


Ministry of Education and Science of Ukraine
Sumy National Agrarian University
Faculty of Veterinary Medicine
Department of Veterinary Examination, Microbiology, Zoohygiene and Safety and
Quality of Livestock Products

MODULE SYLLABUS

Quality and safety of agro-industrial products (optional)
Implemented within the educational program 211 VETERINARY MEDICINE
in specialty **211 VETERINARY MEDICINE**

Level of higher education: the second master's level of higher education

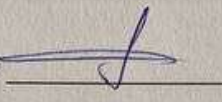
Sumy— 2022

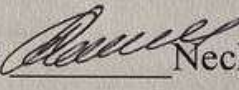
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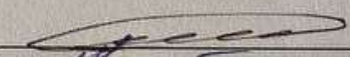

Fotina H.A., doctor of vet. science, Professor

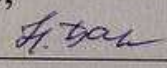
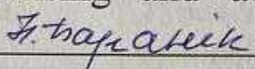
Module syllabus agreed at the Veterinary Examination, Microbiology, Zoohygiene and Safety and Quality of Livestock Products Department meeting	protocol dated 13.06.2022 № 11
	The Head of Chair T.I. Fotina

Agreed:

Guarantor of the educational program  Ulko L.G.

Dean of the faculty,
where educational programs implemented  Nechiporenko O.L.

Syllabus review (attached) is provided by:  (Petrov R.V.)
 (Gladyshevskiy B.)

Representative of the Department of Education Quality assurance,
licensing and accreditation 
()

Registered in electronic data base 24.06. 2022

Syllabus review data:

The academic year in which changes are made	The Academic program attachment number with changes description	Changes revised and approved		
		Minutes No and date of the department meeting	Head of Department	Guarantor of the Academic program

1. MODULE OVERVIEW

	Name OK	Quality and safety of agro-industrial products			
2.	Faculty / department	Faculty of Veterinary Medicine. Department of Veterinary Examination, Microbiology, Zoohygiene and Safety and Quality of Livestock Products			
3.	Type (compulsory or optional)	optional			
4.	Program(s) to which module is attached (to be filled in for compulsory types)	Veterinary medicine 211			
5.	Module can be suggested for (to be filled in for optional types)	Veterinary medicine 211 The second master's level of higher education			
6.	Level of the National Qualifications Framework	6			
7.	Semester and duration of study	8th semester, 18 weeks			
8.	ECTS credits number	5			
9.	Total workload and time allotment	Contact work (classes)			Individual work
		Lectures	Practical / seminar	Laboratory	
10.	8 semester	4		12	104
11.	Language of	English			

	instruction	
12.	Module leader	Fotina Anna Anatoliyivna
1 1.1	Contact Information	Sumy NAU, Faculty of Veterinary Medicine, Department of Veterinary Examination, Microbiology, Zoohygiene and Safety and Quality of Livestock Products. Room. 2 a super.annafotina @ ukr .net
13.	General description of the educational component	provides the study of regulations on the safety and quality of food of animal and plant origin; sources of pollution of the environment, food and food raw materials by nitrates, radionuclides, pesticides, heavy metals, antibiotics, hormones, preservatives, etc .; measures to reduce food contamination during production, storage, processing, preparation for consumption; methods for assessing the quality and safety of food.
14.	The purpose of the educational component	formation of future specialists with deep theoretical knowledge about the quality and safety of products of animal origin, the role of microorganisms in various processes of processing and storage of raw meat, as well as gaining practical skills in indicating and identifying microorganisms that affect the quality and safety of meat and meat clear products. formation of future specialists with deep theoretical knowledge about feed quality and safety , the role of microorganisms in various processes of feed processing and storage , as well as gaining practical skills of indication and identification of microorganisms that affect the quality and safety of feed and feed additives.
15.	Prerequisites for studying OK, the relationship with other educational components of OP	1. The educational component is based on such OK as "Animal Genetics and Breeding", "Bioethics, Biosafety, Biosecurity and Ecology", "Normal and Pathological Physiology of Animals". 2. The educational component is the basis for such OK as " Veterinary hygiene and sanitation of animals ", "Clinical and laboratory diagnosis of animal diseases", "Organization and economics of veterinary affairs", " Veterinary international and national legislation". 3. The main component is incompatible (does not have)
16.	The policy of academic integrity	<ul style="list-style-type: none"> • attending classes. In case of skipping classes without good reason, the student must hand over to the teacher thematic situational tasks, • access to higher education for people with special needs. Applicants for higher education with special needs must inform the teacher of the discipline in advance. At the request of the survey, the acceptance of tests and presentations is carried out individually, in the time allotted for consultations (according to this syllabus), in the laboratory or online; • academic activity. Answers to situational tasks and questions of the thematic survey depend on the level of knowledge of the student and are carried out at his request.

