UNIVERSITATEA DE ŞTIINŢE AGRICOLE ŞI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
Calea Mănăştur 3-5, 400372, Cluj-Napoca
Tel: 0264-596.384, Fax: 0264-593.792
www.usamvcluj.ro

No._____of _____ **USAMV–CN Form 0706010103**

SUBJECT OUTLINE

1. Information on the programme

1.1. Higher education institution	University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca
1.2. Faculty	Food Science and Technology
1.3. Department	Food engineering
1.4. Field of study	Food engineering
1.5.Education level	Master
1.6.Specialization/ Study programme	Food Safety and Consumer Protection
1.7. Form of education	Full time

2. Information on the discipline

2.1. Name of the discipline	**Hygiene and traceability in the agri-food chain**							
2.2. Course coordinator	**Assoc. Prof. PhD. Dorin Ţibulcă** **Assoc. Prof. PhD. Claudiu-Dan Sălăgean**							
2.3. Seminar/ laboratory/ project coordinator	**Assoc. Prof. PhD. Dorin Ţibulcă** **Assoc. Prof. PhD. Claudiu-Dan Sălăgean**							
2.4. Year of study	I	2.5. Semester	I	2.6. Type of evaluation	Continuous	2.7. Discipline status	Content[2]	DS
							Compulsoriness[3]	DI

3. **Total estimated time** (teaching hours per semester)

3.1. Number of hours per week – frequency form	4	of which: 3.2. course	2	3.3. seminar / laboratory / project	2
3.4. Total hours in the curricula	56	of which: 3.5. course	28	3.6. seminar / laboratory	28
Distribution of time					hours
3.4.1. Study based on handbook, notes, bibliography					24
3.4.2. Extra documentation in the library, on specific electronic platforms and on field					25
3.4.3. Preparation of the laboratories					20
3.4.4. Tutorial					5
3.4.5. Examination					20
3.4.6. Other activities					0
3.7. Total hours of individual study	94				
3.8. Total hours per semester	150				
3.9. Number of ECTS[4]	6				

4. Prerequisites (if applicable)

4.1. curriculum-related	Unit operations in food industry; Equipments used in food industry, Chemistry & Biochemistry of food, Food microbiology, Methods of food preservation; General notions regarding food quality and food quality and safety management systems, Agri-food hygiene Bachelor's degree
4.2. skills-related	The student should have knowledge of food biochemistry, operations and equipments used in the food industry, food microbiology, food additives, principles and methods of food preservation, food technologies, food hygiene; The student must identify, describe and use appropriately the specific notions of food quality, food quality and safety management, management systems, requirements

5. Conditions (if applicable)

5.1. for the lecture	Developing the theme proposed in syllabus and interactive discussions on materials and bibliography notice, coupled with materials presented on projector In the case of the didactic activity carried out online, the teaching methods will be adapted
5.2. for the seminar/ laboratory/ project	Students prepare essays on themes established in the seminars In the case of the didactic activity carried out online, the teaching methods will be adapted

6. Specific acquired competences

Professional competences	C1.1 Description of food quality and safety management systems, national and international legislation on food quality and safety C1.2 Design of food quality and safety management systems in different organizations C1.3 Use of specific methodology for the assessment and control of hazards associated with agri-food production C1.4 Use of food quality and safety management knowledge to implement the traceability system in the food industry and GMP, GLP, HACCP programs C1.5 Carrying out specialized expertise in the field of food quality and safety
Transversal competences	CT1 Realization of complex, interdisciplinary, individual projects CT2 Realization of complex, interdisciplinary projects, with the coordination of a team

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

7.1. Overall course objective	Acquire knowledge of food production technologies, quality control and traceability To know and use appropriately the notions necessary for carrying out an activity of design and implementation of traceability systems; To explain and interpret ideas, projects, processes, as well as the theoretical and practical contents of the discipline; Know the practices of good manufacturing and sanitation as a system for ensuring the quality and safety of food
7.2. Specific objectives	To understand and know the language specific to the discipline Learning the conceptual framework of traceability and its importance in systems food quality and safety; To know the principles and systems of food traceability Characterization of the descriptors and sub-descriptors of a traceability system Description of the methods of tracing the batches of products and their connection with batches of raw materials; Elaboration of traceability procedures; Elaboration of documents / records Correlation with other disciplines specific to the specialization. To know the importance of hygiene in food industry units To know the sanitation and disinfection methods used in the food industry To know the methods of controlling the state of properational and operational hygiene To know the origin of food contamination with pathogenic bacteria Know the working procedures for sanitation

