



No. \_\_\_\_\_ of \_\_\_\_\_

USAMV form–CN-0702010112

## 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	Food Science and Technology
1.3. Department	Food Engineering
1.4. Field of study	Food Engineering
1.5. Education level <sup>1)</sup>	Bachelor
1.6. Specialization/ Study programme	Food Control and Expertise
1.7. Form of education	Full time

### 2. Information on the discipline

2.1. Name of the discipline	Principles and methods of food preservation 1							
2.2. Course coordinator	Assoc. Prof. Dr. habil. Cristina Anamaria Semeniuc							
2.3. Seminar/ laboratory/ project coordinator	Eng. Dr. Maria-Ioana Socaciu							
2.4. Year of study	I	2.5. Semester	II	2.6. Type of evaluation	Summative	2.7. Discipline status	Content <sup>2</sup>	BD
							Compulsoriness <sup>3</sup>	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	1
3.4. Total number of hours in the curriculum	42	out of which: 3.5. lecture	28	3.6. seminar/ laboratory/ project	14
Distribution of the time allotted					ore
3.4.1. Study based on book, textbook, bibliography, and notes					20
3.4.2. Additional documentation in the library, specialized electronic platforms, and field					20
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios, and essays					10
3.4.4. Tutorials					-
3.4.5. Examinations					8
3.4.6. Other activities					-
3.7. Total hours of individual study	58				
3.8. Total hours per semester	100				
3.9. Number of credits <sup>4</sup>	4				

### 4. Prerequisites (if applicable)

4.1. curriculum-related	Basic notions of food chemistry
4.2. skills-related	The student must have the necessary knowledge for proper handling of chemical reagents, glassware, utensils, and laboratory equipment

### 5. Conditions (if applicable)

5.1. for the lecture	Classroom, equipped with: blackboard, video projector, and computer In the case of carrying out online didactic activities, the teaching methods will be adapted
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5.2. for the <del>seminar</del> / laboratory/ project	Laboratory equipped with laboratory equipment, glassware, utensils, and chemicals In the case of carrying out online didactic activities, the teaching methods will be adapted
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## 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	C3.1. Description and use of concepts, theories, and basic methods regarding food products preservation C1.4. Application of principles and basic methods from food science in view to the preservation of food products
T r a n s v e r s a l c o m p e t e n c e s	CT1. Responsible execution of laboratory tests; analytical and critical thinking in interpreting results

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

7.1. Overall course objective	To provide an overview of basic principles of food preservation as well as the main methods of preservation
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7.2. Specific objectives	<p>Learning fundamental principles of food spoilage and deterioration and their control methods</p> <p>Ability to assess the storage stability of food products</p> <p>Ability to apply food preservation principles in practice</p>
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## 8. Contents

8.1. LECTURE	Teaching methods	Notes
Food spoilage. Principles of food preservation	Participatory lecture, debate, exemplification	2 lectures
Factors influencing microbial activity		2 lectures
Food preservation by heating		2 lectures
Food preservation by freezing		2 lectures
Food preservation by dehydration		2 lectures
Food preservation by irradiation		2 lectures
Food preservation using chemicals and microorganisms		2 lectures

8.2. PRACTICAL WORK	Teaching methods	Notes
The effect of preservation by cold - Assessment of changes in organoleptic characteristics of meat depending on applied heat treatment (refrigeration, freezing) Sensory evaluation of meat	Presentation, explanation, demonstration, case study	1 laboratory work
The effect of preservation by cold - Appreciation of meat freshness depending on species and thermal status by determination of pH and ammonia		1 laboratory work
The effect of heat treatment - Assessment of animal origin fat stability at frying by Kreis reaction and determination of free acidity		1 laboratory work
The effect of preservation by heating - Control of medium- and high-pasteurization of milk (alkaline phosphatase test and peroxidase test)		1 laboratory work
The effect of preservation by dehydration - Assessment of solubility and scorched particle content in milk powder		1 laboratory work
The effect of preservation by acidification - Evaluation of yoghurt sensory characteristics. Appreciation of yoghurt freshness by determination of pH		1 laboratory work
The effect of preservation by salting - Determination of salt content in sausages The effect of preservation using chemicals - Detection of some preservatives in milk		1 laboratory work
<i>Compulsory bibliography:</i> 1. Semeniu C.A. (2015). Principii și metode de conservare a produselor alimentare-Manual Didactic. Ed. AcademicPres, Cluj-Napoca; 2. Guș C. (2003). Conservarea alimentelor. Ed. Risoprint, Cluj-Napoca.		
<i>Optional bibliography:</i> 1. Banu C., Vizireanu C., Lungu C. (1997). Principiile conservării alimentelor. Universitatea “Dunărea de Jos” din Galați.		

## 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 outlining the course content and practical work were considered recommendations of food industry employers.
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## 10. Assessment



Type of activity	10.1. Assessment criteria	10.2. Assessment methods	10.3. Percentage of the final grade
<b>10.4. Lecture</b>	Logical, correct, and coherent application of acquired notions	<b>Exam</b>	75%
<b>10.5. Seminar/ Laboratory</b>	Ability to perform tests in a physicochemical testing laboratory Ability to analyse and interpret test results	<b>Test of verifying knowledge</b>	25%
<b>10.6. Minimum performance standards</b>			
Knowledge of fundamental principles of food spoilage and deterioration and their control methods			
Execution of a laboratory test and elaboration of a test report			

<sup>1</sup> Education levels-choose of the three options-Bachelor/ Master/ Ph.D.

<sup>2</sup> Discipline status (content)-or the undergraduate level, choose one of the options-**FD** (fundamental discipline), **BD** (basic discipline), **SD** (specific discipline-food engineering), **UO** (discipline based on the university's options).

<sup>3</sup> Discipline status (compulsoriness)-choose one of the options-**CD** (compulsory discipline) **OD** (optional discipline) **ED** (elective discipline).

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

**Filled in on**

06.09.2021

**Course coordinator**

Assoc. Prof. Dr. habil. Cristina Anamaria  
Semeniuc

**Laboratory work/ seminars coordinator**

Eng. Dr. Maria-Ioana Socaciu

**Course coordinator**

Assoc. Prof. Dr. habil. Cristina Anamaria Semeniuc

**Approved by the**

**Department on**

22.09.2021

**Head of the Department**

Prof. Dr. Sevastița Muste

**Approved by the Faculty**

**Council on**

28.09.2021

**Dean**

Prof. Dr. habil. Elena Mudura