

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 ENGINEERING
1.4 Field of study	CONTROL AND EXPERTISE OF FOOD PRODUCTS
1.5 Cycle of study	BACHELOR
1.6 Study programme/Qualification	CONTROL AND EXPERTISE OF FOOD PRODUCTS/ ENGINEER

2. Information on the discipline

2.1 Name of discipline	FOOD SAFETY I						
2.2 Course holder	Lecturer PhD. Morna Anamaria Aurelia						
2.3 Seminar/Laboratory/Project holder	Lecturer PhD. Morna Anamaria Aurelia						
2.4 Year of study	II	2.5 Semester	III	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	4	out of which: 3.2 course	2	out of which 3.3 seminar/laboratory/project	2
3.4 Total hours in the curriculum	56	out of which: 3.5 course	28	out of which 3.6 seminar/laboratory/project	28
Time allotment					hours
Study assisted by manual, course support, bibliography and notes					28
Additional documentation in the library/ on specialised electronic platforms and in the field					7
Preparation of seminars/laboratories/ topics/reports, portfolios and essays					28
Tutorship					4
Examinations					2
Other activities.....					
3.7 Total hours of individual study	69				
3.9 Total hours per semester	125				
3.10 Number of credits	5				

4. Prerequisites (where appropriate)

4.1 curriculum	-
4.2 competences	-

5. Conditions (where appropriate)

5.1. related to course	Videoprojector, screen. Students will not be present at lectures, with open mobile phones. Also, phone calls will not be tolerated during the course, nor by students leaving the classroom to retrieve personal phone calls. Students will not be tolerated to delay the course as it proves disruptive to the educational process.
5.2. related to seminar/laboratory/ project	Students will not be present in laboratories, with mobile phones open. Also, phone calls will not be tolerated during laboratory or by students leaving the

	classroom to retrieve personal phone calls. Students will not be tolerated delay to the laboratory as it proves disruptive to the educational process.
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6. Specific competences acquired	
Professional competences	<p>C4.2. Explanation and interpretation of concepts, methods and models used in food control, using basic knowledge on chemical compounds that determine the food quality, the transformations that they undergo during processing, transport and storage, and methods for the determination and analysis of these compounds.</p> <p>C4.4. Assessment of the characteristics, efficiency and limitations of some methods and equipment used in food analysis and quality control.</p> <p>C5.1. Description and use of basic concepts, theories and methods used in food expertise related to chemical compounds that determine the quality and traceability of food products, the transformations that they undergo during processing, transport and storage, the apparatus and methods for determining and analysis of these compounds and the relevant legislation (knowledge provided by the disciplines of general, inorganic, organic chemistry, food chemistry, biochemistry, analytical chemistry, instrumental analysis, microbiology, hygiene, food additives, food quality control).</p> <p>C5.2. Explanation and interpretation of concepts, methods and models used in food expertise, using basic knowledge on chemical compounds that determine the quality and traceability of food products, the transformations that they undergo during their processing, transport and storage, the methods for the determination and analysis of these compounds and relevant legislation.</p>

7. Objectives of discipline (coming from the specific competences acquired)

7.1 General objective	Become familiar with key concepts and approaches in the field of Food safety.
7.2 Specific objectives	<p>Determination of the presence and determination by physicochemical methods potentially toxic substances in air, water, soil and food.</p> <p>Formation of intellectual abilities through the student to develop skills to work with the concepts previously learned, to transfer knowledge to new situations, solve problems with theoretical and practical content, and the ability to get information independently.</p>

8. Content*/

8.1 Course	Methods of teaching	No. of hours/ Remarks
Food safety - definitions, general notions.	Interactive Lecture with PowerPoint Presentation	2
Food contamination. Toxicity and factors affecting the safety of food products. Substance-dependent factors. Body-dependent factors. Factors dependent on the environment.	Interactive Lecture with PowerPoint Presentation	2
Behavior of toxic substances in the body (toxicokinetics) - penetration, absorption, distribution, storage, accumulation, biotransformation (metabolization), elimination.	Interactive Lecture with PowerPoint Presentation	4
The action of toxins on the body (toxicodynamics) - at the molecular level; at the cellular level; at the level of tissues, at the level of devices and systems.	Interactive Lecture with PowerPoint Presentation	2
The toxic effects produced by substances with toxic potential that affect the safety of food products.	Interactive Lecture with PowerPoint Presentation	2
Natural toxic substances that affect the safety of food products. Natural toxins in food products of animal origin. Toxic phytochemicals.	Interactive Lecture with PowerPoint Presentation	2
Contamination of food products with toxin-producing molds. Mycotoxins in food products of plant origin. Mycotoxins in food products of animal origin.	Interactive Lecture with PowerPoint Presentation	4

