

COURSE DESCRIPTION

Food Control - Quality Standards and Specific Legislation

Academic year 2026-2027

1. Programme-related data

1.1. Higher Education Institution	BABES-BOLYAI UNIVERSITY
1.2. Faculty	CHEMISTRY AND CHEMICAL ENGINEERING
1.3. Department	CHEMISTRY
1.4. Field	CHEMISTRY
1.5. Level of study	MASTER
1.6. Degree programme / Qualification	FOOD CONTROL AND SECURITY/MASTER DIPLOMA
1.7. Form of education	IN-PERSON

2. Course-related data

2.1. Course title	Food Control - Quality Standards and Specific Legislation			Course code	CME6325
2.2. Course coordinator	Assoc. Prof. Habil. Dr. Augustin C. Moț				
2.3. Seminar coordinator	Assoc. Prof. Habil. Dr. Augustin C. Moț				
2.4. Year of study	I	2.5. Semester	2	2.6. Type of assessment	Progress check
2.7. Course status	Compulsory			2.8. Course type	Specialisation subject

3. Total estimated time (hours per semester of teaching activities)

3.1. Number of hours per week	4	of which: 3.2. course	2	3.3. seminar/ laboratory/ project	2
3.4. Total of hours in the curriculum	56	of which: 3.5. course	28	3.6. seminar/ laboratory	28
Time allocation for individual study (IS) and self-taught activities (ST)					69 hours
Learning from textbooks, course materials, bibliography, and notes (IS)					21
Additional research in the library, on subject-specific electronic platforms, and on-site					21
Preparing seminars/ laboratories/ projects, assignments, reports, portfolios, and essays					12
Tutoring (professional guidance)					11
Examinations					4
Other activities					0
3.7. Total hours of individual study (IS) and self-taught activities (ST)				69	
3.8. Total hours per semester				125	
3.9. Number of credits				5	

4. Prerequisites (where applicable)

4.1. curriculum-related	Not applicable	
4.2. skills-related	Not applicable	

5. Specific conditions (where applicable)

5.1. course-related	A room equipped with a video projector is required
5.2. seminar/laboratory-related	The student must be familiar with the principles of seminars and have prepared an outline of the seminar to be discussed

6.1. Competencies resulting from the completion of the degree programme (as referred to in the curriculum)¹

¹ The professional and/or transversal skills targeted by the subject for which the course description is prepared will be copied from the curriculum of the degree programme. For each competency, the complete entry, including the competency code, will be copied with the exact wording that appears in the curriculum, without any changes.

Professional competencies	
Competency code	Competency
CP4	Manages chemical analysis procedures
CP6	Conducts scientific research
PC7	Performs quality control
Transversal competencies	
Competency code	Competency
CT1	Manages personal professional development

6.2. Learning outcomes relevant to the degree programme (as referred to in the curriculum)²

Learning outcomes targeted by the subject		
Competency code	Knowledge and comprehension	Specific academic skills
PC4, CT1	Demonstrates knowledge of modern analytical techniques and methods applied in the qualitative and quantitative analysis of food system components.	<ol style="list-style-type: none"> 1. Uses modern instrumental techniques for qualitative and quantitative analysis of food components. 2. Develops technical-scientific reports and formulates well-argued conclusions regarding the compliance and safety of the analyzed food products.
PC7, CT1	Knows the physico-chemical, microbiological, and organoleptic quality parameters of different types of food and the permitted limits according to standards.	<ol style="list-style-type: none"> 1. Integrates knowledge of biochemistry, microbiology, toxicology, traceability, and packaging safety into food safety management systems and quality control procedures. 2. Classifies and characterizes the food waste generated in the food industry and evaluates the impact of food waste on the environment and public health 3. Selects and applies processing technologies appropriate to the type of food product to meet quality and safety standards.

7. Subject-specific learning outcomes

Knowledge and comprehension
1. Demonstrates a comprehensive understanding of the principles, structure, and role of standardization, certification systems, and international regulatory frameworks (e.g., ISO standards, HACCP, Codex Alimentarius) in ensuring food quality, safety, and compliance within the agri-food chain.
2. Explains the physico-chemical, microbiological, and technological parameters that define food quality and safety, including risk analysis concepts, traceability systems, and the legislative requirements governing food formulation, labelling, packaging, and authentication.
3. Understands the theoretical foundations and regulatory context of analytical methodologies (chromatographic, spectroscopic, enzymatic, sensory, and chemometric) applied in food control, including their role in detecting adulteration, contaminants, and ensuring conformity with quality standards.

