UNIVERSITATEA DE ŞTIINŢE AGRICOLE ŞI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
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No._____of _____ **USAMV form CN-0701030105**

SUBJECT OUTLINE

1. Information on the programme

1.1. Higher education institution	University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca
1.2. Faculty	Food Science and Technology
1.3. Department	Food Science
1.4. Field of study	Food Engineering
1.5.Education level	Bachelor
1.6.Specialization/ Study programme	**Technology of Agricultural Products ProcessingTPPA)**
1.7. Form of education	Full time

2. Information on the discipline

2.1. Name of the discipline	Food innocuity							
2.2. Course coordinator				Prof dr Ramona Suharoschi				
2.3. Seminar/ laboratory/ project coordinator				Lecturer dr Oana Lelia Pop				
2.4. Year of study	III	2.5. Semester	**V**	2.6. Type of evaluation	continuous	2.7. Discipline status	Content[2]	DD
							Compulsoriness [3]	DI

3. Total estimated time (teaching hours per semester)

3.1. Hours per week – full time programme	4	out of which: 3.2. lecture	2	3.3. seminar/ laboratory/ project	1
3.4.Total number of hours in the curriculum	42	Out of which: 3.5.lecture	28	3.6.seminar/laboratory	14
Distribution of the time allotted					hours
3.4.1. Study based on book, textbook, bibliography and notes					10
3.4.2. Additional documentation in the library, specialized electronic platforms and field					5
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					10
3.4.4.Tutorials					4
3.4.5.Examinations					4
3.4.6. Other activities					0
3.7. Total hours of individual study	33				
3.8. Total hours per semester	75				
3.9. Number of credits[4]	3				

4. Prerequisites (is applicable)

4.1. curriculum-related	Food Chemistry, Food Biochemistry, Principles of Human Nutrition, General and Special Microbiology; Physical and colloidal chemistry, Analytical chemistry, Organic chemistry, Food additives, Food authentication and falsification 1, Vegetable raw materials
4.2. skills-related	The student must have knowledge regarding the chemical and biochemical characteristics of the compounds specific to living matter; microbiological contaminants; operating IT; office use (xls); Internet browsing; qualities of individual work and participation in professional development

5. Conditions (if applicable)

5.1. for the lecture	Classroom with appropriate capacity equipped with multimedia equipment and internet connection
5.2. for the seminar/ laboratory/ project	TLC system - Risk Assessment with Food Contamination Risk Analysis, eLP practical works guide, specialized books.

6. Specific competences acquired

Professional competences	C1.1. Description and use of basic concepts, theories and methods in food science (defined in multidisciplinary terms), regarding the structure, properties and transformations of food components and contaminants during the agri-food chain 1-3. Application of basic principles and methods in food science to solve engineering and technological problems, including those related to food safety C5.1- Identification of specialized terminology regarding the quality, standards and hygiene of food products in order to collaborate and cooperate with the responsible institutions in the field of food quality and safety C5.3 - Identify the problems specific to food safety and the responsibilities related to solving them C5.5 - Creating multi-institutional teams designed to find and implement solutions to specific food quality and safety problems
Transversal competences	CT1 - Applying strategies of perseverance, rigor, efficiency and responsibility at 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, norms and values of the code professional ethics in the food field. CT3 - Efficient use of various ways and techniques of learning - training for the acquisition of information from bibliographic and electronic databases both in Romanian and in an international language, as well as assessing the need and usefulness of extrinsic and intrinsic motivations of education continue.

7. Course objectives (based on the list of competences acquired)

7.1. Overall course objective	To know the basic principles of human nutrition; to know and understand the role of macronutrients in public health; to know and understand the role of micronutrients in public health and food safethy
7.2. Specific objectives	Correlation with other disciplines specific to the specialization; Clear, correct expression; Explaining and exemplifying notions; Stimulating the active participation of students.

