NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE
Faculty of Veterinary Medicine
Department of Veterinary Hygiene named after Professor A.K. Skorokhodko

"APPROVED"
Dean of the Faculty of Veterinary Medicine,
Professor _____ Mykola TSVILICHOVSKY

"APPROVED"
at the meeting of the Department of Veterinary Hygiene
named after Professor A.K. Skorokhodka
Protocol No 9 of April 11, 2023
Head of department _____ Mariia KUCHERUK

"REVIEWED"
Guarantor of EP "Veterinary medicine"
_____ Nataliia HRUSHANSKA

WORKING PROGRAM OF THE DISCIPLINE

FOOD HYGIENE

Specialty 211 – "Veterinary Medicine"
educational program "Veterinary Medicine"
Faculty of Veterinary Medicine
Developers: PhD in biol sciences, Associate prof. M.A. Galaburda
(position, scientific degree, academic rank)

Kyiv – 2023 p.

1. Description of discipline «Food Hygiene»

Discipline, field of studying, specialty, education and qualification level	
Field of knowlrdge	21 Veterinary
Training direction	211 – «Veterinary Medicine»
Speciality	
Educational and qualification level	Master
Characteristics of discipline	
Specie	Normative
General quantity of hours	120
Quantity of credits ECTS	4
Quantity of modules	4
Course work	+
Form of control	Semester test, exam
Indicators of discipline for full-time and correspondence forms of training	
	full-time form
Year of training	4, 5
Semester	8, 9
Lectures	60 hours
Practical lessons	75 hours
Laboratory lessons	-
Independent work	35 hours
Individual tasks	-
The number of weekly hours for full-time studing student: auditorium 8 semester 9 semester independent work of the student	 5 hours 4 hours

2. The aims and objectives of the discipline

The course "Food Hygiene" is a special cycle discipline in veterinary professionals training. According to the Law of Ukraine "On Veterinary Medicine" primary purpose of teaching is to form in veterinarians knowledge of sanitary measures and clear issues of hygiene testings and safety of food and raw materials of animal origin during their production (private sector, collective farms, etc.), at all stages of processing (meat, dairy, poultry, and fish plants) and during transport, storage and sale, following the implementation of existing veterinary and sanitary measures.

Food hygiene means all conditions and measures necessary to ensure the safety and suitability of food of animal origin from production to consumption. Course content will provide the veterinary students with a general understanding of the basic principles of food safety, to include development and enforcement of laws and regulations impacting food animal processing industries and food consumers (e.g., traceability and ante- and post-mortem inspection and certifi cation requirements); approaches to microbiological and physical foodborne hazard identifi cation, testing and sampling; and foodborne hazard prevention and control.

..**2.1 The purpose** of the program is the acquisition of theoretical and practical knowledge on the food quality and safety, practical skills in conducting testings of the products and to prepare students for independent practical work.

2.2. Objectives of study discipline

Based on the job description of a veterinarian every student should have the following basic knowledge:

- ensure production of safe products only benign for the population and raw materials for industry;
- ruled out poisoning people diseases common to humans and animals (antropozoonozamy), through food and industrial raw materials of animal origin;
- prevent the spread of bacterial, viral, parasitic diseases of farm animals through meat, meat products and waste products of slaughter;
- assist in the improvement of livestock by detecting diseases in animals are slaughtered in slaughterhouses and meat processing enterprises of all forms of ownership.

3. STUDY RESULTS - COMPETENCIES

Competence acquisition:

integral competence (IC):

the ability to solve complex tasks and problems in the field of veterinary medicine, which involves conducting research and/or implementing innovations and is characterized by the uncertainty of conditions and requirements.

general competences (GC):

GC 3. knowledge and understanding of the subject field and profession.

GC 7. Ability to conduct research at the appropriate level.

GC 9. Ability to make informed decisions.

professional (special) competences (SC):

SC 4. The ability to conduct clinical research with the aim of formulating conclusions about the condition of animals or establishing a diagnosis.

SC 7. Ability to organize and conduct laboratory and special diagnostic studies and analyze their results.

SC 8. Ability to plan, organize and implement measures for the treatment of animals of various classes and species suffering from non-contagious, infectious and invasive diseases.

SC 12. Ability to develop and implement measures aimed at protecting the population from diseases common to animals and humans.

SC 13. The ability to develop strategies for the prevention of diseases of various etiologies.

SC 19. Ability to carry out educational activities among industry workers and the population.

SC 20. Ability to organize, implement and control document flow during professional activity.

Program learning outcomes (PLU)

PLU 9. Develop measures aimed at protecting the population from diseases common to animals and humans.

PLU 12. Know the rules and legislative regulations regarding the supervision and control of production, storage, transportation and sale of products of animal and plant origin.

PLU 14. To understand the essence of the processes of production, storage and processing of biological raw materials.

