UNIVERSITATEA DE ŞTIINŢE AGRICOLE ŞI MEDICINĂ VETERINARĂ CLUJ-NAPOCA
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No._____of _____ **USAMV form 0703030114**

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.Education level	Bachelor
1.6.Specialization/Study programme	Food Engineering
1.7. Form of education	Full time

2. Information on the discipline

2.1. Name of the course	**General technologies in the meat industry 1**							
2.2. Course leader	**Associate professor PhD. Dorin Ţibulcă**							
2.3. Seminar/ laboratory/ project coordinator	**Associate professor PhD. Dan Sălăgean**							
2.4. Year of study	III	2.5. Semester	VI	2.6 Type of evaluation	summative	2.7. Discipline status	Content[2]	AP
							Compulsoriness[3]	CD

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	18
3.4.2. Additional documentation in the library, specialized electronic platforms and field	8
3.4.3. Preparing seminars/ laboratories/ projects, subjects, reports, portfolios and essays	8
3.4.4. Tutorials	3
3.4.5. Examinations	7
3.4.6. Other activities	0

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, Unit operation in Food Industry, Food Industry equipment, Animal raw materials, Transfer phenomena, Food microbiology, Agri-food hygiene
4.2.skills-related	General knowledge of food engineering, communication in Romanian, digital skills

5. Conditions (if applicable)

5.1.for the lecture	The course is interactive, students can ask questions about the content of the presentation. Academic discipline requires compliance with the start and end of the course. Classroom equipped with PC unit, video projector, projection screen, blackboard. No other activities are tolerated during the lecture, mobile phones are switched off. Attendance required at the course: minimum 50%. In the case of the didactic activity carried out online, the teaching methods will be adapted
5.2.for the seminar/ laboratory/ project	For practical work, it is mandatory to consult the practical guide. Each student will participate in the practical work. Academic discipline is required throughout the

	work. The outfit must be appropriate (white robe, cap, disposable cover dispensers, gloves). Pilot station equipped with PC unit, video projector, projection screen, blackboard, equipment, machinery, utensils, raw materials, auxiliaries, materials. Presence required: 100% (absences must be recovered). In the case of the didactic activity carried out online, the teaching methods will be adapted

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 installations in the technological flow of meat production. C2.2. Explanation and interpretation of basic engineering concepts, methods and models in equipment exploitation issues in the meat industry C2.3. Application of basic engineering principles and methods for solving technological problems in the meat industry
Transversal competences	CT1: Applying strategies of perseverance, rigor, efficiency and responsibility at work, punctuality and taking responsibility for the results of personal activity, creativity, common sense, analytical and critical thinking, problem solving, etc., based on the principles, norms and values of the code professional ethics in the food field.

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

7.1.Overall course objective	Development of general practical skills Acquisition of basic knowledge on the technology of slaughtering animals and processing the resulting meat
7.2.Specific objectives	Acquisition of knowledge on meat yields and signs of recovery of organs and by-products, supply of animals and their transport to slaughterhouses Knowledge of the equipment of slaughterhouses Acquiring knowledge on the technology of animal processing in slaughterhouses Cold preservation of meat, morphology and biochemistry of meat Acquisition of knowledge on meat cutting, deboning and selection operations Notions regarding the implementation of the HACCP system for animal slaughter Understanding the role and importance of the discipline in relation to the other disciplines and correlating the knowledge from the disciplines aimed at the general specialized training.

8. Content

8.1.LECTURE **Number of hours – 28**	Teaching methods Lecture	Notes 1 lecture = 2 hours
Meat supply animals. Quality, supply and transport of animals Supply of animals and their transport. Meat yields and recovery indices of organs and by - products. Animal slaughter units. Equipping slaughterhouses with technological equipment	Lecture, heuristic conversation, explanation	1 lecture
Slaughterhouse animal processing technology Preparing animals for slaughter. Suppression of animal life (stunning and bleeding of animals) Initial processing of animals (skinning, scalding, depilation, scalding, ash scraping and finishing). Carcass processing (evisceration, splitting, grooming, sanitary-veterinary examination, marking and weighing of meat). Analysis of critical points in the slaughter of animals in order to prepare the HACCP plan	Lecture, heuristic conversation, explanation	6 lectures

