No_____from _____ **Form code USAMV–CN-0708020104**

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)]	**Post graduate**
1.6. Specialization/ Study Program	**Gastronomy, Nutrition and Food Dietetics**
1.7. Form of education	IF

2. Information on the discipline

2.1. Name of the course	**Confectionery and pastry products**							
2.2. Course leader				**Prof. dr. Emil RACOLŢA**				
2.3. Coordinator of seminary/laboratory activity/project				**Prof. dr. Emil RACOLŢA**				
2.4. Year of study	**II**	2.5. Semester	**III**	2.6. Type of evaluation	continuous	2.7. Course regime	Content[2]	DS
							Level of compulsory[3]	DI

3. Total estimated time (teaching hours per semester)

3.1. Number of hours/week – frequency form	3	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					33
3.4.2. Extra documentation in the library, on specific electronic platforms and on field					44
3.4.3. Preparation of seminaries/ laboratories/ projects, themes, papers, portfolies and essays					10
3.4.4.Tutorial					4
3.4.5. Examination					6
3.4.6. Other activities					
3.7. Total hours of individual study	97				
3.8. Total hours per semester	125				
3.9. Number of ECTS[4]	5				

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/ project development	Academic discipline is imposed throughout the practical works. 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).

6. Specific competences acquired

Professional competences	C2.1 Identification of specific gastronomic techniques and technologies for implementation in profile units; C2.3 Integrated use of classical and modern technologies for obtaining gastronomic dishes according to new concepts in nutrition; C2.4 Use of quality evaluation criteria and methods for optimizing technologies and products;
Transversal competences	CT1 Realization of complex, interdisciplinary, individual projects;

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. Raw and auxiliary materials 1.1 Sugar, honey, glucose, fructose and other syrups 1.2. Polyols. Isomalt, Maltitol, Mannitol, Xylitol, Sorbitol. 1.3. Synthetic sweeteners. Aspartame, cyclamate, saccharin 1.4. Vegetable and animal fats 1.5. Wheat flour, starch, pectins 1.6. Milk, cream, powdered milk 1.7. Candied fruits 1.8. Auxiliary materials 1.8.1. Synthetic flavors 1.8.2. Natural aromas	Lecture, explanation, conversation, debate	2 Lectures

1.8.3. Synthetic dyes 1.8.4. Natural dyes 1.8.5. antioxidants 1.8.6.Emulgatori		
2. Apparatus and utensils used in the confectionery laboratory	Lecture, explanation, conversation, debate	1 Lectures
3. Semi-preparations used in confectionery 3.1. Sugar-based semi-preparations (icing, chocolate icing, fondant, syrups, caramel) 3.2. Fruit and sugar semi-preparations 3.3. Flour and egg based preparations 3.4. Semi-prepared oleaginous fruits 3.5. Auxiliary semi-preparations 3.6. Creams used in confectionery	Lecture, explanation, conversation, debate	3 Lecture
4. Assembly, finishing, presentation and storage of confectionery-pastry preparations	Lecture, explanation, conversation, debate	1 Lecture

8.2. PRACTICAL WORK **Number of hours –14**		
1.Tempering the chocolate mass. Processing chocolate mass and chocolate compound and obtaining the tablets there of.	Experiment, explanation, working group	2 Practical Work
2. Liquid core manufacturing technology. Obtaining chocolate specialties with liquid filling.	Experiment, explanation, working group	1 Practical Work .
3. Obtaining the mass of fondant. Fondant processing, obtaining candies and decorations from fondant.	Experiment, explanation, working group	2 Practical Work
4. Development and description of the manufacturing technology of a new confectionery product made by each student.	Experiment, explanation, working group	1 Practical Work
6. Presentation of the manufacturing technology of the newly obtained confectionery product. Verification of knowledge.	Case Study	1 Practical Work

Compulsory Bibliography:
1. Berechet Gabriela, (2018). Cartea cofetarului patiser. Editura Imprima, București.
2. Racolţa Emil," *Tehnologia amidonului şi a produselor zaharoase*:, Ed. Risoprint 2008;
3. Racolţa Emil, Marta Hodrea, Teodora Şchiop, "*Îndrumător de lucrări practice pentru produse zaharoase"*, Ed.Risoprint, 2008;

Facultative Bibliography:
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	60%
10.5. Seminary/Laboratory	Description of a technological process Making a specific application on starch, oil and / or sugar technology;	Portfolio support	40%
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
7.09.2021

Course coordinator
Prof. dr. Racolta Emil

Laboratory work/seminar coordinator
Prof. dr. Racolta Emil

Subject coordinator
Prof. dr. Racolta Emil

Approved by the Department on
22.09.2021

Head of the Department
Prof.dr. Muste Sevastita

Approved by the Faculty Council on
28.09.2021

Dean
Prof.dr. Mudura Elena