

Study programme: PROCESSING OF ANIMAL PRODUCTS – 4 year study programme

DIPLOMA: AGRICULTURE ENGINEER, BACCALAUREAT – Processor of animal products

General programme for the first three years is identical for all study programmes

Code	VII Semester – fourth year			
	Course	Credits	Hours	Total
2ZF120712	Meat and meat products	8	3+2+2	216
2ZF120812	Pasterisation and sterilisation	8	3+2+2	216
2ZF120912	Conzervation of the meat	6	2+2+1	156
	<i>Faculty elective course</i>	4	2+1+1	120
	<i>Faculty elective course</i>	4	2+1+1	120
Total:		30	12+8+7	828

Code	VIII Semester – fourth year			
	Course	Credits	Hours	Total
2ZF121612	Additives and spices	6	2+2+1	156
2ZF121112	Milk and milk products	6	2+2+1	156
	<i>Faculty elective course</i>	4	2+1+1	120
	<i>University elective course</i>	6	2+2+1	156
	Graduation thesis	8	0+0+8	192
Total:		30	8+7+12	780

<i>Faculty elective course 7 semester</i>				
2ZF121212	Storage and pacaging	4	2+1+1	120
2ZF121012	Minor animal products	4	2+1+1	120
2ZF121412	Practical work in processing indystry	4	2+1+1	120
2ZF121312	Control of animal products	4	2+1+1	120
<i>Faculty elective course 8 semester</i>				
2MF103712	Quality Management	4	2+1+1	120

<i>University elective courses VII semester and VIII semester</i>				
UGD102212	Fundamentals of Tourism	6	2+2+1	156
UGD102312	Earth Sciences	6	2+2+1	156
UGD102412	Physics	6	2+2+1	156
UGD102512	Biology	6	2+2+1	156
UGD102612	Health care	6	2+2+1	156
UGD102012	History of Art	6	2+2+1	156
UGD102112	National history	6	2+2+1	156

Appendix No.3		Syllabus for the first, second and third cycle of study			
1.	Course title	Meat and meat products			
2.	Course code	2ZF120712			
3.	Study programme:	Modul Processing of animal products, 4 years studies			
4.	Organizers of the study programme (faculty, institute, group)	University "Goce Delcev"- Stip, Faculty of Agriculture			
5.	Level of study (first, second, third cycle)	First cycle			
6.	Academic year / semester	Forth year, VII semester	7.	Number of ECTS credits	8
8.	Professor	Prof. Aco Kuzelov PhD			
9.	Preconditions for course enrollment	No			
10.	Goal of the course programme: Familiarize students with manufacturing and meat canning and technology of manufacturing meat products.				
11.	Content of the course programme: A) Content of lectures: 1. Facilities in the meat industry; 2. Transport of livestock for slaughter and consequences of transport; 3. Slaughter and primary processing of livestock for slaughter; 4. Chemical composition and post mortal changes of meat; 5 Meat carcass – categorisation and classification; 6. Machines in meat industry; 7. Production of sausages; 8. Production of meat products and bacon; 9. Production of dry fermented products; 10. Production of meat cans; 11. Production of ready to eat meat meals; 12. Production of lard and bovine fat. B) Content of exercises: 1. Importance of meat in human nutrition; 2. Different meat types; 3. Taking samples for testing; 4. Dissection; 5. Dissection of high rib; 6. Determination of water, fats, proteins and minerals content; 7. Sample boiling; 8. Sample baking; 9. Taking samples from meat product for testing; 10. Examinations of nitrite and salt; 11. Examinations of meat cans; 12. Evaluation of meat products at fairs and exhibitions.				
12.	Methods of study: lectures, theoretical and practical exercises, consultations; making independent seminar work; learning home; exam preparatory classes and mid-term tests: consultation				
13.	Total amount of available time	216 hours			
14.	Distribution of the available time	3+2+2			
15.	Forms of teaching activities	15.1.	Lectures - theoretical training	3	
		15.2.	Practice (laboratory, auditory), workshops, outreach and teamwork	2	
16.	Other forms of activities	16.1.	Team projects		
		16.2.	Individual projects	1	
		16.3.	Individual study	1	
17.	Forms of assessment				
	17.1.	Exams (mid-term exams, exam, electronic testing)		70	

	17.2.	Project activities (oral and written presentation)		10
	17.3.	Other forms of studying activities		20
18.	Criteria for assessment (points / grade)	to 50 points	5(five) (F)	
		from 51 to 60 points	6(six) (E)	
		from 61 to 70 points	7(seven) (D)	
		from 71 to 80 points	8(eight) (C)	
		from 81 to 90 points	9(nine) (B)	
		from 91 to 100 points	10(ten) (A)	
19.	Condition for getting a signature and taking the final exam	60% of term activities or minimum 42 points from 2 mid-term exams, project activities and attending to lectures and discussions		
20.	Language in which classes are conducted	Macedonian		
21.	Method of monitoring the quality of instruction	Self-evaluation		
22.	Literature			
	Compulsory literature			
	Ordinal number	Author	Title	Publisher
22.1.	1.	Prof PhD Aco Kuzelov	Meat and meat products – internal script	UGD - Stip
	Additional literature			
	Ordinal number	Author	Title	Publisher
22.2.				