4. STRUCTURE OF DISCIPLINE
«Food Hygiene»

Name of subject	Number of hours						
	тижні	усього	у тому числі				
			Lect	Pract	Lab	Ind	S/w
1	2	3	4	5	6	7	8
Module 1. Introduction. The basic technology, hygiene and veterinary and sanitary examination of milk and diary products							
Introduction. General information about "Veterinary hygiene with the basics of technology and standardization of products of animal origin"			2				
The main provisions of the laws of Ukraine "On Veterinary Medicine" and "On safety and quality of food"							2
Organoleptic and laboratory methods for determining the quality of milk.					4		
The chemical composition and technological properties of milk.			4				
Laboratory tests of milk quality parameters.					2		
Requirements for milk according to National Standard ДСТУ 3662-15					2		
Veterinary and sanitary examination and health assessment of milk in case of deasises and poisoning animals.			4				
Methods of milk fat content determination.					2		
Veterinary requirements for import to Ukraine of milk and dairy products.							2
Sanitary conditions for obtaining high-quality milk at farms.			2				
Determination of acidity and dry matter in milk.					2		
The impact of inhibitors on the quality of milk.							1
Veterinary control of milk quality and dairy products in food markets.			2				
Determination of milk proteins and ketones. Milk temperature treatment determination					2		
EU requirements for milk and dairy products.					1		1
Methods of microbiological investigation of milk.					2		
The main sources of microbial contamination of milk.							2
Determining the total bacterial count in cup.							1

Methods of determining the quality of dairy products and cheeses.					2		
Fundamentals of standardization, quality management and certification.			2				
Methods of butter testing.					2		
Colloquium					2		
Total			16		23		8
Module 2. Veterinary-sanitary examination of products of animal and vegetable origin							
Veterinary and sanitary examination of honey and other bee products..			4				
Laboratory methods for determining the quality of honey.					4		
Additional methods for determining quality and safety of honey.							1
Veterinary hygiene and examination of fish and other aquatic organisms.			4				
Methods for determining the freshness of the fish.					4		
Veterinary requirements for import to Ukraine of food fish and other seafood.							2
Veterinary hygiene and examination of poultry eggs.			2		2		
Veterinary hygiene and examination of some egg products.							1
Veterinary hygiene and examination of plant food					4		
Determination of nitrates in foods of plant origin					2		1
Colloquium					2		
Total			10		18		4
Module 3. Animal slaughter, transportation, technology slaughtering and primary processing. Hygiene and control of slaughter products							
Slaughter animals, transportation and identification of fatness categories			4				
Requirements for the transport of slaughter animals and supporting documents					2		
Veterinary requirements for import of slaughtered animals to Ukraine							1
Premicess for processing of slaughtered animals and veterinary and sanitary demands. Acceptance of slaughtered animals.			4				
Research lymph nodes and carcasses of slaughtered animals					4		
Liarage requierments							1
The basic technology and hygiene of slaughtered animals and poultry processing			2				
Veterinary-sanitary examination of animal fats					4		
Study regulations on the organization of Veterinary food control							2
Organization and Methods veterinary			2				

expertize after slaughter and carcasses of slaughtered animals							
Methods and techniques of research animal carcasses after slaughter.					2		
Veterinary-sanitary examination of offal							2
Colloquium					2		
Total			12		12		6
Module 4. MEAT COMPOSITION AND CHARACTERISTICS							
The morphology, chemical composition and characteristics of meat of different animal species			2				
Determining the species origin of meat					4		
Changes in the meat after slaughter			2				
Definition of meat freshness					2		
Definition of rabbits and poultry meat freshness							2
The basic technology of hygiene and preserving of meat and meat products			4				
Veterinary-sanitary examination of sausages and canned meat					2		
Technology of making sausages, meat, canned products							2
Colloquium					2		
Total			8		8		4
Module 5. Veterinary control of slaughter products in cases of poisoning, toxicosis are intoxication							
Meat post mortem examination of in cases of infectious diseases			6				
Methods for determining the meat from diseased and dead animals					4		
Regulations on organization veterinary control							2
Veterinary-sanitary examination of products of slaughter animals with invasive disease			2				
Veterinary hygiene and exam of animals slaughter products for trichinosis					4		
Veterinary-sanitary examination of rabbits and poultry meat at invasion							1
Veterinary-sanitary examination of products of slaughter animals with non-communicable diseases or poisonings			2				
Veterinary hygiene and exam of animals slaughter products for cysticercosis					2		
The method of meat and meat products decontamination							3
Food borne diseases and its prevention			2				
Methods for determination of toxic substances in meat					2		
Veterinary hygiene and exam of game			2				2
Colloquium					2		
Total			14		14		8
Course work							
Totally hours	120		60		75		30