laboratory classes. The use of a mobile phone, tablet or other mobile devices during the lesson (except as provided in the curriculum and guidelines of the teacher) is prohibited.

Prevention of academic plagiarism. Write-offs and plagiarism are not allowed; in case of dishonesty the work is not credited. Plagiarism check algorithm systems are also tools for counteracting violations of academic integrity. In case of violations, the response is in accordance with the regulations on the academic integrity of participants in the educational process in Sumy NAU (<https://snau.edu.ua/viddil-zabezpechennya-yakosti-osviti/zabezpechennya-yakosti-osviti/akademichna-dobrochesnist/>). If a violation of academic integrity is detected, the completed task is not credited and is sent for re-execution.

Formation of skills of academic writing and thinking. Recommendations for making presentations. The tasks of independent work provided by the program must be completed in a timely manner, with correct reference to sources of information. During the preparation it is necessary to study the basic and reference literature, which will help to create a logical, meaningful report when presenting the presentation and competently answer the questions of classmates and the teacher. Under certain circumstances (skipping classes for good reasons, the introduction of distance learning, etc.) the student can send a presentation for assessment individually to the e-mail address specified in this syllabus.

2. CORRELATION BETWEEN MODULE LEARNING OUTCOMES (MLOs) AND PROGRAM LEARNING OUTCOMES (PLOs)

8th semester

MLOs: On successful completion of the module the learner will be able to:	Program learning outcomes to be achieved by the OK (indicate the number according to the numbering given in the OP)						How assessed
	P L O 1	PL Os 2	PL Os 3	PL Os 4	P L O 5	PL Os 6	
MLO 1. The value of the analysis of the risks of agricultural products.	+		+			+	survey of theoretical issues, performing tasks in laboratory and practical classes, testing, performing tasks of independent work
MLO2. Classification of risks. Methods of food risk analysis. Dangerous factors of food		+	+			+	survey of theoretical issues, performing tasks

products of biological and physical origin. . Estimation of the content of chemical contaminants in food products.							in laboratory and practical classes, testing, performing tasks of independent work
MLO 3. The main provisions, legal and organizational principles of legal documents on safety and certain indicators of agricultural product quality. Food. Quality requirements.	+	+			+		survey of theoretical issues, performing tasks in laboratory and practical classes, testing, performing tasks of independent work
MLO 4. Requirements for state control at the border inspection post. Compliance with hygienic requirements at the facilities .		+		+			survey of theoretical issues, performing tasks in laboratory and practical classes, testing, performing tasks of independent work
MLO 5. Ensuring food safety at food industry enterprises.	+	+		+			survey of theoretical issues, performing tasks in laboratory and practical classes, testing, performing tasks of independent work
MLO 6. The system HACCP, WACCP, TACCP. GMP .		+		+	+		survey of theoretical issues, performing tasks in laboratory and practical classes, testing, performing tasks of independent work

