



UNIVERSITATEA DE ȘTIINȚE AGRICOLE ȘI MEDICINĂ VETERINARĂ CLUJ-NAPOCA

Calea Mănăstur 3-5, 400372, Cluj-Napoca

Tel: 0264-596.384, Fax: 0264-593.792

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No. _____ of _____

USAMV form 0704020208

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	Faculty of Food Science and Technology
1.3. Department	Food Science
1.4. Field of study	Food Science
1.5. Education level	Master
1.6. Specialization/ Study programme	Food Quality Management
1.7. Form of education	Full time

2. Information on the discipline

2.1. Name of the discipline	Food Fraud and Mitigation							
2.2. Course coordinator	Assoc. Prof. Cristina Coman							
2.3. Seminar/ laboratory/ project coordinator								
2.4. Year of study	II	2.5. Semester	I	2.6. Type of evaluation	continuous	2.7. Discipline status	Content ²	FD
							Compulsoriness ³	CD

3. Total estimated time (teaching hours per semester)

3.1. Hours per week – full time programme	3	out of which: 3.2. lecture	1	3.3. seminar/ laboratory/ project	2
3.4. Total number of hours in the curriculum	42	Out of which: 3.5. lecture	14	3.6. seminar/laboratory	28
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					15
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					15
3.4.4. Tutorials					4
3.4.5. Examinations					4
3.4.6. Other activities					
3.7. Total hours of individual study	48				
3.8. Total hours per semester	90				
3.9. Number of credits ⁴	3				

4. Prerequisites (is applicable)

4.1. curriculum-related	Food chemistry, Analytical Chemistry, Food Safety, FQM-Techno-managerial Principles
4.2. skills-related	Bachelor diploma or equivalent Certificate of language competence (english)



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5. Conditions (if applicable)

5.1. for the lecture	Projector, ppt presentation The course is interactive, students can ask questions regarding the content of lecture. Academic discipline requires compliance with the start and end of the course. We do not allow any other activities during the lecture, mobile phones will be turned off.
5.2. for the seminar/ laboratory/ project	During practical works, each student will develop an individual activity with laboratory materials (made available in the book that describes the laboratory work). Academic discipline is imposed throughout the course of practical works.

6. Specific competences acquired

P r o f e s s i o n a l c o m p e t e n c e s	<p>C3.1. To learn and deepen of the chemical, biochemical and microbiological composition of foods in correlation with hygiene</p> <p>C3.2. To use the knowledge regarding methods: experimental, expertise, sociological, statistical to assess the level of quality and safety of agri-food products</p> <p>C3.3. To use of modern food quality methods for food safety and quality assessment</p> <p>C3.4. To use of the most modern techniques, standards and evaluation and analysis criteria for food quality and safety, authenticity and traceability</p> <p>C3.5. To develop, implement and validate new control methods for food quality and safety</p>
T r a n s v e r s a l c o m p e t e	<p>CT1. Applying strategies of perseverance, rigor, efficiency and responsibility in 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 of professional ethics in the field food.</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 needs and utilities of extrinsic and intrinsic motivated continuing education .</p>



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

7.1. Overall course objective	This course initiates and define the concepts of food fraud and mitigation, quality assurance.
7.2. Specific objectives	<ul style="list-style-type: none"> • Advanced knowledge of the concepts of food fraud and mitigation • Acquiring knowledge on aspects related to legislation and documentation in food fraud • Acquiring knowledge on food vulnerability assessment strategies • Acquiring knowledge on specific analytical tools that can be used in food fraud

8. Content

8.1. LECTURE Number of hours – 14	Teaching methods	Notes
1. Definition and prevalence of food fraud. Legislation in food fraud		1 lecture
2. Food fraud in different steps of the food production and supply chain	Lecture, heuristic conversation, debate,	1 lecture
3. Food fraud prevention. an overview	algorithmic, case study,	1 lecture
4. Factors contributing to the fraud vulnerability of companies and chains, including criminological aspects	directed observation	1 lecture
5. Food fraud vulnerability assessment strategies		1 lecture
6. Hard controls to reduce the vulnerability to fraud		2 lectures
8.2. PRACTICAL WORK Number of hours – 28	Theoretical presentation of practical works	1 lab work (2 hours / work)
1. Food fraud legislation and economic aspects; comparative analysis, case studies	Seminar Debate, case studies in small groups, discussions, heuristic conversation, argumentation	1 seminar
2. Types of food fraud: case studies	Seminar Debate, case studies in small groups, discussions, heuristic conversation, argumentation	2 seminars
3. Food fraud incidents of public health concern: case studies	Seminar Debate, case studies in small groups, discussions, heuristic conversation, argumentation	1 seminar
4. Factors contributing to the fraud vulnerability (e.g. <i>Susceptibility of QA methods, supply chain, economic anomalies, audit strategy, etc</i>)– case studies	Seminar Debate, case studies in small groups, discussions, heuristic conversation, argumentation	2 seminars



