No._____of _____ **USAMV form 0701030218**

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]	**Bachelor**
1.6.Specialization/ Study programme	**Technology of Agricultural Products Processing (TPPA)**
1.7. Form of education	**Full time**

2. Information on the discipline

2.1. Name of the discipline	**Analysis and interpretation of research data**							
2.2. Course coordinator				-				
2.3. Seminar/ laboratory/ project coordinator				Vlad Mureșan, PhD, habil., Associate Professor				
2.4. Year of study	**III**	2.5. Semester	**V**	2.6. Type of evaluation	summative	2.7. Discipline status	Content[2]	DD
							Compulsoriness[3]	DO

3. Total estimated time (teaching hours per semester)

3.1. Hours per week – full time programme	2	out of which: 3.2. lecture	0	3.3. seminar/ laboratory/ project	2
3.4.Total number of hours in the curriculum	28	Out of which: 3.5.lecture	0	3.6.seminar/laboratory	28
Distribution of the time allotted					hours
3.4.1. Study based on book, textbook, bibliography and notes					8
3.4.2. Additional documentation in the library, specialized electronic platforms and field					4
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					5
3.4.4.Tutorials					2
3.4.5.Examinations					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 credits[4]	2

4. Prerequisites (if applicable)

4.1. curriculum-related	Maths; Applied computer science and computer aided graphics; Statistical data processing
4.2. skills-related	The student must have knowledge of current mathematical techniques, as well as those of statistical data processing.

5. Conditions (if applicable)

5.1. for the lecture	-
5.2. for the seminar/ laboratory/ project	For practical works each student will carry out an application / technological computation / chemical analysis specific to Sugar technology. Academic discipline is imposed for the duration of works. Each student will develop specific applications for the Analysis and interpretation of research data in the field of Food Technologies.

6. Specific competences acquired

Professional competences	C3.2. Explaining and interpreting the principles and methods used in technological processes in the food chain 2-3. Application of basic engineering principles and methods for solving technological problems in the agri-food chain C3.5. Elaboration of projects related to technologies and products specific to the agri-food industry
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. Course objectives (based on the list of competences acquired)

7.1. Overall course objective	To acquire the knowledge concerning the raw materials, production technologies, equipment and facilities involved in sugar production (beet derived).
7.2. Specific objectives	Knowledge of quality parameters of sugar beet and sugar finished product; Knowledge of operations and operating principles of the equipment from sugar factory; Using and understanding the methods, analysis techniques, applications and technological computations from extraction technology (sugar) field; Realization of an experimental protocol specific to the food industry using computer applications; Use and understanding of methods, analysis techniques, applications and technological calculations in the field of food technologies; Knowledge of tabular and graphical representation techniques of research data

8. Content

8.1.LECTURE **Number of hours – 0**	Teaching methods	Notes

8.2. PRACTICAL WORK **Number of hours – 28**		
1. Research - systematic process of collecting and analyzing information (results) to improve the understanding of food products and processes. Experimental strategies.	Debate, questioning, explanation	1 Practical works
2. How to solve a problem in the food industry through methodological research. Scientific methods and critical thinking. Formulation of hypotheses.	Debate, questioning, explanation	1 Practical work
3. The stages of elaboration of a research plan specific to the food industry. Sources of scientific documentation. Industrial and intellectual property objectives. Electronic databases for patents and trademarks.	Experiment, conversation, explanation	3 Practical work
4. Establishing the study topics for Theme 1 of the Portfolio. Search, analysis and selection of bibliographic		

material relevant to a research topic specific to the food industry. Using Boolean logic operators to formulate the concept to be researched.	Experiment, conversation, explanation	1 Practical work
5. Specialized bibliographic research. Studying and organizing bibliographic material. Study of a scientific article or patent specific to the food industry - Theme 1 of the Portfolio: Summary and citation.	Experiment, conversation, explanation	2 Practical work
6. Experimentation strategy. Designing Experiences. Analysis of experimental data. Elaboration of a systematized experimental protocol. Computer applications. Parameter analysis and interpretation of results.	Experiment, conversation, explanation	2 Practical works
7. Multivariate analysis of research data specific to food products and processes. Theme 2 of the Portfolio: case study - Main component analysis.	Debate, questioning, explanation	2 Practical work
8. Experimental modeling of research data specific to food products and processes. Graphical Representation. Theme 3 of the Portfolio: experimental modeling of research data. Regression equations. Partial least square regression	Debate, questioning, explanation	2 Practical work

Compulsory bibliography:

1. DRUGAN Tudor C. și colab, 2016. Curs de Biostatisticã Medicalã, Editura Medicala Universitara "Iuliu Hatieganu" Cluj-Napoca.
2. CAMO Software Applications, 2017.
3. Minitab Softaware Applications, 2017.
4. Racolţa Emil, 2007. *"Tehnologii generale în industria alimentară*", Ed.Risoprint, Cluj Napoca.

Bibliografie Facultativă:
Optional bibliography:

Banu C. 2002. "*Manualul inginerului de industria alimentara*", Ed. Tehnica Bucuresti..

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

The content of the discipline is in accordance with the requests of specific national professional associations; teachers regularly participate in national and / or international fairs, workshops, symposia and congresses in the field of the food industry and undertake visits to specific production units

10. Assessment

Type of activity	10.1. Assessment criteria	10.2. Assessment methods	10.3. Percentage of the final grade
10.4. Lecture	-	-	-
10.5. Seminar/Laboratory	Acquired skills, involvement and interest in completing homework	Presentation / Support	10%
	Portfolio Theme 1: Summary and citation filing / Search, analysis and selection of relevant bibliographic material.	Presentation / Support	40%

	Theme 2 of the Portfolio: Realization of a technological flow scheme specific to the food industry. Theme 3 of the Portfolio: Tabular and graphical representation of the materials balance using computer applications	Presentation / Support Presentation / Support	25% 25%
10.6. Minimum performance standards			
Timely delivery of topics from the project portfolio.			

[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).

Laboratory work/seminar coordinator
Vlad Mureșan, PhD, habil., Associate Professor

Filled in on
07.09.2021

Course coordinator
-

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

Approved by the
Department on
22.09.2021

Head of the Department
Sevastița Muste, PhD, Professor

Approved by the Faculty
Council on
28.09.2021

Dean
Elena Mudura, PhD, habil., Professor