3. MODULE INDICATIVE CONTENT

Topics	Distribution of hours			Learning resources
	Directed study		Self-directed study	
	Lectures	pr	lab	Learning

					resources)
Topic 1 Introduction to the discipline. Significance of food risk analysis. Definition of "quality" and "safety". Structure, factors, factors regarding the quality and safety of food.	2			10	1,7,8.
Topic 2. Risk classification. Methods of food risk analysis. Three categories of risks: physical, chemical and biological. Classification and analysis of hazardous factors in food production.			2	20	2, 3,8.
Topic 3. Contamination of food with radionuclides, nitrates, nitrites, heavy metals, pesticides. Antibiotic resistance and food: challenges and solutions.			2	20	4, 5, 12.
Topic 4. Mycotoxins, antibiotics and hormonal drugs in products of animal and plant origin.			2	14	5, 6,13.
Topic 5. Food. Quality requirements. Degrees of food quality. Ways of getting harmful substances into food. Dangerous factors of food products of biological origin. Dangerous factors of food products of physical origin. Food allergens.	2			10	1, 4, 7, 9.
Topic 6. Veterinary requirements for food imports into Ukraine. List of products subject to state control at designated border inspection posts. International organizations in the concept of "One Health"			2	10	6,7,2.
Topic 7. Food handling. Requirements for personal hygiene of employees, quality of water supply and water system, control over food hazards. Control measures at food industry enterprises. Management in the food industry			2	10	
Topic 8. System of analysis of risks and critical points of HACCP. WACCP system, TACCP. GMP			2	10	8, 1,7,10.
Total 120	4		12	104	

4. METHODS OF TEACHING AND TEACHING

MLOs	Teaching methods (directed study)	Learning methods (self-directed study)	Hours
MLO1. The value of risk analysis of agricultural products.	Methods of teaching by source of knowledge: <i>Verbal:</i> story, explanation, conversation (heuristic and reproductive), lecture, instruction. <i>Visual:</i> demon	Methods of teaching by source of knowledge: <i>Verbal:</i> work with a book (reading, translation, writing, taking notes, making tables, graphs, reference notes), <i>Visual:</i> observation. Teaching methods by the nature of the logic of cognition (analytical, <i>synthesis methods</i> , and <i>inductive method</i> , <i>deductive method</i> , <i>translational method</i>).	12

	<p>stration, illustration, observation.</p> <p>Active methods: (use of technical teaching aids, use of training and control tests)</p> <p>Interactive teaching methods: (use of multimedia technologies.</p>	<p>Active methods (brainstorming, crossword puzzles, debates, round tables, binary classes, business and role-playing games, group research).</p> <p>Interactive learning technologies (use of multimedia technologies, dialogue learning, student cooperation (cooperation)</p>	
<p>MLO 2. Classification of risks. Methods of food risk analysis. Dangerous factors of food products of biological and physical origin. . Evaluation of the content of chemical contaminants in food.</p>	<p>Methods of teaching by source of knowledge: <i>Verbal:</i> story, explanation, conversation (heuristic and reproductive), lecture, instruction. <i>Visual:</i> demonstration, illustration, observation.</p> <p>Active methods: (use of technical teaching aids, use of training and control tests)</p> <p>Interactive methods will present : (use of multimedia technologies.</p>	<p>Methods of teaching by source of knowledge: <i>Verbal:</i> work with a book (reading, translation, writing, taking notes, making tables, graphs, reference notes), <i>Visual:</i> observation.</p> <p>Teaching methods by the nature of the logic of cognition (analytical, <i>synthesis methods</i>, and <i>inductive method, deductive method, translational method</i>).</p> <p>Active methods (brainstorming, crossword puzzles, debates, round tables, binary classes, business and role-playing games, group research).</p> <p>Interactive technologies teaching (use of multimedia technology, learning dialogue, cooperation of students (cooperation).</p>	60
<p>MLO 3 The main provisions, legal and organizational principles of legal documents on safety and certain indicators of</p>	<p>Methods of teaching by source of knowledge: <i>Verbal:</i> story,</p>	<p>Methods of teaching by source of knowledge: <i>Verbal:</i> work with a book (reading, translation, writing, taking notes, making tables,</p>	14

