



Nr. _____ of _____

USAMV– Form

0706010107

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. Cycle of study ¹	Master
1.6. Specialization/ Study programme	Food Safety and Consumer Protection
1.7. Form of education	Regular studies

2. Information on the discipline

2.1. Name of the course	THE ROLE OF PACKAGING AND LABELLING IN FOOD INDUSTRY							
2.2. Course coordinator	Associate professor PhD Mirela Jimborean							
2.3. Seminar/ laboratory/ project coordinator	Associate professor PhD Mirela Jimborean							
2.4. Year of study	I	2.5. Semester	II	2.6. Type of evaluation	exam	2.7. Discipline status	Content ²	BD
							Compulsoriness ³	CD

3. Total estimated time (teaching hours per semester)

3.1. Hours per week – full time programme	4	Out of which: 3.2. lecture	2	3.3. seminar/ laboratory/ project	2
3.4. Total number of hours in the curriculum	56	Out of which: 3.5. lecture	28	3.6. seminar/laboratory	28
Distribution of the time allotted					Hours
3.4.1. Study based on book, textbook, bibliography and notes					28
3.4.2. Additional documentation in the library, specialized electronic platforms and field					31
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					28
3.4.4. Tutorials					20
3.4.5. Examinations					8
3.4.6. Other activities					4
3.7. Total hours of individual study	119				
3.8. Total hours per semester	175				
3.9. Number of credits	7				

4. Prerequisites (is applicable)

4.1. curriculum-related	Food processing machinery, Food Chemistry and Biochemistry, Food Microbiology, Food Preservation Methods, Food Packaging, Labelling and Design, Bachelor's degree
4.2. skills-related	Understanding the basics of how food products are obtained and preserved in the context of interaction with the packaging.

5. Conditions (if applicable)

5.1. for the lecture	Development of the topic proposed in the analytical program and interactive discussions based on previously announced materials and bibliography, doubled by materials presented on the video projector
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5.2. for the seminar/ laboratory/ project	Students prepare papers/projects based on the topics established in the laboratory/project program
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6. Specific competences acquired

Professional competences	1.1. Description of food quality and safety management systems, national and international legislation on food quality and safety 1.3. Using the specific methodology for assessing and controlling the hazards associated with agri-food production
Transversal competences	CT1. Realization of complex, interdisciplinary, individual projects

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

7.1. Overall course objective	To acquire the knowledge related to the packaging and labelling of food products To acquire the knowledge regarding the identification, evaluation and monitoring of some contaminants on the food chain, case studies regarding the incidence of some contaminants in Romania and EU states.
7.2. Specific objectives	To know the criteria underlying the choice of food contact materials as well as national/RU rules and regulations on general requirements for food contact materials To know about biodegradable packaging and national and european regulations on packaging recycling in EU To know national and international/EU food labelling regulations To know the methods of food packaging (general and specific, by groups/ types of food) To know the sources of food contamination To adopt the legislation on food contaminants at national and european level.

8. Content

8.1. LECTURE Number of hours –	Teaching methods	Notes
1. Materials that come in contact with food. Introduction. Criteria for establishing restrictions on the migration of toxic compounds from food contact materials. The role of physico-chemical characteristics of food migration of contaminants from packaging to food.	Topic development and interactive discussions; Lecture; Explication; Heuristic conversation; PPT presentations	4 hours
2. National and EU rules and regulations on general requirements for all food contact materials. Regulations and norms regarding compounds (monomers and additives) authorized for use in plastics.		2 hours
3. Biodegradable packaging (obtained from renewable materials). National and european regulations regarding recycling of the packaging.		2 hours
4. Washing, sanitizing and sterilizing food packaging The objectives of washing the packaging Factors influencing the washing of packaging		4 hours



