UNIVERSITATEA DE ŞTIINŢE AGRICOLE ŞI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
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0702030106

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]	Level 1. Bachelor
1.6. Specialization/ Study programme	**Control and expertise of food products**
1.7. Form of education	Regular studies

2. Information on the discipline

2.1. Name of the course	**General technologies of products of animal origin 1**							
2.2. Course coordinator	**Associate professor PhD. Mirela Jimborean**							
2.3. Seminar/ laboratory/ project coordinator	**Assistant PhD. Delia Michiu**							
2.4. Year of study	III	2.5. Semester	V	2.6. Type of evaluation	Exam	2.7. Discipline status	Content[2]	BD
							Compulsoriness[3]	CI

3. Total estimated time (teaching hours per semester)

3.1. Hours per week – full time programme	4	Of which: 3.2.course	2	3.3. laboratory	2
3.4. Total number of hours in the curriculum	56	Of which: 3.5.course	28	3.6. Laboratory	28
Distribution of time allotted					hours
3.4.1. Study based on book, textbook, bibliography and notes					14
3.4.2. Additional documentation in the library, specialized electronic platforms and field					10
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays					4
3.4.4. Tutorials					8
3.4.5. Examinations					8
3.4.6. Other activities					hours
3.7. Total hours of individual study	44				
3.8. Total hours per semester	100				
3.9. Number of credits[4]	4				

4. Prerequisites (is applicable)

4.1. curriculum-related	Food Biochemistry, Food Industry Equipment, Food Microbiology
4.2. skills-related	Identification, description and appropriate use of specific concepts of food science and food safety Understanding the basic notions of how to obtain and the conservation of the products feeding

5. Conditions

5.1. for the lecture	Video projector, ppt presentation.
5.2. for the seminar/ laboratory/ project	Dairy pilot station, raw and auxiliary materials, technological schemes, laboratory analysis

6. Specific competences acquired

Professional competences	C3.1. Description and use of concepts, basic methods and theories regarding the technologies of products of animal origin: milk C5.2. Identify institutional responsibilities for the safety of dairy products. C2.3. To apply principles and scientific methods of packaging and labelling to help solution technological problems in the agro-food chain. C2.4. Critical analysis, evaluation of characteristics, performances and limits of some technological processes and equipment in the field of milk and dairy products industry.
Transversal competences	**CT1.** Application of strategies of perseverance, rigor, efficiency and responsibility in work, punctuality and assuming responsibility for the results of personal activities, creativity, common sense, analytical and critical thinking, problem solving etc., based on the principles, norms and values of the code of professional ethics in the food industry.

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

7.1. Overall course objective	Acquiring knowledge about the key technologies for dairy products. Understanding the role of technologists role in dairy technological operations and monitoring the process parameters
7.2. Specific objectives	Raw material characterization The knowledge of the biochemical processes which underly the obtaining of dairy The interpretation of technological schemes and the description of technologies for dairy The characterization of final products The understanding of the role and importance of technology in relation to other disciplines and the correlation of the knowledge from the disciplines that concern the general specialty training

8. Contents

8.1.COURSE	Teaching methods	Notes
The composition and properties of milk. Conditioning milk after milking.	Lecture, heuristic conversation, explanation	1 lecture = 2 hours
Technology of obtaining drinking milk	Lecture, heuristic conversation, explanation	1 lecture = 2 hours
Technology dietary dairy	Lecture, heuristic conversation, explanation	1.5 lecture = 3 hours
Technology of consumption cream	Lecture, heuristic conversation, explanation	1 lecture = 2 hours
Technology of butter production.	Lecture, heuristic conversation, explanation	1.5 lecture = 3 hours
Technology of ice cream production.	Lecture, heuristic conversation, explanation	2 lectures = 4 hours
Concentrated and dried dairy products	Lecture, heuristic conversation, explanation	1 lecture = 2 hours
The general technology of cheese production The main types of cheese: 1. fresh cheese 2. cheeses ripened in brine; 3. semi-hard and hard cheeses; 4. scalded cheese 5. melted and kneaded cheese.	Lecture, heuristic conversation, explanation	5 lectures = 10 hours