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<p>5. Rapid analysis, spectroscopy, chromatography, targeted vs non-targeted analysis</p>	<p>www.usamvcluj.ro Practical demonstrations Team work Explanation Debate</p>	
<p>6. Knowledge verification</p>	<p>Seminar</p>	<p>1 seminar</p>
<p><i>Compulsory bibliography:</i></p> <ol style="list-style-type: none"> 1. Everstine K., Spink J., Kennedy S., 2013. Economically motivated adulteration (EMA) of food: Common characteristics of EMA incidents. <i>Journal of Food Protection</i>. 4, 560-735. 2. Ryan J.M., 2015. Food fraud. Academic Press, London. 3. Ruth S.M., Huisman W., Luning P.A., 2017. Food fraud vulnerability and its key factors. <i>Trends in Food Science & Technology</i>. 67, 70-75. 4. Da-Wen Sun, Modern techniques for food authentication, Academic Press, London, UK, 2008. 5. McGrath T.F., Haugheya S.A., Patterson, Fauhl-Hassek C., Donarskic J., Alewijnnd M., Ruth S., Elliott C.T., 2018. What are the scientific challenges in moving from targeted to non-targeted methods for food fraud testing and how can they be addressed? – Spectroscopy case study. <i>Trends in Food Science & Technology</i>. 76, 38-55. <p><i>Optional bibliography:</i></p> <ol style="list-style-type: none"> 1. Spink J., Fortin N.D., Moyer D.C., Miao H., Wu Y., 2016. Food fraud prevention: Policy, strategy, and decision-making e implementation steps for a government agency or industry. <i>CHIMIA International Journal for Chemistry</i>. 70:(5), 320-339. 2. Xie K., Holroyd S., Laurvick K., Gendel S., 2019. Tackling Food Fraud. <i>Cheeking What is Not There Non-targeted methods are the first step in detecting adulteration; one that could then be followed by targeted methods for confirmation of food fraud. The World of Food Ingredients</i>, 55-56. 3. Hong E., Lee S.Y., Jeong J.Y., Park J.M., Kim B.H., Kwone K., Chuna H.S., 2017. Modern analytical methods for the detection of food fraud and adulteration by food category. <i>Journal of the Science of Food and Agriculture</i>, 97:(12), 3877-3896. 4. P.A. Luning, W.J. Marcelis, W.M.F. Jongen, Food Quality management, a technomanagerial approach, Wageningen Pres, 2002 5. Ludwig Theuvsen, Achim Spiller, Martina Peupert and Gabriele Jahn, Quality management in food chains Wageningen Academic Publishers Books, 2007 		

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 course curriculum meets the requirements for a qualified preparation, harmonized with the same master program at Wageningen University (course FQD-36306 Food Fraud and Mitigation) and topical content (compliance with legal regulations, compliance with the latest standards in the field)

10. Assessment

Type of activity	10.1. Assessment criteria	10.2. Assessment methods	10.3. Percentage of the final grade
10.4. Lecture	Capacity of students to describe notions related to food fraud and mitigation Logic, correct and coherent application of the concept learned	Continuously	50%
10.5. Seminar/Laboratory	Students will discuss the case studies and create a portfolio on a selected food fraud issue	Colloquim	50%
<p>10.6. Minimum performance standards Course: Minimal standards: mark 5 Seminars: Minimal standard: mark 5</p>			



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¹ Education levels- choose of the three options: Bachelor/* Master/Ph.D.

² Discipline status (content)- for the undergraduate level, choose one of the options:- **FD** (fundamental discipline), **BD** (basic discipline), **CS** (specific disciplines-clinical sciences), **AP** (specific disciplines-animal production), **FH** (specific disciplines-food hygiene), **UO** (disciplines based on the university's options).

^{3/} Discipline status (compulsoriness)- choose one of the options – **CD** (compulsory discipline) **OD** (optional discipline) **ED** (elective discipline).

⁴ One credit is equivalent to 25-30 hours of study (teaching activities and individual study).

^{5/*} Disciplines: AK- Advanced knowledge, CT- Complementary Training, S- Synthesis

Filled in on
09.09.2021

Course coordinator
Assoc. Prof. Cristina Coman

Laboratory work/seminar coordinator
Assoc. Prof. Cristina Coman

Subject coordinator
Assoc. Prof. Cristina Coman

Approved by the
Department on 22.09.2021

Head of the Department
Prof. Ramona Suharoschi

Approved by the Faculty
Council on 28.09.2021

Dean
Prof. Elena Mudura