Sterilization of packaging. Sterilizing agents Packaging washing machines		
5. Preservation techniques by intelligent packaging. 6. Preservation techniques by active packaging. 7. Conditioning and preservation techniques by packaging in modified atmosphere.		4 hours
8. Factors that influence the shelf life of food: factors that depend on the product, factors that depend on the properties of the packaging.		2 hours
Evaluation of chemical contaminants on the food chain of food production 9. Environmental contaminants and their incidence in food 10. Incidence of process contaminants formed during food processing by cooking food at high temperatures. 11. Metals and inorganic substances and their incidence in food: contamination with Lead (Pb), Mercury (Hg), Nitrates, Fluorides.	Case studies; reports; PPT presentation; videos; interactive discussions	2 hours 2 hours 4 hours
12. Food labelling. Legal framework for food labelling. Food labelling in the context of food safety.	Lecture, heuristic conversation, explanation	4 hours
8.2. PRACTICAL WORK Number of hours –		28 hours
Place of packaging and wrapping in the production and marketing of food 1. Packaging of milk and dairy products. 2. Packaging of meat and meat products. 3. Packaging of fish and fish products. 4. Packaging vegetables and fruits. Packaging of cereals and flour. 5. Packaging bread and biscuits. Packaging of pasta. 6. Packaging of animal fats and vegetable oils. 7. Sugar packaging. Packaging of sugar products. 8. Packaging of honey. 9. Packaging/ bottling of alcoholic and non-alcoholic beverages (fruit and vegetable juices). 10. Packaging of liquid and pasty foods. 11. Packaging machines, lines and methods: watching video, analyzing packaging machine leaflets Case studies: packaging and labeling of products obtained in pilot stations	Explanation Debate Case Study	10 hours
Monitoring and evaluation of the types of packaging specific to different categories of food products in the context of food safety.		4 hours
Steps in choosing and designing a package for a food product.		10 hours



