



No. _____ of _____

USAMV form CN-0703040214

SUBJECT OUTLINE

1. Information on the programme

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| 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 | Food Engineering (IPA) |
| 1.7. Form of education | Full time |

2. Information on the discipline

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|---|----------------------------|---------------|------|-------------------------|-----------|------------------------|-----------------------------|----|
| 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 | IV | 2.5. Semester | VIII | 2.6. Type of evaluation | Summative | 2.7. Discipline status | Content ² | DD |
| | | | | | | | Compulsoriness ³ | DI |

3. Total estimated time (teaching hours per semester)

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|---|----|----------------------------|----|-----------------------------------|-------|
| 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 | | | | | 5 |
| 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 | | | | | 1 |
| 3.4.4. Tutorials | | | | | 6 |
| 3.4.5. Examinations | | | | | 3 |
| 3.4.6. Other activities | | | | | 0 |
| 3.7. Total hours of individual study | 34 | | | | |
| 3.8. Total hours per semester | 75 | | | | |
| 3.9. Number of credits ⁴ | 3 | | | | |

4. Prerequisites (is applicable)

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| 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 |



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5. Conditions (if applicable)

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|---|---|
| 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

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|--------------------------|--|
| Professional competences | <p>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</p> <p>1-3. Application of basic principles and methods in food science to solve engineering and technological problems, including those related to food safety</p> <p>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</p> <p>C5.3 - Identify the problems specific to food safety and the responsibilities related to solving them</p> <p>C5.5 - Creating multi-institutional teams designed to find and implement solutions to specific food quality and safety problems</p> |
| Transversal competences | <p>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.</p> <p>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.</p> |

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

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| 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 safety |
| 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 |
| 7. Risk assessment (physical, chemical, biological) in terms of food safety | Lecture, explanation and debates | 2 hours |



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| 8. Case studies - presentation | Lecture, explanation and debates (evaluation) | 8 hours |
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| 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, <i>Produsele alimentare și inocuitatea lor</i> , Ed. Tehnică, București; 2. Segal, B., Balint, C., 1982, <i>Procedee de îmbunătățire a calității și stabilității produselor alimentare</i> , Ed. Tehnică, București; 3. Cotrău, M., ș.a., 1991, <i>Toxicologie</i> , Ed. Didactică și Pedagogică, București; 4. Savu, C., 1999, <i>Poluarea mediului și prezenta substanțelor toxice în alimente –controlul calității alimentelor</i> , Ed. Semne, București; 5. Macovei, N., 2000, <i>E-urile și problemele de sănătate</i> , Ed. Asociației, Cristiana București, 6. Bibek, R., <i>Fundamental Food Microbiology</i> , CRC Press, London, New York; 7. Steinhart, C.E., Doyle, M.E., Cochrane, B.A., <i>Food Safety</i> , 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, <i>Poluarea mediului și prezenta substanțelor toxice în alimente -controlul calitatii alimentelor</i> , Ed. Semne, București. | | |

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 | Exam | 35% |
| | participation in scientific circles and / or professional competitions | Practical and theoretical skills | 5% |



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|--|--|--------------|-----|
| 10.5. Seminar/Laboratory | Evaluation during the semester | Assignments | 20% |
| | Final evaluation (the scheduled assignments) | Written exam | 40% |
| 10.6. Minimum performance standards | | | |
| <ul style="list-style-type: none">• 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