If no competency is copied from either of the two categories, the row corresponding to that category is deleted from the table.

² The learning outcomes relevant to the degree programme and targeted by the subject for which the course description is prepared will be listed. The entries, copied without any changes from the Curriculum by subject type (Core Subject/Specialisation Subject/Complementary Subject), are listed under the corresponding competency.

Specific academic skills
1. Applies standardized analytical and control methods (instrumental, enzymatic, chromatographic, spectroscopic, and sensory) for the qualitative and quantitative evaluation of food products, ensuring compliance with relevant ISO and national standards.
2. Designs, implements, and documents food safety and quality management procedures (e.g., HACCP plans, traceability systems, audit protocols), including risk assessment and critical control point identification within the agri-food chain.
3. Interprets analytical data and legislative requirements to assess food product conformity, identify adulteration or contamination, and formulate scientifically justified conclusions and technical reports for quality control and regulatory compliance.

8. Contents

8.1. Course	Teaching and learning methods	Remarks³
8.1.1 Standardization, certification, and legislation in food control and processing – terminology, examples, and classification. Standardization and its role in the agri-food industry.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.2 Objectives and advantages of standardization. National and international standards for the main products and processes in the agri-food industry.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.3 ISO 22000:2005 and the hazard analysis and critical control point (HACCP) system in food safety. The principles and typical plans for HACCP implementation.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.4 Preparation of documentation and auditing according to the HACCP system. External and internal audits in food control.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.5 Structure and history of the Codex Alimentarius Commission. Searching the Codex database and presenting a Codex document. Drafting a standard of the Codex Alimentarius Commission.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.6 Codes of good practice for food safety: standard hygiene procedures (GHP) and good manufacturing practices (GMP) for food products.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.7 Quality assurance in the agri-food chain. Quality systems for food products of animal origin. Quality systems for food products of plant origin. Control of pesticides and endogenous compounds. Progress check 1.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.8 Food quality management. Control and risk analysis in food safety. Risks and biosafety. Methods for improving food product quality and reducing risks in food safety.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.9 Standards and legislation regarding the formulation of commercial food products, nutritional labeling, presentation, packaging development, advertising, and design of commercial food products.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours

³ For example, organisational aspects, recommendations for students, specific aspects relating to the course/seminar, such as inviting experts in the field, etc.

8.1.10 Procedures for evaluating the conformity of food products. Internal managerial control. Consumer protection and rights. The European and national legislative framework regarding consumer protection.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.11 Traceability in the agri-food chain. Good practice for monitoring the origin of raw materials and the processing history of the product.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.12 Legislative framework regarding food authentication and counterfeiting. Chromatographic, spectroscopic, and chemometric analysis techniques for food authentication and counterfeiting.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.13 Legislative framework regarding original traditional food products. Certification of traditional products. Products with a controlled geographical indication. Organic and bio products.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours
8.1.14 Legal consequences regarding food adulteration. Legislative penalties for deviations from the legal standards in force regarding food quality and safety. Notable incidents concerning food safety. Progress check 1.	Lecture; Explanation; Conversation; Description; Problematisation	2 hours

Bibliography:

1. P.A. Luning, W.J. Marcelis, W.M.F. Jongen, 2002, Food Quality management, a techno-managerial approach, Wageningen Pres
 2. Y. Motarjemi, H. Lelieveld, 2014, Food Safety Management. A Practical Guide for the Food Industry, Aspen Publishers
 3. S. Mortimore, C. Wallace, HACCP: A Practical Approach, 1999, Blackie Academic & Professional
 4. I. Banu, et al., 2007, Tratat de inginerie alimentara, Ed. AGIR, Bucharest
- C. Banu et. al., 2003. Principii de drept alimentar, Editura Agir, Bucharest