Traceability of contaminants on the food packaging chain. Packaging- product interaction. Ways to evaluate the migration of contaminants from food packaging.	Explanation Debate Case Study Group and frontal work methods Methods of developing of critical thinking	
Food labelling. Marketing study on consumer behavior in relation to food packaging and labelling on food packaging.		
Presentation and delivery of a food packaging project.	Presentation, discussion	4 hours
Compulsory bibliography: 1. Banu, I. și col. 2007, <i>Tratat de inginerie alimentară</i>, Ed. AGIR, București; 2. Mirela Jimborean, 2016, <i>Ambalaje și materiale de ambalare în industria alimentară</i>, Ed. Risoprint, Cluj-Napoca 3. Mirela Jimborean, 2019, <i>Ambalarea, etichetarea și designul în industria alimentară</i>, Ed. Mega, Cluj-Napoca; 4. A. Mupoa, F. Boscainoa, G. Cavazzinib, A. Giarettab, V.Longoc, P. Russoa, A. Siania, R. Sicilianoa, I. Tedescoa, E. Tostid, G.L. Russo, 2010, <i>Monitoring Contaminants in Food Chain and their Impact on Human Health</i>, CNR <i>Environment and Health Inter-departmental Project</i> 5. Francis P. Scanlan, 2007, <i>Potential Contaminants in the Food Chain</i>; Agostoni C, Brunser O (eds): <i>Issues in Complementary Feeding</i>, Nestlé Nutr Workshop Ser Pediatr Program, vol 60, pp 65–78, Nestec Ltd., Vevey/S. Karger AG, Basel, © 2007; 6. Stanciuc, N., G. Rapeanu, 2009, <i>Managementul Sigurantei alimentelor</i>, Ed. Academica, Galați; 7. Tofana Maria, 2011, <i>Contaminanți alimentari – Performanțe analitice și reglementări legislative</i>, Ed. Mega, Cluj-Napoca; 8. Turtoi Maria, 2000. <i>Materiale de ambalaj și ambalaje pentru produsele alimentare</i>, Editura ALMA- Galați 9. Regulamentul (UE) nr. 1169/ 2011 – privind informarea consumatorilor cu privire la produsele alimentare; 10. Corrigendum to Regulation (EC) No 853/2004 of the European Parliament and of the Council of 29 April 2004 laying down specific hygiene rules for food of animal origin (OJ L 139, 30.4.2004) 32004R0853R(01) Official Journal L 226, 25/06/2004 P. 0022 – 0082 Optional bibliography: 1. Banu C. și colab., 1998. <i>Manualul inginerului din industria alimentară</i>, vol. I, Editura Tehnică, București 2. Bureau, G. și Multon, J.L., 1989. <i>L'emballage des denrées alimentaires de grande consommation</i>, Technique & Documentation, Lavoisier, Paris, France 3. Hugel, R. et Pajean, G., 1989. <i>Le verre d'emballage</i>, cap. 13 en Bureau, G. et Multon, J.L., <i>L'emballage des denrées alimentaires de grande consommation</i>, Technique & Documentation, Lavoisier, Paris, France 4. Moraru Carmen și Moraru C., 1994. <i>Utilizarea codului de bare EAN imperativ în contextul integrării economice și comerciale a României în Europa</i>, BIMP, Galați, vol 5, nr. 1, p. 20-28 5. Nuță M. și Nuță D., 1983. <i>Ambalaje din materiale plastice</i>, Editura Tehnică, București 6. Paine, F. A. et Paine ". Y., 1983. <i>A Handbook of Food Packaging</i>, Blackie & Son Ltd., Glasgow, UK 7. Parry R. T., 1993. <i>Principles and Applications of Modified Atmosphere Packaging of Food</i>, Blackie Academic & Professional, Glasgow, UK 8. Robertson G.L., 1993. <i>Food Packaging Principles and Practice</i>, Marcel Dekker Inc., New York 9. Reglementari UE privitoare la inscripționarea, despacheterea și reclama produselor alimentare (97-4_EWG a Parlamentului și Consiliului European- 27/1/97). 10. *** EFSA (2004). "Opinion of the Scientific Panel on Contaminants in the Food Chain related to Aflatoxin B1 as undesirable substance in animal feed." The EFSA Journal 39: 1-27. 11. *** EFSA (2004). "Opinion of the Scientific Panel on Contaminants in Food Chain on a request from the Commission related to ochratoxin A (OTA) as undesirable substance in animal feed." The EFSA Journal 101: 1-36. 12. Community Strategy for Dioxins, Furans and Polychlorinated Biphenyls. 13. *** Quality and Accreditation Standards and Guides in Analytical Laboratories: Overview. 2004. 14. *** Europeennes, C. (2003). "Directive 2003/78/CE de la Commission du 11 aout 2003 portant fixation de prelevement d'echantillons et des methodes d'analyse pour le controle officiel des teneurs en patuline des denrees alimentaires." Journal officiel des Communautes europeennes: L 203/40 - L 203/44		



9. Corroborating the course content with the expectations of the epistemic community representatives, of the professional associations and of the relevant employers in the corresponding field

Course content is consistent with the applications of the national professional associations specific

10. Assessment

Type of activity	10.1. Assessment criteria	10.2. Assessment methods	10.3. Percentage of the final grade
10.1. Course	Knowledge of national and international /EU regulations on food packaging and labelling Knowledge of the main classes of chemical contaminants and how to evaluate and monitor	Verification along the way	30%
10.2. Seminar/Laboratory	Knowledge of modern stages and techniques of packaging by groups/ types of food Knowledge of the product- packaging relationship, food labelling	Project presentation	70%
10.6. Minimum performance standards			
Master the scientific information transmitted through lectures and seminars at an acceptable level. Realization of an individual project.			

¹ Cycle of studies- 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).

Course coordinator
Associate professor PhD. Mirela Jimborean

Laboratory work/seminar coordinator
Associate professor PhD. Mirela Jimborean

Subject coordinator
Associate professor PhD. Mirela Jimborean

Head of the Department
Professor PhD. Sevastița Muste

Approved by the
department on
22.09.2021

Approved by the
Faculty Council on
28.09.2021

Dean
Professor PhD. Elena Mudura



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