Appendix No.3		Syllabus for the first, second and third cycle of study			
1.	Course title	Pasteurization and sterilization			
2.	Course code	2ZF120812			
3.	Study programme:	Modul Processing of animal products			
4.	Organizers of the study programme (faculty, institute, group)	University "Goce Delcev"- Stip, Faculty of Agriculture			
5.	Level of study (first, second, third cycle)	First cycle			
6.	Academic year / semester	Fourth year, VII semester	7.	Number of ECTS credits	8
8.	Professor	Prof. Liljana Koleva Gudeva, Ph.D			
9.	Preconditions for course enrollment	No			
10.	Goals of the course programme: The role of microorganisms in food spoilage processes and application of methods for sterilization and pasteurization				
11.	Content of the course programme: A) Content of lectures: 1. Sterilization; 2. Sterilization by means of physical agents, Sterilization using chemical agents; 3. Physical-chemical changes in food processing				

	<p>at low temperatures; 4. Food spoilage, Mechanical changes, biochemical changes, changes of microbiological nature; 5. Bacterial endotoxins and their importance in food microbiology; 6. Pasteurization of milk; 7. Thermal processing of milk, Termalization; 8. Low Long sterilization, pasteurization Average short, short pasteurization; 9. Food Preservation, Preservation by freezing; 10. Methods of food preservation, Physical methods, Preservation by heat sterilization; 11. Canning fruits; 12. Pasteurization and sterilization of fruit.</p> <p>B) Content of exercises: 1. Canning fruits; 2. Canning vegetables; 3. Canning fruit; 4. Vegetable canning products; 5. Drying fruits and vegetables; 6. Pasteurization of milk; 7. Preservation of milk products; 8. Fruit and vegetable canning and drying; 9. Conservation of biological pathway (fermentation); 10. Additives - preservatives; 11. Preservation of food by adding chemical additives and antibiotics; 12. New methods of food preservation.</p>					
12.	Methods of study: lectures, theoretical and practical exercises, consultations; making independent seminar work; learning home; exam preparatory classes and mid-term tests: consultation					
13.	Total amount of available time		216 hours			
14.	Distribution of the available time		3+2+2			
15.	Forms of teaching activities	15.1.	Lectures - theoretical training	3		
		15.2.	Practice (laboratory, auditory), workshops, outreach and teamwork	2		
16.	Other forms of activities	16.1.	Team projects			
		16.2.	Individual projects	1		
		16.3.	Individual study	1		
17.	Forms of assessment					
	17.1.	Exams (mid-term exams, exam, electronic testing)			70	
	17.2.	Project activities (oral and written presentation)			10	
	17.3.	Other forms of studying activities			20	
18.	Criteria for assessment (points / grade)		to 50 points	5(five) (F)		
			from 51 to 60 points	6(six) (E)		
			from 61 to 70 points	7(seven) (D)		
			from 71 to 80 points	8(eight) (C)		
			from 81 to 90 points	9(nine) (B)		
			from 91 to 100 points	10(ten) (A)		
19.	Condition for getting a signature and taking the final exam		60% of term activities or minimum 42 points from 2 mid-term exams, project activities and attending to lectures and discussions			
20.	Language in which classes are conducted		Macedonian			
21.	Method of monitoring the quality of instruction		Self-evaluation			
22.	Literature					
	22.1.	Compulsory literature				
		Ordinal number	Author	Title	Publisher	Year
1.		Senadin Durakovic, Frane	Modern microbiology of food	Zagreb		

			Delas, Lejla Durakovic			
		2.				
		3.				
22.2.	Additional literature					
	Ordinal number	Author	Title	Publisher	Year	
	1.					
	2.					
	3.					

Appendix No.3		Subject programme for first second and third level of studies				
1.	Title of the subject	CONZERVATION OF THE MEAT				
2.	Code	ZZF120912				
3.	Study programme	Processing of animal products – four years studies				
4.	Organization of study programme (unit, institute, department)	Faculty of Agriculture, Department of food technology and processing of animal products				
5.	Level (first, second, third cycle)	First cycle				
6.	Academic year / semester	Third year Fifth semester	7.	Number of EKTC credits	6	
8.	Professor	Prof. Mitre Stojanovski, PhD				
9.	Preconditions for course enrollment	/				
10.	Goals of the subject programme: Introduction of the students with ways of meat conservation.					
11.	Content of the course programme: A) Content of lectures: 1. Introduction; 2. The ways of meat conservation; 3 . Cooling of the meat; 4. Changes caused by cooling meat; 5.Freezing of the meat: 6.; Changes caused by freezing meat: 7. Smoking meat 8. Canning meat with heat: 9. Drying meat: 10. Salting and brining meat: 11. Changes caused by smoking meat drying, heat treatment, Brining and curing 12 . Preservation with antibiotics and antiseptics: B) Content of practice: 1. Introduction; 2. The ways of meat conservation; 3 . Cooling of the meat; 4. Changes caused by cooling meat; 5.Freezing of the meat: 6.; Changes caused by freezing meat: 7. Smoking meat 8. Canning meat with heat: 9. Drying meat: 10. Salting and brining meat; 11. . Changes caused by smoking meat drying, heat treatment, Brining, 12 . Preservation with antibiotics and antiseptics:					

12.	Methods of studying: lectures, theoretical and practical exercises, consultations; making independent seminar work; learning home; exam preparatory classes and mid-term tests: consultations				
13.	Total available time		156 classes		
14.	Distribution of the available time		2+2+1		
15.	Forms of teaching activities	15.1.	Lectures- Theoretical lectures	2	
		15.2.	Practices, seminars, team work	2	
16.	Other activities	16.1.	Projects exercises		
		16.2.	Independent exercises	1 class per week	
		16.3.	Study home	-	
17.	Forms of assessment				
	17.1.	Tests, 2 mid-term tests x 20		40 points	
		Activity and participation 10 lectures 10 practices		20 points	
	17.2.	Seminar work/ project (presentation: written and oral)		10 points	
	17.3.	Final exam		30 points	
18.	Criteria for assessment (points/ grade)		from 50 points	5 (five)	F
			from 51 till 60 points	6 (six)	E
			from 61 till 70 points	7 (seven)	D
			from 71 till 80 points	8 (eight)	C
			from 81 till 90 points	9 (nine)	B
			from 91 till 100 points	10 (ten)	A
19.	Condition for getting a signature and taking the final exam		60% success of all activities before exam 42 points from two colloquium, seminar work, regularity on lecture and practices		
20.	Language in which classes are conducted		Macedonian language		
21.	Method of monitoring the quality of instruction		Self evaluation		