8.2. Seminar/ laboratory	Teaching and learning methods	Remarks
8.2.1. Presentation of the topic. Occupational safety. Student obligation: reading the occupational safety report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.2. Standardization of methods for evaluating antioxidant capacity. The TEAC method. Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.3. Standardized methods for sensory analysis. The duo-trio test and the two-out-of-five test. Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.4. Standardized methods for sensory analysis. The paired comparison test and the triangle test. Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.5. Application of SR 13423:1999 and SR 13424:1999. Enzymatic preparations for the food industry. Peroxidase and papain. Determination of enzymatic activity. Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours

8.2.6. Application of SR EN 1786:2003 Food products. Determination of irradiation in foods containing bones. The EPR spectroscopy method. Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.7. SR EN ISO 22000:2005 - Food safety management systems. Requirements for any organization in the food chain. Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.8. ICS Standards 67.080.10 - Fruits and derived products. Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.9. SR EN ISO 23275-2:2009 Fats and oils of animal and vegetable origin. Cocoa butter equivalents in cocoa butter and household chocolate. Quantification of cocoa butter equivalents. Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.10. SR ISO 8128-2:2007 Apple juice, apple juice concentrates, and beverages containing apple juice. Determination of patulin content. Method by thin layer chromatography. Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.11. Application of SR 13531:2008 Food products. Determination of the peroxide value. Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.12. SR EN 1230-2:2010 - Paper and board intended to encounter food products. Sensory analysis. Released aroma (contamination). Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.13. SR EN 12041:2015 Machines for the food industry. Machines for dough forming. Safety and hygiene requirements. Student obligation: reading the report, preparing a report.	Experiment; Explanation; Conversation; Description; Problem framing	2 hours
8.2.14. Seminar final test.	Testing	2 hours
Bibliography: 1. “Analiză instrumentală – lucrări practice” , T. Frențiu, A. Mot, E. Covaci, Editura Presa Universitară, 2019. 2. Horia Dumitrescu, Constantin Milu, Cătălin Dumitrescu, Ariadna Bordeianu, Controlul fizico-chimic al alimentelor , Ed. Medicala, Bucuresti, 1997 3. Food Analysis (5th Edition), S. Suzanne Nielsen, Springer, 2017 Laboratory reports. Instrument technical manual.		

9. Evaluation





































Type of activity	9.1 Evaluation criteria ⁴	9.2 Evaluation methods ⁵	9.3 Percentage in the final grade
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⁴ The evaluation criteria must directly reflect the learning outcomes targeted at the level of the degree programme respectively at the level of the subject. More specifically, the learning outcomes set out in the expected learning outcomes are assessed.

⁵ Both final evaluation methods and ongoing evaluation strategies should be established.

9.4. Course	Accuracy and rigor in applying analytical methods and interpreting results in relation to food quality standards and legislation.	Progress checks during semester	80%
	Ability to design and justify food safety and quality control procedures (e.g., HACCP, traceability), supported by clear, well-structured technical documentation		
9.5. Seminar/ laboratory	Ability to analyze and interpret food standards and legislation, including correct application to case studies (e.g., labeling, conformity, traceability).	Final seminar test in last week.	20%
	Quality of written and oral assignments, including clarity, logical structure, and use of appropriate scientific and regulatory terminology.		
9.6 Minimum standard for passing			
<ul style="list-style-type: none">• A grade of 5 (five) on both the exam according to the grading rubric and the final average.• Knowledge of the specific aspects related to the legislation concerning food control; the ability to evaluate the performance characteristics of a standardized method for food control and to correctly choose the appropriate control method.			

10. SDG labels (Sustainable Development Goals)⁶

		Sustainable Development Generic Label						
								
								X
								No label applies
								

⁶ Select a single label which, according to the [Implementation of SDG labels in the academic process](#), best matches the subject. If the subject addresses sustainable development in a generic manner (i.e. by presenting/introducing the general framework of sustainable development, etc.), then the Sustainable Development generic label may be applied. If none of the labels describe the subject, select the last option: "No label applies."

Date:
21.04.2026

Signature of course coordinator
Assoc. Prof. Habil. Dr. Augustin C. Moț

Signature of seminar coordinator
Assoc. Prof. Habil. Dr. Augustin C. Moț

Date of approval:
24.04.2026

Signature of the head of department
Prof. Habil. Dr. Monica Toșa