8. Content

8.1. LECTURE **Number of hours – 28**	**Methods of teaching**	**Observations** **1 lecture = 2 hours**
The importance of traceability in management systems of food quality and safety General aspects. Definitions. Traceability objectives	Developing the theme and interactive discussions; projector	1 lecture (2 hours)
Legislative requirements on food traceability.	Developing the theme and interactive discussions; projector	1 lecture (2 hours)
The general structure of a traceability system Descriptors and sub-descriptors of traceability systems General characteristics of a traceability system	Developing the theme and interactive discussions; projector	1 lecture (2 hours)
Types of traceability systems External systems Biometric identification systems	Developing the theme and interactive discussions; projector	1 lecture (2 hours)
Management of the implementation of a traceability system. Implementation methodology The advantages of integrating traceability systems into general management systems	Developing the theme and interactive discussions; projector	1 lecture (2 hours)
Particular aspects of traceability in the green sector Definitions and fundamental aspects Opportunities and constraints of the implementation of traceability systems in the ecological sector Analysis of traceability costs and benefits Conclusions	Developing the theme and interactive discussions; projector	2 lecture (4 hours)
GMP system requirements for a food processing unit	Developing the theme and interactive discussions; projector	1 lecture (2 hours)
Standard working procedures for sanitation	Developing the theme and interactive discussions; projector	1 lecture (2 hours)
Hygiene in the units of production, processing, sale and consumption of food of animal origin	Developing the theme and interactive discussions; projector	4 lecture (8 hours)
Hygienic norms and measures for surveillance and control of food quality and technological links in the food chain	Developing the theme and interactive discussions; projector	1 lecture (2 hours)

8.2. Seminar **Number of hours – 28**		
Case study on the description of the methods of tracing the batches of products and their connection with the batches of raw materials (meat - meat products, milk - dairy products, cereals - cereal products, sugar beet - sugar products, oil plants - vegetable oil, etc.)	Simulation of situations, methods of group work, individual and frontal, methods of developing critical thinking, interactive and heuristic discussions	2 seminars (4 hours)
Case study on the elaboration of documents / records and highlighting the importance of storage systems within food safety management systems (SMSA).	Simulation of situations, methods of group work, individual and frontal, methods of developing critical thinking, interactive and heuristic discussions	1 seminars (2 hours)
Case study on the development of traceability procedures, document control procedures and records control, establishing responsibilities.	Simulation of situations, methods of group work, individual and frontal,	1 seminar (2 hours)

	methods of developing critical thinking, interactive and heuristic discussions	
Standard working procedures for sanitation - standard pre-operational and operational working procedures	Simulation of situations, interactive and heuristic discussions	1 seminar (2 hours)
Hygiene in the units of production, processing, sale and consumption of food of animal origin	Simulation of situations, interactive and heuristic discussions	3 seminars (6 hours)
Hygienic norms and measures for surveillance and control of food quality and technological links in the food chain	Simulation of situations, interactive and heuristic discussions	1 seminar (2 hours)
Verification of knowledge. Carrying out and presenting a case study based on the pre-established topic.	Reports, PPT presentation, video, interactive discussions, heuristic discussion	5 seminars (10 hours)

Compulsory bibliography:

1. Stănciuc, N, Râpeanu, G., Stanciu, S., 2011, Trasabilitate. Editura Academica, Galati.
2. Trasabilitatea Produselor Alimentare, 2016, Violeta Nour, editura Universitaria, Craiova
3. SR EN ISO 22005-2007: Trasabilitatea în lanţul alimentar. Principii generale şi cerinţe fundamentale pentru proiectarea şi implementarea sistemului
4. Regulamentul (CE) nr. 178/2002 al Parlamentului European şi al Consiliului din 28 ianuarie 2002 de stabilire a principiilor şi a cerinţelor generale ale legislaţiei alimentare, de instituire a Autorităţii Europene pentru Siguranţa Alimentară şi de stabilire a procedurilor în domeniul siguranţei produselor alimentare
5. Regulamentul 1830/2004 privind trasabilitatea si etichetarea produselor alimentare
6. Sorin Apostu, 2009, Managementul calităţii totale, Ed. Risoprint, Cluj-Napoca
7. Stănescu, V., Apostu, S., 2010, Igiena, inspecţia şi siguranţa alimentelorde origine animal, vol. 1, 2, 3, Ed. Risoprint, Cluj-Napoca
8. Stănescu, V., 1998, Igiena si controlul alimentelor, Ed. Fundaţiei ,,România de mâine", Bucuresti

