

DISCIPLINE SHEET

1. Data about program

1.1 Academic institution	1.1 Institution of higher education	UNIVERSITY OF ORADEA
1.2 Faculty	1.2 Faculty	FACULTY OF ENVIRONMENTAL PROTECTION
1.3 Department	1.3 Department	FOOD ENGINEERING
1.4 Field of study	1.4 Field of study	FOOD ENGINEERING
1.5 Cycle of study	1.5 Cycle studies	BACHELOR
1.6 Study programme/Qualification	1.6 Curriculum/Qualifications	TPPA/ ENGINEER

2. Data about the disciplines

2.1 Name of discipline		MILK TECHNOLOGY AND DERIVATIVE PRODUCTS					
2.2 Course holder		Ș.L. dr.ing. HILMA ELENA					
2.3 Laboratory holder		Ș.L. dr.ing. HILMA ELENA					
2.4 Year of study	IV	2.5 Semester	VIII	2.6 Type of evaluation	Ex	2.7 Regime of discipline	Ob

Ob – Compulsory; As – associated; Op – Optional.

Total estimate time (hours per semester of didactic activities)

3.1 Number of hours per week	3	from which:2 course	2	3.3 laboratory	1
3.4 Total hours in the curriculum	42	din care: 28 course	28	3.6 laboratory	14
Time allotment					hours
Study assisted by manual, course support, bibliography and notes					
Additional documentation in the library/ on specialised electronic platforms and in the field					
Preparation of seminars/laboratories/ topics/reports, portfolios and essays					
Tutorship					4
Examinations					4
Additional documentation in the library/ on specialised electronic platforms and in the field					
3.7 Total hours of individual study		8			
3.9 Total hours per semester		56			
3.10 Number of credits		2			

4. Precondiții (acolo unde este cazul)

4.1 curriculum	Milk processing technology, Food industry machinery, Inorganic chemistry and Organic chemistry, Biochemistry, Microbiology.
4.2 competences	Knowledge of milk components, component transformations, milk, knowledge of food industry machinery

5. Prerequisites (where appropriate)

5.1. related to course	<ul style="list-style-type: none"> Students will not be present at lectures, seminars/laboratories with mobile phones. It also will not be tolerated during phone calls, nor leaving by the students of the course with a view to taking over personal telephone calls.
5.2. related to seminar/laboratory/project	<ul style="list-style-type: none"> The term teaching seminar work shall be established by agreement with the holder of the students. Will not be accepting applications for deferment thereof on grounds other than objective grounds.

6. Specific competences acquired	
Professional competences	<ul style="list-style-type: none"> • C1 Analysis, interpretation, supervision and coordination of specific issues regarding the processing of food raw materials; • C2 Coordination of technological activities and processes based on technical specifications • C3 Analyzing the technical solutions necessary to improve the quality of food products and to reduce specific consumption as well as the elaboration, monitoring and implementation of new technical projects; C6 Providing consulting, counseling and performing new activities. • C4 Planning, organizing and coordinating commercial and marketing activities in food profile units • C5 Cooperation with responsible institutions in the field of food quality and safety • C6 Providing consultancy, counseling and carrying out extension activities

7. Objectives of discipline (coming from the specific competences acquired)

7.1 General objective	<ul style="list-style-type: none"> • Knowledge by students of raw materials, technological process, principle of operation of equipment • Technological calculations, consumption norms, justification of the raw material. • Quality of finished products, quality certification.
7.2 Specific objectives	<p>Accumulation of knowledge to</p> <ul style="list-style-type: none"> • processing in optimal conditions of milk; • economic efficiency in the processing of raw materials, materials and auxiliary materials, justification of raw materials and materials, • operation of specific equipment, • storage of finished products

8. Content *

8.1 Course	Methods of teaching	No. of hours/Remarks
1. Drinking milk, technological scheme, description of operations in the technological scheme	Interactive lecture with video projector	2
2 Machinery used in the manufacture of drinking milk, components, principle of operation	Interactive lecture with video projector	2
3 Consumer cream, technological scheme, description of operations in the technological scheme;	Interactive lecture with video projector	2
4 The influence of technological operations on the quality of consumer cream	Interactive lecture with video projector	2
5 Acidic dairy products: technological scheme, description of operations in the technological scheme	Interactive lecture with video projector	2
6 Canned milk (condensed milk, powdered milk): technological scheme, description of operations in the technological scheme	Interactive lecture with video projector	2
7 Machinery used in the manufacture of canned milk: component parts, operating principle	Interactive lecture with video projector	2
8 Butter: technological scheme, description of operations in the technological scheme	Interactive lecture with video projector	2
9 Machinery used in the manufacture of butter	Interactive lecture with video projector	2
10 Ice cream: classification, technological scheme, description of operations in the technological scheme; Equipment used in the manufacture of ice cream: components, operating principle	Interactive lecture with video projector	2
11 Cheeses, classification, coagulating enzymes	Interactive lecture with video projector	2
12 Fresh cheeses, soft pasta cheeses	Interactive lecture with video projector	2