Technology of birds slaughtering		
Cold preservation of meat General considerations. The presence of microorganisms in meat. Meat refrigeration processes. Meat freezing	Lecture, heuristic conversation, explanation	2 lectures
Morphological structure, chemical composition and quality of meat Structure and chemical composition of muscle tissue, connective tissue, adipose tissue	Lecture, heuristic conversation, explanation	1 lecture
Meat biochemistry Changes that occur in the muscles after slaughter (stage of prerigidity, stage of muscle rigidity). Maturation of the meat. Abnormal conditions of pork (P.S.E. condition, D.F.D. condition)	Lecture, heuristic conversation, explanation	1 lecture
Cutting, deboning and choosing meat Beef slicing Slicing pork Slicing mutton. Cutting of by-products (beef head, pig head, slag), choice of organs	Lecture, heuristic conversation, explanation	3 lectures

8.2. PRACTICAL WORK **Number of hours – 28**	Theoretical presentation of practical works	1 labwork (2 hours/work)
Cattle slaughter technology	Demonstration, observation, conversation	1 lab work
Pig slaughter technology	Demonstration, observation, conversation	1 lab work
Sheep slaughter technology	Demonstration, observation, conversation	1 lab work
Slaughter technology of poultry	Demonstration, observation, conversation	1 lab work
Technological calculations for animal slaughter	Exercise	3 lab works
Use of cold in the meat industry. Technological calculations	Exercise	1 lab work
Cutting, deboning and choosing of beef	Demonstration, observation, conversation	2 lab works
Slicing, deboning and picking pork	Demonstration, observation, conversation	2 lab works
Slicing, boning and selection of mutton.	Demonstration, observation, conversation	1 lab work
Verification of the knowledge (throughout the semester)	Template tests /oral	1 lab work

Compulsory bibliography:

1. *Ţibulcă, D. şi Sălăgean, D., 2000, Tehnologia cărnii şi a produselor din carne, vol I şi II, Ed. Risoprint, Cluj-Napoca.*
2. *Sălăgean, D. şi Ţibulcă, D., 2009, Tehnologia produselor din carne, Ed. Risoprint, Cluj-Napoca*
3. *Ţibulcă, D. şi Sălăgean, D., 2010, Procesarea cărnii, vol. I, Ed. Risoprint, Cluj-Napoca*
4. *Sălăgean, D. şi Ţibulcă, D., 2010, Tehnologia cărnii şi a produselor din carne – îndrumător de lucrări practice, Ed. Risoprint*

Optional bibliography:

1. *Banu, C. ş.a., 1997, Procesarea industrială a cărnii, Ed. Tehnică, Bucureşti.*
2. *Banu, C. ş.a., 2003, Procesarea industrială a cărnii, Ed. Tehnică, Bucureşti.*
3. *Sălăgean, D. şi Ţibulcă, D., 2004, Tehnologia de fabricaţie a preparatelor din carne - îndrumător de lucrări practice, Ed. Bedin, Bistriţa*

9. Corroborating thecourse contentwith the expectations of the epistemic community representatives, of the professional associationsand of therelevantstakeholders in thecorresponding field

The content of the discipline is in accordance with the requests of specific national professional associations

10. Assessment

Type of activity	10.1.Assessment criteria	10.2.Assessment methods	10.3.Percentage of the final grade
10.4. Lecture	Logical and correct application of the acquired notions Assimilation of knowledge	Oral exam	70%
10.5. Seminar/Laboratory	Applying knowledge of animal slaughter and carcass processing technology	Continuous assessment Colloquium	30%
10.6. Minimum performance standards			
Understanding, describing and interpreting the basics in the technology of slaughtering animals and processing carcasses; Ability to apply the knowledge gained by solving at least 50% of the theoretical topics.			

[1] Education levels- choose of the three options:Bachelor/*Master/Ph.D.

[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 hours of study (teaching activities and individual study).

[5/] *Disciplines: AK- Advanced knowledge, CT- Complementary Training, S- Synthesis

Filled in on
09.09.2021

Course coordinator
Associate Professor PhD. Dorin Ţibulcă

Laboratory work/seminar coordinator
Associate Professor PhD. Dan Sălăgean

Subject coordinator
Associate Professor PhD. Dorin Ţibulcă

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