5.Tests example for control

Question № 1 Depending on age and sex of cattle in the second group are
Bulls (hogs)
Oxes and cows
Heifers and hogs
14 day-old to 3 month-old calfs
Question № 2. Psychrophiles can grow at
–20 to +10ºC
–10 to +30ºC
0 to +50ºC
+30 to +80ºC
Question № 3. The number of lymph nodes in cattle is
600
200
300
500
Question № 4. Water holding (binding) capacity of meat can be determined:
by applying to a surface of meat a filter paper for 2-3 minutes
by palpation
by scab forming
by applying to a fresh cut of meat a filter paper for 2-3 minutes
Question № 5. What is the order of processing technology of bowels?
Fat removing, cleaning from contents, tailing, sorting out;
Sorting out, cleaning from contents, fat removing, tailing;
Tailing, fat removing, cleaning from contents, sorting out;
cleaning from contents, fat removing, sorting out, tailing.

6. Methods of education

Forms and teaching methods - lectures, laboratory classes.

7. Forms of Control

Forms of knowledge control, evaluation system - control of knowledge is made by fulfillment of the laboratory work by the students, presenting of reports, having module tests according to the module- rating system.

Current control of students' knowledge is made on laboratory classes where preliminary control of students' knowledge and skills is conducting. The teacher sets the general problem and discusses it with students, they are solving problems in their discussion. Students are solving control tasks, and the teacher makes verification , evaluation.

Final assessment is conducted to assess learning outcomes at some education (qualification) level or some of its completed stage.

Final control module includes a final evaluation form at the end of logically completed part of lectures and practical exercises and the results counted off for final evaluation.

Semester control is conducted in the form of a semester test (in the 3rd semester) or exam (4th semester) in the amount of educational material and within the deadline set by the curriculum.

1. According to the "Regulations on credit-modular system of training in National university of life and environmental sciences of Ukraine", approved by the university rector on 03.04.2019, ranking students for Academic $\mathbf{R_{НР}}$study concerning certain discipline is given by formula:

$$R_{НР} = \frac{0{,}7 \cdot (R^{(1)}_{ЗМ} \cdot К^{(1)}_{ЗМ} + R^{(2)}_{ЗМ} \cdot К^{(2)}_{ЗМ})}{К_{ДИС}} + R_{ДР} - R_{ШТР},$$

Where$\mathbf{R^{(1)}_{ЗМ}, \ldots R^{(n)}_{ЗМ}}$ **- ratings of modules on a 100-point scale;**

n – number of modules;

$\mathbf{К^{(1)}_{ЗМ}, \ldots К^{(n)}_{ЗМ}}$– number of ECTS credits, workcurriculumprovidedfor the corresponding module;

$\mathbf{К_{ДИС} = К^{(1)}_{ЗМ} + \ldots + К^{(n)}_{ЗМ}}$– number of ECTS credits, provided by a workingcurriculumforcourses in the currentsemester;

$\mathbf{R_{ДР}}$ − ratingofadditionalwork;

$\mathbf{R_{ШТР}}$ – penalty rating.

The formula can be simplified if we take $\mathbf{К^{(1)}_{ЗМ} = \ldots = К^{(n)}_{ЗМ}}$. Then it will look like:

$$R_{НР} = \frac{0{,}7 \cdot (R^{(1)}_{ЗМ} + R^{(2)}_{ЗМ})}{2} + R_{ДР} - R_{ШТР}.$$

The rating of the additional work$\mathbf{R_{ДР}}$ added to the $\mathbf{R_{НР}}$and can not exceed 20 points. It is determined by the lecturer and the students are given the decision of the Department for the execution of work not provided for by the curriculum, but enhance students' knowledge in the discipline.

Penalty rating $\mathbf{R_{ШТР}}$does not exceed 5 points deducted from $\mathbf{R_{НР}}$. It is determined by the lecturer and the decision of the Department administered to students who have learned the material of module on time, do not comply with work schedules, missed classes and more.

2. Pursuant to the above provisions, the preparation and defense of a courseproject (work) measuredat 100 pointscale and thentranslatedinto a scorefor the nationalscale and scale ECTS.

Evaluation rates ECTS

Totalpointsfor all kinds of learningactivities	Evaluation on the national scale	
	For examination, courseproject (work) practices	For credit (test)
90 – 100	perfectly	Accepted
74-89	good	
60-73	satisfactorily	
35-59	Unsatisfactory with the possibility of re-assembly	notacceptedwith the possibility of re-assembly
0-34	Unsatisfactory with the obligatoryre-studyingthe course	notacceptedwith the obligatoryre-studyingthe course

8. Literature

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3. The procedure for sampling and identification of samples for veterinary and sanitary control of food and feed Yakubchak OM, Mezhenskaya NA, Tkachuk SA, Bilyk RI

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