<p>agricultural product quality. Food. Quality requirements.</p>	<p>explanation, conversation (heuristic and reproductive), lecture, instruction. <i>Visual:</i> demonstration, illustration, observation. Active methods: (use of technical teaching aids, use of training .</p>	<p>graphs, reference notes), <i>Visual:</i> observation. Teaching methods by the nature of the logic of cognition (analytical, <i>synthesis methods</i>, and <i>inductive method, deductive method, translational method</i>). Active methods (brainstorming, crossword puzzles, debates, round tables, binary classes, business and role-playing games, group research). Interactive technologies teaching</p>	
<p>MLO 4. Requirements for state control at the border inspection post. Compliance with hygienic requirements at the facilities.</p>	<p>Methods of teaching by source of knowledge: <i>Verbal:</i> story, explanation, conversation (heuristic and reproductive), lecture, instruction. <i>Visual:</i> demonstration, illustration, observation. Active methods: (use of technical teaching aids, use of training and control tests) Interactive methods will present ing : (ie use of multimedia technologies, spreadsheets.</p>	<p>Methods of teaching by source of knowledge: <i>Verbal:</i> work with a book (reading, translation, writing, taking notes, making tables, graphs, reference notes), <i>Visual:</i> observation. Teaching methods by the nature of the logic of cognition (analytical, <i>synthesis methods</i>, and <i>inductive method, deductive method, translational method</i>). Active methods (brainstorming, crossword puzzles, debates, round tables, binary classes, business and role-playing games, group research). Interactive technologies teaching (use of multimedia technology, learning dialogue, cooperation</p>	<p>12</p>

<p>MLO 5. Ensuring food safety at food industry enterprises</p>	<p>Methods of teaching by source of knowledge: <i>Verbal:</i> story, explanation, conversation (heuristic and reproductive), lecture, instruction. <i>Visual:</i> demonstration, illustration, observation. Active methods: (use of technical teaching aids, use of training and control tests) Interactive methods will present ting : (use of multimedia technologies).</p>	<p>Methods of teaching by source of knowledge: <i>Verbal:</i> work with a book (reading, translation, writing, taking notes, making tables, graphs, reference notes), <i>Visual:</i> observation. Teaching methods by the nature of the logic of cognition (analytical, <i>synthesis methods</i>, and <i>inductive method</i>, <i>deductive method</i>, <i>translational method</i>). Active methods (brainstorming, crossword puzzles, debates, round tables, binary classes, business and role-playing games, group research). Interactive technologies teaching (use of multimedia technology,</p>	<p>12</p>
<p>MLO 6. The system HACCP, WACCP, T ACCP. GMP .</p>	<p>Methods of teaching by source of knowledge: <i>Verbal:</i> story, explanation, conversation (heuristic and reproductive), lecture, instruction. <i>Visual:</i> demonstration, illustration, observation. Active methods: (use of technical teaching aids, use of training and</p>	<p>Methods of teaching by source of knowledge: <i>Verbal:</i> work with a book (reading, translation, writing, taking notes, making tables, graphs, reference notes), <i>Visual:</i> observation. Teaching methods by the nature of the logic of cognition (analytical, <i>synthesis methods</i>, and <i>inductive method</i>, <i>deductive method</i>, <i>translational method</i>). Active methods (brainstorming, crossword puzzles, debates, round tables, binary classes, business and role-playing games, group research). Interactive technologies teaching (use of multimedia</p>	<p>12</p>

