group work, individual	3 Practical works (6 hours)
3.	Oral Examination	-	1 Practical work (2 hours)
Compulsory bibliography 1. Ancuţa M. Rotar, Sorin Apostu – Bolitransmisibile prin alimente la om, Ed. Risoprint, 2009, 2. Apostu S., Ancuţa M. Rotar – "Microbiologia produselor alimentare", vol. 2, Ed. Risoprint, 2012, Cluj-Napoca 2. Apostu Sorin, Mihaela-Ancuţa Rotar, Carmen R. Pop – "Microbiologia produselor alimentare", vol.3, Ed. Risoprint, 2012, Cluj-Napoca			
Optional bibliography 1. Bărzoi D., Meica S., Negrut M. – "Toxiinfecţiile alimentare", Ed. Diacon Coresi, 1999, Bucureşti			

9. Correlations between the subject against the expectations of the epistemic communitiy representatives, of the professional associations and employers' representatives in the domain

Knowledge of all aspects presented at the practical work and lectures.
Knowledge of biological risks induced on consumers by certain groups of microorganisms contaminating the food.
Food microbiological quality control for biochemical stability and food security.
Practical skills in microbiology laboratory
Involving students in the activity and discussions on the the matters presented

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation methods	10.3. Percent of the final grade
10.4. Course	Evaluation the knowledge acquired,	**Written continuous assessment** (Evaluation of the answer sheets)	70%
10.5. Seminar/Laboratory	Evaluation the knowledge acquired, evaluation the practical knowledge, degree of involvement and individual study	**Oral final colloquium** (Practical assessment of professional competence gained)	30%
10.6. Minimal standard of performance : Elaboration of a solution for the elimination of risk factors in a manufacturing process			

[1] Level of study- to be chosen one of the following - Bachelor/Post graduate/Doctoral
[2] Course regime (content) – for bachelor level it will be chosen one of the following - DF (fundamental subject), DD (subject in the domain), DS (specific subject), DC (complementary subject).

[3] Course regime (compulsory level) - to be chosen one of the following - DI (compulsory subject), DO (optional subject), DFac (facultative subject)
[4] One ECTS is equivalent with 25-30 de hours of study (didactical and individual study).

Filled in on
08.09.2021

Course coordinator
Proffesor PhD. Ancuţa M. Rotar

Laboratory work/seminar coordinator
Lecturer PhD. Carmen Rodica Pop

Subject coordinator
Proffesor PhD. Ancuţa M. Rotar

Approved by the
Department on
22.09.2021

Head of the Department
Proffesor PhD. Ramona Suharoschi

Approved by the Faculty
Council on
28.09.2021

Dean
Proffesor PhD. Elena Mudura