22.	Literature				
22.1.	Compulsorily literature				
	Ordinal Number	Author	Title	Publisher	Year
	1.	Prof. D-r. Mitre Stojanovski	Meat production-skript	University St. Kliment Ohritski Faculty of Biotechnical Sciences Bitola	
	2.				

		3.				
22.2.	Additional literature					
	Ordinal Number	Author	Title	Publisher	Year	
	1.					
	2.					
		3.				

Appendix No.3		Syllabus for the first, second and third cycle of study			
1.	Course title	Storage and packing			
2.	Course code	ZZF121212			
3.	Study programme:	Food Processing of Animal Products			
4.	Organizers of the study programme (faculty, institute, group)	University "Goce Delcev"- Stip. Faculty of Agriculture			
5.	Level of study (first, second, third cycle)	First cycle			
6.	Academic year / semester	Fourth /seventh semester	7.	Number of ECTS credits	4
8.	Professor	Assist. Prof. Zoran Dimitrovski, PhD			
9.	Preconditions for course enrollment	No			
10.	Goals of the course programme: Students are introduced with storage and packaging of animal products.				
11.	Content of the course programme: 1. Introduction 2. Types of animal products 3. Types of packaging 4. Actions packaging 5. Storage container 6. Equipment and means of filling, closing and storage containers 7. Designing packaging 8. Impact of packaging on the quality of the product 9. Impact of the product on the packaging 10. Ways of storing animal products.11. Storage conditions of animal products 12. Premises for the storage of animal products				
12.	Methods of study: Lectures, Laboratory exercises, e-learning, individual and team projects, consultations.				
13.	Total amount of available time	120 hours			
14.	Distribution of the available time	2+1+1			
15.	Forms of teaching activities	15.1.	Lectures - theoretical training	2	
		15.2.	Practice (laboratory, auditory), workshops, outreach and teamwork	1	
16.	Other forms of activities	16.1.	Team projects	0.5	
		16.2.	Individual projects	0.5	
		16.3.	Individual study		

17.	Forms of assessment		
17.1.	Exams (mid-term exams, exam, electronic testing)		70
17.2.	Project activities (oral and written presentation)		10
17.3.	Other forms of studying activities		20
18.	Criteria for assessment (points / grade)	to 50 points	5 (five) (F)
		from 51 to 60 points	6 (six) (E)
		from 61 to 70 points	7 (seven) (D)
		from 71 to 80 points	8 (eight) (C)
		from 81 to 90 points	9 (nine) (B)
		from 91 to 100 points	10 (ten) (A)
19.	Condition for getting a signature and taking the final exam	60% of term activities or minimum 42 points from 2 mid-term exams, project activities and attending to lectures and discussions	
20.	Language in which classes are conducted	Macedonian	
21.	Method of monitoring the quality of instruction	Self-evaluation, Periodical tests, Interim polls,	

22.	Literature				
22.1.	Compulsorily literature				
	Ordinal Number	Author	Title	Publisher	Year
	1.	Borislav Dzinleski	Meat and meat product	Skopje	1985
	2.	Marija Karic, S Milanovic, D. Vukela	Standard methods for analyzing of milk and milk products	Bitola	2006
	3.	Aleksandar A.	Microbiology of water, food and air	Skopje	2000
22.2.	Additional literature				
	Ordinal Number	Author	Title	Publisher	Year
	1.	Prof. d-r Rubin Gulaboski	Handbook of Food Analysis Instruments	Taylor & Francis, Semih Otles	2008
	2.				
	3.				

Appendix No.3		Subject programme for first cycle of studies
1.	Title of the subject	MINOR ANIMAL PRODUCTS
2.	Code	2ZF121012
3.	Study programme	Processing of animal products

4.	Organizer of study programme (unit, institute, department,)	Faculty of Agriculture, Department of food technology and processing of animal products		
5.	Level (first, second, third cycle)	First cycle		
6.	Academic year / semester	Forth year/seven semester	7.	Number of ECTS credits
				4
8.	Professor	Prof. Aco Kuzelov PhD		
9.	Preconditions for course enrollment	/		
10.	Goals of the subject programme: Introduction of the students to the technology of production of by-products from slaughter.			
11.	Content of the course programme: A) Content of the Lectures: 1. Introduction; 2.Composition of animal fats; 3. Raw material for production of food animal fats; 4.Technology of production of animal fats; 5.Technology of food organs; 6. Processing technology of blood; 7. Using of by-products of slaughter in pharmaceutical industry; 8.Technology of tubing processing; 9.Processing of the skin in slaughterhouse ; 10. Conservation of the skin in slaughterhouse; 11. Production of gelatin from the skin 1; 2. Production of gelatin from the bones and production of the glue B) Content of the Practices: 1. Introduction; 2.Composition of animal fats; 3. Raw material for production of food animal fats; 4.Technology of production of animal fatsТехнологија; 5.Technology of food organs; 6. Processing technology of blood; 7. Using of by-products of slaughter in pharmaceutical industry; 8.Technology of tubing processing; 9.Processing of the skin in slaughterhouse ; 10. Conservation of the skin in slaughterhouse; 11. Production of gelatin from the skin 1; 2. Production of gelatin from the bones and production of the glue			
12.	Methods of studying: lectures and practices, consultations, seminar, study home, preparation for exams and mid-term tests			
13.	Total available time	120 classes		
14.	Distribution of the available time	2+1+1		
15.	Forms of teaching activities	15.1.	Lectures- Theoretical lectures	2 class per week
		15.2.	Practices, seminars, team work	1 class per week
16.	Other forms of activities	16.1.	Projects exercises	
		16.2.	Independent exercises	1 class per week
		16.3.	Study home	-
17.	Forms for assessment			
	17.1.	Tests, 2 mid-term tests x 20		40 points