Industrial toxic pollutants. Dioxins. Heavy metals.	Interactive Lecture with PowerPoint Presentation	2
Chemical contaminants of food. Pesticide residues.	Interactive Lecture with PowerPoint Presentation	4
Food irradiation.	Interactive Lecture with PowerPoint Presentation	2
Recapitulation of the matter. Exam topics.	Interactive Lecture with PowerPoint Presentation	2
Bibliography <ol style="list-style-type: none"> Alexa Ersilia, 2003, Contaminanți în produse vegetale, Editura Eurobit Timișoara Banu C-tin, 1982, Produse alimentare și inocuitatea lor-, Editura Tehnică București Chirigiu Liviu, Maria-Viorica Bubulică, Lucrețiu Radu, 2010, Analiza chimică a alimentelor, Ed. Sitech, Craiova Chiș Adriana, 2009, Elemente de toxicologie alimentară, Ed. Univ.din Oradea Chiș Adriana, 2008, Ecotoxicologie alimentară, Ed. Univ.din Oradea Cotrău Martian, Maria Proca, 1968, Toxicologie analitică, Ed. Medicală, București Cotrău M., Ghimicescu Camelia, 1968, Lucrări practice de toxicologie, Lit. I.M.F. Iași Drugă Marioara, 2007, Toxicologie alimentară, Ed. Mirton Timișoara Hura Carmen, 2005, Studii toxicologice ale unor substanțe chimice, Ed. Cerami Iași Morna Anamaria, 2015, Toxicologia produselor agroalimentare, Note de curs Tamba-Berehoiu Radiana, Stela Popescu, 2007, Tehnici experimentale și lucrări practice de toxicologie biotehnologică alimentară, USAMV București Tamba-Berehoiu Radiana, 2011, Toxicologie alimentară – note de curs, USAMV București. 		
8.3 Laboratory		
Safety and work protection technical norms in the safety laboratory. Training students and filling out personal labor protection forms.	Lecture	2
Units of measure specific to the safety of food products. Applications I	Presentation and experimentation	2
Units of measure specific to the safety of food products. Applications II	Presentation and experimentation	2
Transformation of the units of measure specific to the safety of food products. Applications	Presentation and experimentation	2
Calculation methods for quantifying toxicity. Applications I	Presentation and experimentation	2
Calculation methods for quantifying toxicity. Applications II	Presentation and experimentation	2
Calculation methods for determining the dose-response relationship. Applications I	Presentation and experimentation	2
Calculation methods for determining the lethal dose. Applications I	Presentation and experimentation	2
Calculation methods for determining the lethal dose. Applications II	Presentation and experimentation	2
Calculation methods for determining exposure to chemical contaminants. Applications	Presentation and experimentation	2
Calculation methods for determining exposure to ionizing radiation. Applications	Presentation and experimentation	2
Calculation methods used for toxic substances of chemical contamination. Applications	Presentation and experimentation	2
Calculation methods for determining the metabolism of substances with toxic potential. Applications	Presentation and experimentation	2
Summary issues. Final evaluation.	Practical exam.	2
Bibliography <ol style="list-style-type: none"> Chiș Adriana, 2009, Elemente de toxicologie alimentară, Ed. Univ.din Oradea 		

- *** www.codexalimentarius.net

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

Course contents " FOOD SAFETY I " is consistent with, what is done in other universities in the country, food engineering profiles. By learning the theoretical concepts and practical aspects included in discipline approach, students acquire knowledge that consistent, according to the skills required for possible occupations provided in Grid - RNCIS.

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the final grade
10.4 Course	The way responded by questions	Oral exam	70%
10.6 Laboratory	<ul style="list-style-type: none"> The mode of execution/calculation practical examples. Modality of solving issues of practical textbook. 	Summative Evaluation <ul style="list-style-type: none"> Continuous assessment based on practical operational activity in additional laboratory and themes Test for calculation of units of measure used in food safety. 	<div>20%</div> <div>10%</div>
10.8 Minimum standard of performance			
Minimum performance standards: minimum 4 oral exam questions; Note 5 minimum laboratory activities.			

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