No_____from _____ **Form code USAMV–CN-0703030218**

COURSE DESCRIPTION

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. Study field	**Food Engineering**
1.5. Level field[1)]	**Bachelor**
1.6. Specialization/ Study Program	**Food Engineering (IPA)**
1.7. Form of education	**Full time**

2. Information on the discipline

2.1. Name of the course	**Pastry technology**							
2.2. Course leader	**Vlad Mureșan, PhD, habil., Associate Professor**							
2.3. Coordinator of seminary/laboratory activity/project	**Georgiana Smaranda Marțiș, PhD, Assistant Professor**							
2.4. Year of study	**III**	2.5. Semester	**V**	2.6. Type of evaluation	Continuous	2.7. Course regime	Content [2]	DS
							Compulsoriness [3]	DO

3. Total estimated time (teaching hours per semester)

3.1. Number of hours/week – frequency form	2	of which : 3.2. course	1	3.3. seminary/ laboratory/ project	1
3.4. Total hours in the curricula	28	of which: 3.5.course	14	3.6.seminary/laboratory	14
Distribution of time					Hours
3.4.1.. Study based on handbook, notes, bibliography					8
3.4.2. Extra documentation in the library, on specific electronic platforms and on field					4
3.4.3. Preparation of seminaries/ laboratories/ projects, themes, papers, portfolies and essays					5
3.4.4.Tutorial					2
3.4.5. Examination					3
3.4.6. Other activities					
3.7. Total hours of individual study	22				
3.8. Total hours per semester	50				
3.9. Number of ECTS[4]	2				

4. Prerequisites (if applicable)

4.1. of curriculum	Chemistry. Biochemistry;
4.2. of competences	The student must have general knowledge of food.

5. Conditions (if applicable)

5.1. of course development	Room with projector and internet connection. The course is interactive; students can ask questions regarding the content of the statement. Academic discipline requires compliance of starting time and end of the course. There are not allowed any other activities during the lecture, mobile phones to be closed.
5.2. of seminary/laboratory/	Academic discipline is imposed throughout the practical works.

project development	Specially designed laboratory (equipped with specific glassware, oven, balance, refractometer, polarimeter), Confectionery Pilot Plant (vertical mixer, blender, fondant making equipment, various moulds of chocolate, jellies moulds, etc). various shapes for chocolate, jelly, shit), electric oven, stainless steel planetary mixer, 3D printer compatible with food.

6. Specific competences acquired

Professional competences	C2.1. Description and use of basic concepts, theories and methods in the field of processes and operation of plants in the agri-food chain. C2.3. Application of basic engineering principles and methods for solving technological problems in the agri-food chain.
Transversal competences	CT1 Apply strategies for perseverance, rigor , efficiency and responsibility in work , punctuality and personal accountability for its performance , creativity, common sense, analytical and critical thinking , problem solving, etc., based on principles, norms and values code of professional ethics from food industry;

7. Subject objectives (as a result of the specific acquired competences)

7.1. Subject general objectives	Is the knowledge of the needed information on technological developments and trends related to confectionery products on equipment's and facilities involved in carrying out these processes.
7.2. Specific objectives	Knowledge of quality parameters of starch and vegetable raw materials used for confectionery products; Knowledge of quality parameters of raw and auxiliary materials used in confectionery; Knowledge of operations and operating principles of the equipment used in confectionery technology; Interpretation of results obtained by analysing the raw materials, intermediate and finished products from confectionery technology industry.

8. Contents

8.1.COURSE **Number of hours – 14**	Methods of teaching	Observations
1. Production flow in confectionery units 1.1. Reception 1.2. Storage 1.3. Preliminary processing spaces 1.4. Manufacturing 1.5. Filling, finishing, decorating 1.6. Buffer storage before delivery	Lecture, explanation, conversation, debate	1 Lectures
2. Technological arrangement of the confectionery-pastry laboratory 2.1. Machinery and equipment 2.2. Specific tools 2.3. Measuring and control devices	Lecture, explanation, conversation, debate	1 Lectures
3. Technology of confectionery products. Semi-finished products used in confectionery 3.1. syrups 3.2. flux 3.3. Baroturile 3.4. Burnt sugar 3.5. Egg and flour semi-finished products. Manufacturing technological specifications 3.6. Fresh fruit semi-finished products. Candied fruits and vegetables. Fruits in alcohol. jellies 3.7. Fruit / oilseed semi-finished products	Lecture, explanation, conversation, debate	2 Lectures