	17.2	Activity and participation 10 lectures 10 practices	20 points
	17.3.	Seminar work/ project (presentation: written and oral)	10 points
	17.4.	Final exam	30 points
18.	Criteria for assessment (points/ grade)	from 50 points	5 (five) F
		from 51 till 60 points	6 (six) E
		from 61 till 70 points	7 (seven) D
		from 71 till 80 points	8 (eight) C
		from 81till 90 points	9 (nine) B
		from 91 till 100 points	10 (ten) A
19.	Condition for getting a signature and taking the final exam	60% success of all activities before exam 42 points from two colloquium, seminar work, regularity on lecture and practices	
20.	Language in which classes are conducted	Macedonian language	
21.	Method of monitoring the quality of instruction	Self evaluation; Periodical tests for students; survey	

22.	Literature				
22.1.	Compulsory literature				
	Ordinal Number	Author	Title	Publisher	Year
	1.	Aleksandar Ognenovic, Karan Guric Sonja, Radomir Radosavljevic, Vladimir Peric	Tehnology of by-products of meat	University of Belgrade Faculty of Agriculture	1985
	2.				
22.2.	Additional literature				
	Ordinal Number	Author	Title	Publisher	Year
	1.				
	2.				
	3.				

Appendix No.3	Study programme for first cycle of studies	
1.	Title of the course	PRACTICAL WORK IN PROCESSING INDUSTRY
2.	Code	ZZF121412
3.	Study programme	Cultivation of animal products

4.	Organizer of study programme (unit, institute, department,)	Faculty of Agriculture, Department of food technology and processing of animal products				
5.	Level (first, second, third cycle)	First cycle				
6.	Academic year / semester	Forth year/seven semester	7.	Forth year/seven semester	4	
8.	Professor	Prof. Dr. Aco Kuzelov				
9.	Preconditions for enrolment	/				
10.	Goals of the study programme: Introduction of the students with practical work in processing industry and their incorporation in production processes in food industry					
11.	Content of the study programme: A) Content of lectures: 1 Transport livestock from farm to slaughterhouse 2. Livestock depot. 3. Pig slaughter line 4. Cattle slaughter line 5. Transportation of pig and beef halves in the refrigerator 6. Separating the bones from the meat of pig and beef halves 7. Cutting meat brincer 8. Salting and curing meat 9. Charge sausages, milk cans and finished dishes 10. Control acceptance in dairy products. 11. Milk pasteurization 12. Cheese production					
12.	Methods for studying: Official visit of processing factories and incorporation of the students in production processes of animal products.					
13.	Total available time	120 classes				
14.	Distribution of the available time	2+1+1				
15.	Forms of teaching activities	15.1.	Lectures- Theoretical lectures	2 class per week		
		15.2.	Practices, seminars, team work	1 class per week		
16.	Other forms of activities	16.1.	Projects exercises			
		16.2.	Independent exercises	1 class per week		
		16.3.	Study home	-		
17.	Criteria for assessment					
	17.1.	Tests, 2 mid-term tests x 20			40 points	
	17.2	Activity and participation 10 lectures 10 practices			20 points	
	17.3.	Seminar work/ project (presentation: written and oral)			10 points	
	17.4.	Final exam			30 points	
18.				from 50 points	5 (five)	F

	Criteria for assessment (points/grade)	from 51 till 60 points	6 (six)	E
		from 61 till 70 points	7 (seven)	D
		from 71 till 80 points	8 (eight)	C
		from 81 till 90 points	9 (nine)	B
		from 91 till 100 points	10 (ten)	A
19.	Condition for getting a signature and taking the final exam	60% success of all activities before exam 42 points from two colloquium, seminar work, regularity on lecture and practices		
20.	Language in which classes are conducted	Macedonian language		
21.	Method of monitoring the quality of instruction	Self evaluation; Periodical tests for students; survey		

22.	Literature					
	22.1.	Compulsory literature				
		Ordinal Number	Author	Title	Publisher	Year
		1.				
		2.				
	22.2.	Additional literature				
		Ordinal Number	Author	Title	Publisher	Year
		1.				
		2.				
3.						