	control tests) Interactive methods will present ting : (ie use of multimedia technologies, spreadsheets.	technology, learning dialogue, cooperation of students (cooperation)		
MLO 7. The system HACCP, WACCP, TACCP. GMP .	Methods of teaching by source of knowledge: <i>Verbal:</i> story, explanation, conversation (heuristic and reproductive), lecture, instruction. <i>Visual:</i> demonstration, illustration, observation. Active methods: (use of technical teaching aids, use of training.	Methods of teaching by source of knowledge: <i>Verbal:</i> work with a book (reading, translation, writing, taking notes, making tables, graphs, reference notes), <i>Visual:</i> observation. Teaching methods by the nature of the logic of cognition (analytical, <i>synthesis methods</i> , and <i>inductive method, deductive method, translational method</i>). Active methods (brainstorming, solving crosswords, debates, round tables,	5	
MLO 8. Implementing OIE standards.	Methods of teaching by source of knowledge: <i>Verbal:</i> story, explanation, conversation (heuristic and reproductive), lecture, instruction. <i>Visual:</i> demonstration, illustration, observation. Active methods: (use of technical teaching aids, use of training and control tests) Interactive methods will	2	Methods of teaching by source of knowledge: <i>Verbal:</i> work with a book (reading, translation, writing, taking notes, making tables, graphs, reference notes), <i>Visual:</i> observation. Teaching methods by the nature of the logic of cognition (analytical, <i>synthesis methods</i> , and <i>inductive method, deductive method, translational method</i>). Active methods	5

	<p>present ting : (use of multimedia technologies.</p>		<p>(brainstorming, crossword puzzles, debates, round tables, binary classes, business and role-playing games, group research).</p> <p>Interactive technologies teach ting (use of multimedia technology, learning dialogue, cooperation of students (cooperation)</p>	
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5. ASSESSMENT

5.1. Diagnostic assessment

5.2. Summative assessment

5.2.1. Intended learning outcomes methods: 8th semester

No	Summative assessment methods	Grades	Deadline
1.	Thematic survey	20 points / 20 %	Weekly
2.	Execution of tasks in laboratory- practical classes	20 points / 20 %	According to the schedule
3.	Testing	15 points / 15 %	For 7-8 weeks
4.	Report with a presentation on the subject of independent study of the discipline	45 points / 45 %	According to the schedule of delivery of modules

5.2.2. Grading criteria

Summative assessment method	Unsatisfactory	Satisfactorily	Good	Excellent
Thematic survey	<p><12 points</p> <p>The student can play only individual fragments of the course.</p>	<p>12-15 points</p> <p>Most requirements are met, but some components are missing or insufficiently disclosed, there is no analysis of other approaches to the issue</p>	<p>15-18 points</p> <p>All requirements of the task are fulfilled</p>	<p>20 points</p> <p>All requirements of the task are fulfilled, creativity, thoughtfulness is shown, own solution of a problem is offered</p>
Execution	<12 points	12-15 points	15-18 points	20 points

of tasks in laboratory-practical classes	Task requirements not met	Most of the tasks are performed using the basic theoretical principles, the student has difficulty explaining the rules for solving laboratory-practical problems. Execution of individual control tasks is significantly formalized, there is no deep understanding of the work	The student learned the basic material, and understands and performs laboratory-practical tasks and has suggestions for the direction of their solutions. Understands the main provisions that are decisive in the course, can solve similar problems with those discussed with the teacher, but allows a small number of inaccuracies	Competitor realism is a theoretical ground material discipline in carrying laboratory work, able to analyze and correlate the results obtained from the discipline acquired knowledge, skills, practical skills
Multiple choice test	≤ 5 points	6-9 points	10-13 points	14-15 points
	The student gives the correct answer to several questions ($\leq 33\%$ of the correct answers).	The student has some knowledge provided in the program of the discipline, has the basic provisions being studied and gives the correct answer to several questions (34-59% of correct answers).	The student is generally well versed in the material, knows the basic provisions of the material, and gives the correct answer to several questions (60-89% of the correct answers).	The student demonstrates complete and solid knowledge of the study material in the amount that corresponds to the program of the discipline, correctly answers the test questions (90-100% of correct answers).
Design and presentation	< 9 points	10 - 19 points	20 - 39 points	40 - 45 points

report independently of the processed material	The student does not have a complete understanding of the material on the discipline. The student is not performed independently is processing material.	Despite the fact that the program of discipline complied by student, but some components are missing, a student worked passively.	Know the basic and provisions with crucial at performing independent work / individual tasks. Errors in the answers are not significant.	All requirements, tasks are fulfilled, creativity, thoughtfulness is shown, own solution of a problem is offered.
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Formative assessment

Formative exercises are designed to enable students to develop particular aspects of their learning, prior to summative assessments. Formative exercises are designed to help students use feedback and self-reflection to manage and develop their learning so that they can see how to improve their work.