8. Content

8.1.LECTURE **Number of hours – 28**	Teaching methods Lecture	Notes 1 lecture = 2 hours
1. General notions - Definition Food Safety: Fundamental Principles	Lecture, explanation and debates	4 hours
2. Natural contaminants that affect food safety.	Lecture, explanation and debates	2 hours
3. Environmental contaminants that affect food safety	Lecture, explanation and debates	2 hours
4. Chemical risks	Lecture, explanation and debates	4 hours
5. Biological risks	Lecture, explanation and debates	4 hours
6. Physical risks	Lecture, explanation and debates	2 hours
	Lecture, explanation and debates	2 hours

7. Risk assessment (physical, chemical, biological) in terms of food safety **8. Case studies - presentation**	Lecture, explanation and debates (evaluation)	8 hours

8.2. PRACTICAL WORK **Number of hours –14 hours**	Theoretical presentation of practical works	1 lab work (2 hours / work)
Working instructions and technical norms of work safety in the laboratory. Work organization, fire protection norms and first aid measures in case of accidents. Risk Analysis: risk identification, characterization, contamination pathway, AML, identification methods, decontamination methods	Practical work	2 hours
Risk Analysis of food products of animal origin - case study - meat and meat products; Individual projects: assignments + presentation	Practical work	2 hours
Risk Analysis of animal food products - case study - milk and dairy products Individual projects: assignments + presentation	Practical work	4 hours
Risk Analysis of food products of vegetable origin - case study - raw / semi-processed / processed fruits, vegetables, cereals	Practical work	4 hours
Individual projects: assignments + presentation	Practical work	2 hours

Compulsory bibliography:

1 Banu, C., Preda, N., Vasu, S., 1982, *Produsele alimentare şi inocuitatea lor*, Ed.Tehnică, Bucureşti;
2. Segal, B., Balint, C., 1982, *Procedee de îmbunătăţire a calităţii şi stabilităţii produselor alimentare*, Ed. Tehnică, Bucureşti;
3. Cotrău, M., ş.a., 1991, *Toxicologie*, Ed. Didactică şi Pedagogică, Bucureşti;
4. Savu, C., 1999, *Poluarea mediului si prezenta substanţelor toxice in alimente –controlul calităţii alimentelor*, Ed. Semne, Bucureşti;
5. Macovei, N., 2000, *E-urile si problemele de sănătate*, Ed. Asociatiei,Cristiana Bucureşti,
6. Bibek, R., Fundamental Food Microbiology, CRC Press, London, New York;
7. Steinhart, C.E., Doyle, M.E., Cochrane, B.A., Food Safety, Ed. Marcel Dekker, inc. New York

Optional bibliography: -

*1.*Ecotoxicology and Environmental Safety
2. Environmental Toxicology and Pharmacology
3. Food and Chemical Toxicology
4. Savu, C., 1999, Poluarea mediului si prezenta substanţelor toxice in alimente -controlul calitatii alimentelor, Ed. Semne, Bucureşti.

9. Corroborating the course content with the expectations of the epistemic community representatives, of the professional associations and of the relevant stakeholders in the corresponding field

The knowledge taught in the course is necessary to know and understand the role of food safety in ensuring food safety and the role of the food industry specialist in the development of safe food, without risk to the consumer.

10. Assessment

Type of activity	10.1. Assessment criteria	10.2. Assessment methods	10.3. Percentage of the final grade

10.4. Lecture	periodic or partial tests	Verification along semester - a number of 4 verifications are scheduled	35%
	participation in scientific circles and / or professional competitions	Practical and theoretical skills	5%
10.5. Seminar/Laboratory	Evaluation during the semester	Assignments	20%
	Final evaluation (the scheduled assignments)	Written exam	40%
10.6. Minimum performance standards			
• Solving a concrete food science problem based on a given algorithm • Carrying out a literature study (nutrition and health).			

[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
Prof dr. SUHAROSCHI Ramona

Laboratory work/seminar coordinator
Lecturer. dr.POP Oana Lelia

Subject coordinator
Prof dr. SUHAROSCHI Ramona

Approved by the Department on
22.09.2021

Head of the Department
Prof dr. SUHAROSCHI Ramona

Approved by the Faculty Council on
28.09.2021

Dean
Prof dr. MUDURA Elena