Appendix No.3		Syllabus for the first, second and third cycle of study			
1.	Course title	CONTROL OF ANIMAL PRODUCTS			
2.	Course code	2ZF121312			
3.	Study programme:	Oenology			
4.	Organizer of the study programme (faculty, institute, group)	University "Goce Delčev"- Štip, Faculty of Agriculture			
5.	Level of study (first, second, third cycle)	First cycle			
6.	Academic year / semester	Fourth year/seventh semester	7.	Number of ECTS credits	4
8.	Professor	Ass. Prof. Violeta Ivanova-Petropulos PhD			
9.	Preconditions for course enrollment	/			

10.	Goals of the course programme: Acquiring knowledge about the chemical and microbiological methods for control of different compounds and microorganisms in food from animal origin.			
11.	<p>Content of the course programme:</p> <p>A) Content of lectures: 1. Introduction; 2. Characteristics of the principal quality factors; 3. Concept for quality control, standards, measurements; 4. Sampling meat and meat products for analysis; 5. Sampling milk and milk products for analysis; 6. Determination of water in food, chemical and physical methods, determination of mineral compounds; 7. Properties of carbohydrates. Chemical methods for determination of carbohydrates in food; 8. Properties of lipids. Methods for determination of lipids; 9. Proteins, properties. Methods for determination of proteins; 10. Instrumental methods for analysis of main compounds in food - HPLC, GC and AAS; 11. Microbiological analysis of animal products; 12. Sensory analysis of animal products.</p> <p>B) Content of exercises: 1. Introduction in food analysis; 2. Determination of moisture content and total mineral substances in food with drying methods; 3. <i>Polarimetric</i> determination of carbohydrates in food; 4. Determination of total lipids content in food with extraction method; 5. Determination of food proteins with Kjeldahl method; 6. Application of liquid chromatography for determination of polyphenolics in food; 7. Qualitative bacterial examination of animal products; 8. Quantitative bacterial examination of animal products; 9. Sensory analysis; 10. Conditions for sensory analysis; 11. Methods for sensory analysis; 12. Panel test.</p>			
12.	Methods of study: Lectures and laboratory exercises, consultations, individual and team projects; e-learning.			
13.	Total amount of available time	120		
14.	Distribution of the available time	2+1+1		
15.	Forms of teaching activities	15.1.	Lectures - theoretical training	2
		15.2.	Practice (laboratory, auditory), workshops, outreach and teamwork	1
16.	Other forms of activities	16.1.	Team projects	0.5
		16.2.	Individual projects	0.5
		16.3.	Individual study	-
17.	Forms of assessment			
	17.1.	Exams (mid-term exams, exam, electronic testing)		70
	17.2	Project activities (oral and written presentation)		10
	17.3.	Other forms of studying activities		20
18.	Criteria for assessment (points / grade)	to 50 points	5 (five)	(F)
		from 51 to 60 points	6 (six)	(E)

		from 61 to 70 points	7 (seven)	(D)
		from 71 to 80 points	8 (eight)	(C)
		from 81 to 90 points	9 (nine)	(B)
		from 91 to 100 points	10 (ten)	(A)
19.	Condition for getting a signature and taking the final exam	/ 60% of term activities or minimum 42 points from 2 mid-term exams, project activities and attending to lectures and discussions		
20.	Language in which classes are conducted	Macedonian		
21.	Method of monitoring the quality of instruction	Self-evaluation		

22.	Literature				
	Compulsory literature				
	Ordinal number	Author	Title	Publisher	Year
22.1.	1.	Rubin Gulaboski	Control of animal products (no reviewed script)	UGD - Štip	2010
	2.	Semih Otles	Handbook of Food Analysis Instruments	Taylor & Francis	2008
	Additional literature				
	Ordinal number	Author	Title	Publisher	Year
22.2.	1.	Borislav Ginleski	Meat and meat products (workshop)	Ss Cyril and Methodius University	1985
	2.	M. Karic, C. Milanovik, D. Vukela	Standard methods for analysis of milk and milk products	Faculty of Technology, Novi Sad	2005
	3.				

Appendix No.3		Syllabus for the first, second and third cycle of study
1.	Course title	Additives and spices
2.	Course code	2ZF121612
3.	Study programme:	The processing of animal products, four year study
4.	Organizer of the study programme (faculty, institute, group)	Faculty of Agriculture, Department of Food Technology and processing of animal products
5.	Level of study (first, second, third cycle)	First cycle

6.	Academic year / semester	Fourth year / seventh semester	7.	Number of ECTS credits	4	
8.	Professor					
9.	Preconditions for course enrollment	No				
10.	Goals of the course programme: Familiarize students with additives and spices that are used in industry for the production of animal products.					
11.	<p>Content of the course programme:</p> <p>A) Content of lectures: 1.Introduction; 2. Technology of production of additives from vegetable origin; 3. Technology of production of additives from animal origin 4. Substances for improvment the taste of the products; 5. Separation, properties and knowledge of vegetable spices; 6. Botanical identity, the form in which they come in turnover, active substances of vegetable spices; 7. Chemical, biological and technological properties of spices; 8. Knowledge of different types of plant spicity; 9. Warehousing and storage of spices; 10. Identification of plants from which extracts are produced ; 11. Microbiology of spices; 12. Fungi of spices.</p> <p>B) Contents of exercises: 1.Introduction; 2. Technology of production of additives from vegetable origin; 3. Technology of production of additives from animal origin 4. Substances for improvment the taste of the products; 5. Separation, properties and knowledge of vegetable spices; 6. Botanical identity, the form in which they come in turnover, active substances of vegetable spices; 7. Chemical, biological and technological properties of spices; 8. Knowledge of different types of plant spicity; 9. Warehousing and storage of spices; 10. Identification of plants from which extracts are produced; 11. Microbiology of spices; 12. Fungi of spices.</p>					
12.	Methods of study: lectures, theoretical and practical exercises, individual projects; learning home; mid-term exams, consultations.					
13.	Total amount of available time	156 hours				
14.	Distribution of the available time	2 +2 +1				
15.	Forms of teaching activities	15.1.	Lectures - theoretical training	2		
		15.2.	Practice (laboratory, auditory), workshops, outreach and teamwork	2		
16.	Other forms of activities	16.1.	Team projects	1		
		16.2.	Individual projects	/		
		16.3.	Individual study	/		
17.	Forms of assessment					
	17.1.	Exams (mid-term exams, exam, electronic testing)			70	
	17.2.	Project activities (oral and written presentation)			10	
	17.3.	Other forms of studying activities			20	
18.	Criteria for assessment (points / grade)	to 50 points		5(five) (F)		
		from 51 to 60 points		6(six) (E)		
		from 61 to 70 points		7(seven) (D)		
		from 71 to 80 points		8(eight) (C)		
		from 81 to 90 points		9(nine) (B)		
		from 91 to 100 points		10(ten) (A)		