13 Cheeses in brine, cheeses with fermented pasta and spun paste cheeses	Interactive lecture with video projector	2
14 Cheeses with melted paste, characteristics of cheeses	Interactive lecture with video projector	2
8.2. Laboratory		
1. Specific rules for the protection of labour.	Demonstration, analysis, and exposure	1
2. Technological flow analyzes for obtaining drinking milk	Demonstration, analysis, and exposure	1
3. Technological flow analyzes for obtaining consumer cream	Demonstration, analysis, and exposure	1
4. Microbiological analysis and detection of falsification of consumer cream	Demonstration, analysis, and exposure	1
5. Technological flow analyzes for obtaining acidic dairy products	Demonstration, analysis, and exposure	1
6. Technological flow analyzes for obtaining concentrated milk	Demonstration, analysis, and exposure	1
7. Analyzes on the technological flow of obtaining milk powder	Demonstration, analysis, and exposure	1
8. Technological flow analyzes for obtaining butter	Demonstration, analysis, and exposure	1
9. Butter analysis	Demonstration, analysis, and exposure	1
10. Ice cream analysis	Demonstration, analysis, and exposure	1
11. Methods of analysis of cheeses, collection of average samples of analysis, preparation of samples for analysis	Demonstration, analysis, and exposure	1
12. Determination of cheese humidity	Demonstration, analysis, and exposure	1
13 Determination of cheese fat	Demonstration, analysis, and exposure	1
14 Determination of salt percentage of cheeses and microbiological analyzes	Demonstration, analysis, and exposure	1
<p>Bibliography</p> <ol style="list-style-type: none"> Borda D. 2007. Tehnologii în industria laptelui-Aplicații ale presiunii înalte, Editura Academica Galați Chintescu G., Grigore Șt. 1982. Îndrumător pentru tehnologia produselor lactate. pag.33-40,59-76,181-207. Editura tehnică București Chintescu G. Îndrumător pentru tehnologia brânzeturilor. pag.10-13. Editura tehnică București. Costin, G. M., Bahrim, G., Borda, D., Curic, M., Florea, T., Hansen, K. F., Popa, C., Rotaru, G., Segal, R., Skriver, A., Stanciu, S. 2005. Produse lactate fermentate. pag.1-103, 115-176, 248-450. Ed. Academica, Galați. Costin, G. M., Cașulschi, T., Pop, D. M., Stanciu, S., Paraschiv, D. 2007. Produse lactate funcționale. Ed. Academica, Galați. Costin, G. M., Florea, T., Popa, C., Rotaru, G., Segal, R., Bahrim, G., Botez, E., Turtoi, M., Stanciu, S., Turtoi, G. 2003. Știința și ingineria brânzeturilor. pag. 29-214, 458-564, Ed. Academica, Galați. Costin G.M., 1985. Principii și procedee moderne în industria brânzeturilor. pag. 9-163, Universitatea Galați Costin G.M., Lungulescu Gr.. 1985. Valorificarea subproduselor din industria laptelui. pag.11-22. Editura Tehnică, București. Georgescu Gh. 2005. Cartea producătorului și procesatorului de lapte. pag. 13-140; 254-276; 324-40. Editura Ceres, București. Guzun V., Gr. Mustață, S. Rubțov, C. Banu, C. Vizireanu. 2001. Industrializarea laptelui. Editura "Tehnica-Info" Chișinău. Hîlma Elena, 2012, Control de calitate în tehnologia de prelucrare a laptelui, Editura Universității din Oradea. Moraru C., Giurcă V., Segal B., Banu C., Costin G. M., Moțoc D., Pană N. Biochimia Produselor Alimentare, Editura Tehnică București. Rotaru G. 2003. Sisteme de asigurare a calității, în Știința și ingineria fabricării brânzeturilor. Editura Academica, Galați Rotaru G., Moraru C. 1997. Industria alimentară. H.A.C.C.P. Calitate. Analiza riscurilor. Punctele critice de control. Ed. Academica, Galați. Scorțescu, G., Chintescu G., Buhățel R. 1967. Tehnologia Laptelui și a Produselor Lactate. Editura Tehnică București. 		

9. Corroboration of discipline content with the expectations of the epistemic community, professional associations and representative employers from the field corresponding to the study programme

The study provides specialists for milk processing units, for distributors of equipment and additives in the dairy industry

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the final grade
10.4 Course	for note 5– knowledge of material 50% for note 10 – knowledge of material 100%	Summative assessment- sample exam-written or oral	80%
10.5 Seminar	-	-	-
10.6 Laboratory	Test with 5 questions at the end of the laboratory works	Continuous evaluation in the laboratory; knowledge verification laboratory	10% 10%
10.7 Project	-	-	-
10.8 Minimum standard of performance			
<ul style="list-style-type: none"> • Elaboration of a project or process specific food industry equipment, using concepts, theories and methods in the field • The development of a technological project • Preparation of a technical study by the efficient use of resources and sources of relevant and current documentation (including internet, databases, online courses). 			

Date of completion
1.10.2020

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