No	Formative Assessment elements	Date
8th semester		
1	Oral feedback after studying topics 1 - 3 , 6-8	3 weeks
2	Written feedback after studying topics 4 - 5	8 weeks
3	Written feedback from the teacher while working on laboratory-practical tasks	Within 1 week after execution
4	Oral feedback from the teacher after the story with a presentation on the topic of independent study of the discipline	During classes

6. LEARNING RESOURCES

6.1. Key resources

1. Internal diseases of animals / VI Levchenko , IP Kondrakhin , VV Vlizlo , etc .; For order. VI Levchenko . - Bila Tserkva, 2012. - Part 1. - 528 p
2. Guidelines for quality and safety of goods and servants continue enterprises restaurant business // Order of the Ministry Ekonomi- ki Ukraine on July 22, 2008 № 295
3. Microbiology of meat and meat products (workshop) / Vlasenko VV, Skibitsky VG, Vlasenko IG, Kozlovskaya GV etc. - Vinnytsia, 2010. - 308 p.
4. Meat and meat products. Handbook of questions and answers / Semanyuk VI, Krushelnytsky ZV, Kozak MV, Ostapyuk MP, Ostapiv NM, Shah AE According to the general edition of VI Semanyuk . - Lviv, - 2013. - 742
5. Semanyuk VI, Zakhariy O.Ya. Microbiological studies of environmental objects, food products of animal origin, feed. Methodical recommendations for conducting laboratory classes on the course "Veterinary Microbiology" - Lviv 2014. -54 p.
6. Stepanenko PP Microbiology of milk and dairy products.2013. 500 s.
7. Yatsenko IV Methodical instructions on veterinary and sanitary examination of cheeses / I.V. Yatsenko, NO Yugai , IL Tsivirko , LV Compass. - Kharkiv, 2009. - 30 p.
8. On consumer protection: Law of Ukraine / Verkhovna Rada of Ukraine. - Officer. kind. - K., .2005.
9. On withdrawal from circulation, processing, utilization, destruction or further use of low-quality and dangerous products: Law of Ukraine / Verkhovna Rada of Ukraine. - Officer. kind. - K., 2003.
10. On veterinary medicine: Law of Ukraine / Verkhovna Rada of Ukraine. - Officer. kind. - K., 2006. -109 c.
11. On standards, technical regulations and conformity assessment procedures: Law of Ukraine / Verkhovna Rada of Ukraine. - Officer. kind. - K., 2005.

12. On priority areas of innovation: Law of Ukraine / Verkhovna Rada of Ukraine. - Officer. kind. - K., 2003.
13. Brambell FWR. Report of the technical committee to inquire into the welfare of animals kept under intensive livestock husbandry systems. London, UK: Her Majesty's Stationery Office 2005.

Work program review (syllabus)

Annex 2

Quality and safety of agro-industrial products

The parameter by which the work program (syllabus) of the educational component is evaluated	So	No	Comment
General information about the educational component is sufficient			
The learning outcomes of the educational component correspond to the NQF			
Learning outcomes for the educational component correspond to the stipulated PRN (for compulsory OK)			
Learning outcomes in the educational component provide an opportunity to measure and assess the level of their achievement			
Learning outcomes relate to the competencies of students, not the content of the discipline (contain knowledge, skills, abilities, not topics of the curriculum of the discipline)			
Learning activity (teaching and learning methods) allows students to achieve the expected learning outcomes			
The educational component involves learning through research			
The assessment strategy within the educational component is in line with the policy of the University / faculty			
The provided assessment methods allow to assess the degree of achievement of learning outcomes in the educational component			
The workload of students is adequate to the volume of the educational component			
Recommended learning resources are sufficient to achieve learning outcomes			
The literature is relevant			

Reviewers:

Member of the project group

Lecturer of the department

Fotina H.A.