19.	Condition for getting a signature and taking the final exam	60% of term activities or minimum 42 points from 2 mid-term exams, project activities and attending to lectures and discussions			
20.	Language in which classes are conducted	Macedonian language			
21.	Method of monitoring the quality of instruction	Self-evaluation, periodic tests for students, Survey.			
22.	Literature				
	Compulsory literature				
	Ordinal number	Author	Title	Publisher	Year
22.1.	1.	Oscar Danon	Spices in the meat processing	Belgrade Faculty of Veterinary	1985
	Additional literature				
	Ordinal number	Author	Title	Publisher	Year
22.2.					

Appendix No.3		Syllabus for the first, second and third cycle of study			
1.	Course title	Meat and meat products			
2.	Course code	2ZF121112			
3.	Study programme:	Modul Processing of animal products, 4 years studies			
4.	Organizer of the study programme (faculty, institute, group)	University "Goce Delcev"- Stip, Faculty of Agriculture			
5.	Level of study (first, second, third cycle)	First cycle			
6.	Academic year / semester	Forth year, VII semester	7.	Number of ECTS credits	8
8.	Professor	Prof. Stevce Presilski PhD			
9.	Preconditions for course enrollment	No			
10.	Goals of the course programme: Familiarize students with manufacturing and meat canning and technology of manufacturing meat products.				
11.	Content of the course programme: A) Content of lectures: 1. Milk and milk products; 2. Anatomy and physiological function of the milk gland; 3. Milk milking equipment and utensils; 4. Milk cooling; 5. Chemical, physical, microbiological, immunological, therapeutic and technological properties of milk; 6. Taking samples and preservation of samples; 7. Determination of total dry matter in the milk; 8. Determination of lactose, protein and fatty substances in the milk; 9. Laboratory methods for determining milk in good condition; 10. Ways of lipids				

	regulation in different milk types ; 11. Choosing a place for manufacturing facilities; 12. Technology of milk products manufacturing. B) Content of exercises: 1. Milk and milk products; 2. Anatomy and physiological function of the milk gland; 3. Milk milking equipment and utensils; 4. Milk cooling; 5. Chemical, physical, microbiological, immunological, therapeutic and technological properties of milk; 6. Taking samples and preservation of samples; 7. Determination of total dry matter in the milk; 8. Determination of lactose, protein and fatty substances in the milk; 9. Laboratory methods for determining milk in good condition; 10. Ways of lipids regulation in different milk types ; 11. Choosing a place for manufacturing facilities; 12. Technology of milk products manufacturing.					
12.	Methods of study: lectures, theoretical and practical exercises, consultations; making independent seminar work; learning home; exam preparatory classes and mid-term tests: consultation					
13.	Total amount of available time		216 hours			
14.	Distribution of the available time		3+2+2			
15.	Forms of teaching activities	15.1.	Lectures - theoretical training	3		
		15.2.	Practice (laboratory, auditory), workshops, outreach and teamwork	2		
16.	Other forms of activities	16.1.	Team projects			
		16.2.	Individual projects	1		
		16.3.	Individual study	1		
17.	Forms of assessment					
	17.1.	Exams (mid-term exams, exam, electronic testing)			70	
	17.2.	Project activities (oral and written presentation)			10	
	17.3.	Other forms of studying activities			20	
18.	Criteria for assessment (points / grade)		to 50 points	5(five) (F)		
			from 51 to 60 points	6(six) (E)		
			from 61 to 70 points	7(seven) (D)		
			from 71 to 80 points	8(eight) (C)		
			from 81 to 90 points	9(nine) (B)		
			from 91 to 100 points	10(ten) (A)		
19.	Condition for getting a signature and taking the final exam		60% of term activities or minimum 42 points from 2 mid-term exams, project activities and attending to lectures and discussions			
20.	Language in which classes are conducted		Macedonian			
21.	Method of monitoring the quality of instruction		Self-evaluation			
22.	Literature					
	22.1.	Compulsory literature				
		Ordinal number	Author	Title	Publisher	Year

		1.	M. Karic, C. Milanovik, D. Vukela	Standard methods for analysis of milk and milk products	Faculty of Technology, Novi Sad	2005
	22.2.	Additional literature				
		Ordinal number	Author	Title	Publisher	Year
22.	Literature					
		Compulsory literature				
		Ordinal number	Author	Title	Publisher	Year
	22.1.	1.	Institute of accreditation of Republic of Macedonia	Quality management systems - Requirements (ISO EN ISO 9001:2008)	IARM	
		2.	Hrvoje Skoko	Quality management	Sinergija, Zagreb, Croatia	2000
		3.	David Hoyle	Quality Systems Handbook (4 th edition)	Butterworth-Heinemann, A member of the Reed Elsevier plc group	2001
		Additional literature				
		Ordinal number	Author	Title	Publisher	Year
	22.2.	1.	Institute of accreditation of Republic of Macedonia	ISO 17025, ISO 27001, ISO 14001, ISO 22000, ISO 18001	IARM	2010
		2.				
		3.				