3.8. creams 3.9. Egg semi-finished products 3.10 Auxiliary semi-finished products **4. Technological instructions for obtaining confectionery** 4.1. Technological instructions for making cakes 4.2. Technological instructions for preparing cakes 4.3. Technological instructions in the preparation of cookies 4.4. Technological instructions - candy products	Lecture, explanation, conversation, debate	2 Lecture
5. Display of confectionery products 5.1. Criteria for displaying goods 5.2. Ways of technical realization of the display of confectionery products in shop windows 5.3. Aesthetic mounting of confectionery on the plate	Lecture, explanation, conversation, debate	1 Lecture

8.2. PRACTICAL WORK **Number of hours –14**		
1. Confectionery-pastry laboratory. Machinery and equipment. Specific tools. Measuring and control devices. Obtaining and characterizing egg whites.	Experiment, explanation, working group	1 Practical Work
2. Obtaining decorative figurines and candies filled from the chocolate table. Artisanal processing of chocolate dough and surrogate.	Experiment, explanation, working group	1 Practical Work .
3. Obtaining foam-type semi-finished products from Sweet Cream vs. Surrogate cream (Sweetened product, with vegetable fats). Texture assessment and determination of colloidal stability.	Experiment, explanation, working group	1 Practical Work
4. Obtaining and characterizing egg and flour semi-finished products.	Experiment, explanation, working group	1 Practical Work
5. Obtaining and characterizing fondant table semi-finished products.	Experiment, explanation, working group	1 Practical Work
6. Processing fondant, obtaining candies and figurines from fondant.	Experiment, explanation, working group	1 Practical Work
7. Verification of knowledge	Explanation, working group	1 Practical Work

Compulsory Bibliography:

1. Berechet Gabriela, (2018). Cartea cofetarului patiser. Editura Imprima, Bucureşti.
2. Racolţa Emil, (2008). Tehnologia amidonului şi a produselor zaharoase:, Ed. Risoprint, Cluj-Napoca.

Facultative Bibliography:

1. Racolţa Emil, Marta Hodrea, Teodora Şchiop, "Îndrumător de lucrări practice pentru produse zaharoase", Ed.Risoprint, 2008;
2. Banu C., "Manualul inginerului de industria alimentara", Ed. Tehnica Bucuresti, 2002;

9. Correlations between the subject against the expectations of the epistemic community representatives, of the professional associations and employers' representatives in the domain

Course content is consistent with the demands of specific national professional associations; teachers regularly attend international fairs and undertake field visits on food industry plants (manufacturing of starch, glucose, jellies, candies products, halva, chocolate, expanded cereals)

10. Evaluation

Type of activity	10.1. Evaluation criteria	10.2. Evaluation methods	10.3. Percent of the final grade
10.4. Course	Knowledge acquired; level of understanding; Solving specific problems on confectionery technologies	Continuous assessment	70%
10.5. Seminary/Laboratory	Description of a technological process Making a specific application on confectionery technology;	Colloquy	30%
10.6. Minimal standard of performance			
Knowledge of quality indices of raw materials and the finished products of confectionery products. Knowledge of general technological scheme for obtaining major confectionery products			

[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 25-30 de hours of study (didactical and individual study).

Filled in on
07.09.2021

Course coordinator
Vlad Mureșan, PhD, habil., Associate Professor

Laboratory work/seminar coordinator
Georgiana Smaranda Marțiș, PhD, Assistant Professor

Subject coordinator
Vlad Mureșan, PhD, habil., Associate Professor

Approved by the Department on
22.09.2021

Head of the Department
Sevastița Muste, PhD, habil., Professor

Approved by the Faculty Council on
28.09.2021

Dean
Elena Mudura, PhD, habil., Professor