8.2. PRACTICAL WORS HOURS		
Behavior of milk proteins to external factors. Indices of quality of milk collected.	Demonstration, observation	2 hours
Normalization of milk. Technological calculations.	Exercise	2 hours
Technological calculations in the manufacture of dietary dairy, cream and butter	Exercise	2 hours
Manufacture of yogurt, beat milk and Sana	Demonstration	3 hours
Butter manufacture	Practical demonstration, observation	2 hours
Ice cream manufacture. Establishing manufacturing recipe. Calculations technological ice-cream	Practical demonstration, observation	2 hours
Technological calculations in cheese making.	Exercise	2 hours
Getting a fresh cheese	Practical demonstration, observation	2 hours
Cheese ripened in brine.	Practical demonstration, observation	4 hours
Manufacture of cow's milk cheese	Practical demonstration, observation	4 hours
Manufacture of processed cheese.	Practical demonstration, observation	2 hours
Colloquy	Checking accumulated knowledge	1 hour

Compulsory bibliography:

1. Mirela Anamaria Jimborean şi Dorin Ţibulcă, 2013, Tehnologia produselor lactate – îndrumător de lucrări practice, Editura Risoprint, Cluj-Napoca, ISBN 978-973-53-1012-7
2. Mirela Anamaria Jimborean şi Dorin Ţibulcă, 2016, Procesarea laptelui – partea a II-a, Editura Risoprint, Cluj-Napoca
3. Ţibulcă, D. şi Mirela Jimborean, 2005, Tehnologia laptelui şi a produselor lactate, Editura Risoprint, Cluj-Napoca.
4. Dorin Ţibulcă şi Mirela Anamaria Jimborean, 2015, Procesarea laptelui – partea I, Editura Risoprint, Cluj-Napoca.

Optional bibliography:

1. Banu, C. şi Vizireanu Camelia, 1998, Procesarea industrială a laptelui, Ed. Tehnică, Bucureşti.
2. Costin, G. şi colab., (2003), Ştiinţa şi ingineria fabricării brânzeturilor, Editura Academica, Galaţi;
3. Costin, G. şi colab., (2005), Produse lactate fermentate, Editura Academica, Galaţi;
4. Mirela Anamaria Jimborean şi Dorin Ţibulcă, 2006, Tehnologia de fabricare a brânzeturilor, Editura Risoprint, Cluj-Napoca ISBN: 973-751-364-9
5. Ţibulcă, D. şi Mirela Jimborean, 2003, Fabricarea produselor lactate şi a brânzeturilor, Editura AcademicPres, Cluj-Napoca;
6. D. Ţibulcă, Mirela Anamaria Jimborean, 2008, Tehnologia de obţinere a produselor lactate, Editura Risoprint, Cluj-Napoca, ISBN 978-973-751-722-7.

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

Course content is according with what is done in other universities in the country and abroad. To adapt to market demands, in preparing course description, were taken into consideration advices from graduate students of the Faculty of Food Science and Technology, who are working in the field

10. Assessment

Type of activity	10.1. Assessment criteria	10.2. Assessment methods	10.3. Percentage of the final grade
10.4. Course	Logical, coherent and correct learning of milk technology notions.	Exam	75%
10.5. Seminar/Laboratory	Logical, coherent and correct application of the acquired notions	colloquy	25%
10.6. Minimum performance standards			
Knowledge of the main operations and brief description of the operations in the field of the milk and dairy products technology. Solving concrete problems on the technological flow of obtaining a dairy product. Writing materials for institutions responsible for food quality (flow chart). Obtaining a minimum grade of 5 for practical works.			

[1] Cycle of studies- choose of the three options: Bachelor/Master/PhD.
[2] Discipline status (content)- for the undergraduate level, choose one of the options:- **FD** (fundamental discipline), **BD** (basic discipline), **CS** (specific disciplines-clinical sciences), **AP** (specific disciplines-animal production), **FH** (specific disciplines-food hygiene), **UO** (disciplines based on the university's options).
[3] Discipline status (compulsoriness)- choose one of the options – **CD** (compulsory discipline) **OD** (optional discipline) **ED** (elective discipline).
[4] One credit is equivalent to 25-30 hours of study (teaching activities and individual study).

Course coordinator
Associate professor PhD. Mirela Jimborean

Laboratory work/seminar coordinator
Assistant PhD. Delia Michiu

Filled in on
08.09.2021

Subject coordinator
Associate professor PhD. Mirela Jimborean

Approved by
the department
on
22.09.2021

Head of the Department
Professor PhD. Sevastiţa Muste

Approved by
the Faculty
Council on
28.09.2021

Dean
Professor PhD. Elena Mudura