UNIVERSITY ELECTIVE COURSES - Fourth year of study

Appendix No.3		Syllabus for the first, second and third cycle of study
1.	Title of the Course	Fundamentals of Tourism
2.	Code	UGD102212
3.	Study Programme	Tourism
4.	Organizer of the study programme (unit or institute, Faculty, department)	University Goce Delcev-Stip Faculty of Tourism and Business Logistics Department of Gevgelija
5.	Cycle (first, second and third cycle)	First cycle

6.	Academic year / semester	I / I	7.	Number of credits	8	
8.	Professor (s)	Ass. Prof. Zlatko Jakovlev, PhD				
9.	Preconditions for course enrollment	Enrolled in first year studies				
10.	Goals of the study programme: The objectives are scientific and practical, scientific refers to the acquisition of theoretical knowledge of students about the basics of tourism, and the practical application of scientific knowledge in the hospitality practice.					
11.	Content of the course programme: Introduction Theoretical and methodological approach to the study of tourism(subject, tasks, goals and methods of tourism studies) Aspects of the scientific study of tourism Theoretical understanding of the concept of tourism Practical importance of defining tourism Tourism and analog appear Socio-economic conditionality tourism Theoretical views on the emergence of tourism Tourist need Factors of tourism 1. Tourism functions 2. Tourism values 3. Tourist destination 4. Tourist attractions and activities 5. Types of tourism 6. Tourist regulation 7. Tourist differential 8. Tourist futurology					
12.	Teaching methods: Lectures, tutorials and laboratory exercises					
13.	Total available time	216 hours				
14.	Distribution of available time	3 + 2 + 2 / per week				
15.	Forms of teaching / learning activities	15.1.	lectures / theoretical - contact teaching, e-teaching	3 hours		
		15.2.	theoretical and practical exercises, e-exams, preparation of independent seminar work	2 hours		
16.	Other forms of activities	16.1.	Project tasks	1 hours		
		16.2.	Individual tasks	1 hours		
		16.3.	Home learning	1 hours		
17.	Forms of assessment					
	17.1.	Tests / oral exams			0-20 points	
	17.2.	Seminars (paper / project - presentation: written and/or oral)			10 points	

	17.3.	Activity and participation	20 points	
18.	Criteria for Assessment (points / grade)	up 50 points	5	(five) (F)
		51 to 60 points	6	(six) (E)
		61 to 70 points	7	(seven) (D)
		71 to 80 points	8	(eight) (C)
		81 to 90 points	9	(nine) (B)
		91 to 100 points	10	(ten) (A)
19.	Condition for getting a signature and taking the final exam	60% success from all activities before exam i.e 42 points from two mid-term tests, seminar attendance of lectures and exercises		
20.	Language in which the studies are conducted	Macedonian language		
21.	Method of monitoring the quality of teaching	Self-evaluation		

Appendix No.3		Subject programme from first cycle studies			
1.	Course title	BIOLOGY			
2.	Course code	UGD102512			
3.	Study programme:	University elective subject			
4.	Organizers of the study programme (faculty, institute, group)	Faculty of Agriculture Department of Plant Protection			
5.	Level of study (first, second, third cycle)	First cycle			
6.	Academic year / semester	Second / forth Third / sixth	7.	Number of ECTS credits	6
8.	Professor	Ass. prof. Liljana Koleva Gudeva, PhD			
9.	Preconditions for course enrollment	No			
10.	Goals of the course programme: Gaining fundamental knowledge in biology which is necessary for understanding life and life processes. Gaining of wide knowledge about the living organisms, cell structure, biological systems, as well as understanding of reproduction. Development of proper attitude to the each own health and health of other humans. Understanding of principles of inheritance. Implementation of gained knowledge.				
11.	Content of the course programme: 1. Biology as science of living organisms 2. The cell and cell structural elements 3. Nucleic acids 4. Cell cycle				

	5. Reproduction 6. Basics of genetics 7. Plant cytology 8. Classification of basic types of animal tissues 9. Plant tissues 10. Anatomy, morphology and physiology of plants 11. Anatomy and physiology of animals 12. Phylogenic and taxonomy of life organisms				
12.	Methods of study: research work; work in small groups; individual learning; practical classes; project work; discussion; debate; individual tasks				
13.	Total amount of available time		156 hours		
14.	Distribution of the available time		2 +2 +1		
15.	Forms of teaching activities	15.1.	Lectures - theoretical training	2 hours/week	
		15.2.	Practice (laboratory, auditory), workshops, outreach and teamwork	2 hours/week	
16.	Other forms of activities	16.1.	Team projects	-	
		16.2.	Individual projects	1 hour/week	
		16.3.	Individual study	-	
17.	Forms of assessment				
	17.1.	Exams (mid-term exams, exam, electronic testing)			70
	17.2.	Project activities (oral and written presentation)			10
	17.3.	Other forms of studying activities			20
18.	Criteria for assessment (points / grade)		to 50 points	5 (five) (F)	
			from 51 to 60 points	6 (six) (E)	
			from 61 to 70 points	7 (seven) (D)	
			from 71 to 80 points	8 (eight) (C)	
			from 81 to 90 points	9 (nine) (B)	
			from 91 to 100 points	10 (ten) (A)	
19.	Condition for getting a signature and taking the final exam		/ 60% of term activities or minimum 42 points from 2 mid-term exams, project activities and attending to lectures and discussions		
20.	Language in which classes are conducted		Macedonian		
21.	Method of monitoring the quality of instruction		Self-evaluation		
22.	Literature				
		Compulsory literature			
	22.1.	Ordinal number	Author	Title	Publisher