Optional bibliography:

1. G. M. Costin ş.a., 2008, Alimente ecologice, editura Academica
2. Principiile Codex Alimentarius
3. Mircea Bulancea, Gabriela Râpeanu, 2009, Autentificarea şi identificarea falsificarilor produselor alimentare, Ed. Didactică şi Pedagogică Bucureşti
4. P.A. Luning, W.J Marcelis, W.M. F. Jongen, 2008, Managementul calităţii alimentelor, Casa cărţii de ştiinţă
5. *** ISO 22000:2005
6. *** Legea 150: 2004 privind siguranta alimentara
7. *** Seria standarde ISO 9000
8. *** Legea nr. 245 din 09/06/2004 - privind securitatea generala a produselor;
9. *** Regulamentul CE nr. 853/2004 al Parlamentului European şi al Consiliului de stabilire a unor norme specifice de igienă care se aplică alimentelor de origine animală
10. *** Regulamentul CE nr. 2073/2005 al Comisiei privind criteriile microbiologice pentru produsele alimentare
11. *** Ordin nr. 1.956/1995 privind introducerea şi aplicarea sistemului HACCP (Hazard Analysis Critical Control Point) în activitatea de supraveghere a condiţiilor de igienă din sectorul alimentar;
12. *** Ordin nr. 611/1995 pentru aprobarea Normelor de igienă privind alimentele şi protecţia sanitară a acestora;
13. *** Ordin al ministrului sănătăţii nr. 975/1998 privind aprobarea Normelor igienico-sanitare pentru alimente;
14. *** Ordin al ministrului sănătăţii nr. 976/1998 pentru aprobarea Normelor de igienă privind producţia, prelucrarea, depozitarea, păstrarea, transportul şi desfacerea alimentelor;
15. *** Hotărârea Guvernului nr. 1198/2002 pentru aprobarea Normelor de igienă a produselor alimentare
16. SR ISO 9001-2008, Sisteme de management al calităţii. Cerinţe.
17. SR EN ISO 9000-2006 Sisteme de management a calităţii. Principii fundamentale şi vocabular

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

In order to identify ways of modernization and continuous improvement of teaching and course content with the current issues and practical problems teachers participate in various workshops (with guests from the economic environment), trade exhibition for agriculture and food industry (eg . Agraria) food festivals (eg "Food Festival" - exhibition of products made by students in their final years in order to support project graduation) and meetings of professional associations (eg, Association of Food Industry specialists Romania - ASIAR) where they meet teachers from different universities, engineers and managers in the economic environment being debated current issues and future of food production in Romania and Europe. The content of the discipline is in accordance with the requests of specific national professional associations.

10. Assessment

Type of activity	10.1. Assessment criteria	10.2. Assessment methods	10.3. Percentage of the final grade
10.1. Lecture	Master students' knowledge of general and particular aspects regarding food traceability in the agri-food chain. Knowledge of the general characteristics of traceability systems. Acquiring the conceptual framework of traceability and importance in food quality and safety systems; Traceability systems in the food industry Assimilation by master students of the rules of hygiene and control of food products throughout the agri-food chain	Continuous assessment (written, grid test with multiple choice)	50%
10.2. Seminar/laboratory	Knowledge by each master student of the route and the mandatory records for identifying the route of food products in the agri-food chain. Participation and Involvement.	Essay/Report support	50%
10.3. Minimum performance standards			
Elaboration of a project specific to food quality and safety; Mastering scientific information transmitted by lectures and seminars at acceptable levels; The final mark represents the weighted average of the continuous assessments and the report and must be equal to or higher than 5 (five); it is a condition of passability; Seminar attendance (minimum 80%).			

[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 de hours of study (didactical and individual study).

Filled in on
09.09.2021

Course coordinator
Assoc. Prof. PhD. Dorin Ţibulcă

Assoc. Prof. PhD. Claudiu-Dan Sălăgean

Laboratory work/seminar coordinator
Assoc. Prof. PhD. Dorin Ţibulcă

Assoc. Prof. PhD. Claudiu-Dan Sălăgean

Subject coordinator
Assoc. Prof. PhD. Dorin Ţibulcă

Head of the Department
Prof. dr.. Sevastiţa Muste

Approved by the Department on 22.09.2021

Dean
Prof. dr. Elena Mudura

Approved by the Faculty Council on 28.09.2021