		1.	Ass. Prof. Liljana Koleva Gudeva	Cell biology	Authorized lessons	2009
		2.	Ass. Prof. Liljana Koleva Gudeva	Plant Physiology	GDU - Stip	2010
	22.2.	Additional literature				
		Ordinal number	Author	Title	Publisher	Year
		1.	Prof. Jordanka Dimova	Phisiology	UKIM - Skopje	2000

Appendix No.3		Subject programme from the first, second and third cycle studies				
1.	Title of the subject	NATIONAL HISTORY				
2.	Code	UGD102112				
3.	Stady programme	First cycle / University elective course				
4.	Organizer of the study programme (unit or institute, department, department)	History and archeology				
5.	Level of study (first, second, third cycle)	First cycle				
6.	Academic year / semester	1/2	7.	Number of ECTS credits	5	
8.	Professor	Prof. Kiril Cackov, PhD				
9.	Preconditions for course enrollment	Subscribed 2 semester				
10.	<ul style="list-style-type: none"> - Goals for the course programme: - Students to gain a thorough knowledge of history; - For students to develop critical thinking as a basis for scientific interpretation of human society; - Formation - education as the highest human value; - Training of young researchers and promoting multiculturalism in the Republic. Macedonia - Formation of aesthetic, patriotic and moral values and develop a sense of belonging to their country; - Study of the contents of important historical phenomena, processes and moments from antiquity to the independence of the Republic of Macedonia .. 					
11.	Content of the course programme: Subject of history, historiography and auxiliary sciences Creating Ancient Macedonian state Culture and religion of Ancient Macedonia Settlement of the Slavs in the Balkans and in Macedonia The spread of Christianity and literature in Macedonian Slavs Bogomil Movement Byzantine rule in Macedonia Macedonian liberation wars against the Byzantine Empire Independent rulers Average Falling Macedonia under Serbian rule Macedonia under Ottoman rule Resistance against Turkish rule in Macedonia (Mariovo rebellion and insurrection					

	<p>Skanderbeg)</p> <p>Cultural, educational and religious life of the population in Macedonia</p> <p>Liberation wars in the second half of the 19th century</p> <p>Foreign propaganda and the consequences of their actions</p> <p>Macedonia during the eastern crisis</p> <p>The emergence and growth of the Macedonian national revolutionary movement</p> <p>Liberation movement of the late 19th century</p> <p>Ilinden Uprising in Macedonia in 1903</p> <p>Consequences of the Ilinden Uprising</p> <p>Macedonia after the Ilinden Uprising</p> <p>Continuation of revolutionary activity and the outbreak of the Young Turk revolution in the 19th and 20th century</p> <p>Cultural and national development in the 19th and 20th century</p> <p>Macedonia during the Balkan Wars of 1912/13</p> <p>First Macedonia during the First World War 1914-1918</p> <p>Second Macedonia in the period between the two World Wars in the Kingdom of SHS and the Kingdom of Yugoslavia</p> <p>Third Second World War and the Anti-Fascist War in Macedonia 1941-1943</p> <p>Anti-Fascist War 1944-1945</p> <p>Historical significance of the Anti</p> <p>Macedonia after the Second World War 1944-1953</p> <p>Macedonia in the period 1953-1991</p> <p>Restoration Ohrid arheiposkopija as Macedonian Orthodox Church</p> <p>The collapse of the Yugoslav federation and the independence of Macedonia in 1991</p>			
12.	<p>Methods of study::</p> <p>Oral Power Point presentation</p> <ul style="list-style-type: none"> • Lectures • Presentations • Seminars on topics of extra-curricular content • Analysis of text / film / theater / literary works and so on. • Debate and discussion • Analysis of the philosophical problems / problematic learning • Individual assignments (homework, individual presentations, etc.). <p>Own research (internet, bibliography, library, media, etc.)..</p>			
13.	Total available time - 152			
14.	Distribution of the available time 2+2+1			
15.	Forms of teaching activities	15.1	Lectures - theory	2 hours
		15.2	Exercises (laboratory auditoriski), seminars, teamwork	2 hours
16.	Other forms of activities	16.1	Project tasks	hours
		16.2	independent tasks	1 hour
		16.3	Home learning	hours
17.	Forms of assessment	Combined (currently writing and oral final exam)		
	17.1	tests	credits 40	

	17.2	Seminar paper / project (presentation: written and oral)	credits 10		
	17.3	Activity and participation	credits 20		
18.	Criteria for assessment (points/ grade)	from 50 stitch	5 (five) (F)		
		From 51 to 60	6 (six) (E)		
		from 61 to 70	7 (seven) (D)		
		from 71 to 80	8 (eight) (C)		
		од 81 до 90	9 (nine) (B)		
		From 91 to 100	10 (ten) (A)		
19.	Condition for getting a signature and taking the final exam	Minimum of 42 points from current activities			
20.	Language in which classes are conducted	macedonian			
21.	Method of monitoring the quality of teaching	Supporting student self-evaluation and evaluation			
22.	Literature				
	22.1	Compulsory literature			
	.	Author	Title	Publisher	Year
	1.		Историја на Македонскиот народ, т. 1-3,	Институт за национална историј	1969,1998,199,2002
	2.	- д-р Александар Стојановски. д-р Иван Кантарциев, д-р Данчо Зогравски, д-р Михаило Апостолски	Историја на Македонскиот народ		1988
3.	Велјановски, Н.	Македонија 1945-1991- пат до независноста	ИНИ	2002	
22.2	Additional literature				