EDUCATIONAL COMPONENT SYLLABUS

VETERINARY CLINICAL BIOCHEMISTRY

specialty	**211 Veterinary medicine**	**the obligation of discipline**	**mandatory**
educational program	**« Veterinary medicine »**	**faculty**	**veterinary medicine**
educational level	**master**	**department**	**internal diseases and clinical diagnostics of animals**

TEACHER

Vikulina Galina Viktorivna

Higher education – Master of Veterinary Medicine, Master of Higher Education Pedagogy
Scientific degree - Candidate of Veterinary Sciences in specialty 16.00.01 - diagnostics and therapy of animals, Doctor of Philosophy
Academic title – associate professor
Work experience – 15 years
Indicators of professional activity on the course topic:

- author and co-author of about 60 scientific publications;
- co-author of the textbook "Veterinary Clinical Biochemistry" (2010)
- 18 years of scientific work experience;
- participant in scientific and methodological conferences.

phone	**0509125876**	**e-mail**	**vgv.14.vet@gmail.com**	**remote support**	**Moodle**

The following are involved in teaching the discipline: Doctor of Biological Sciences, Professor Olha Pavlivna Tymoshenko

GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT (DISCIPLINE)

Aim	providing students with the necessary theoretical knowledge and practical skills and abilities in the techniques of obtaining and preparing for research of biological material obtained from animals, for conducting biochemical studies, isolating biochemical indicators and their further interpretation.
Form	lectures, laboratory classes, independent work, individual assignments.
Detailing of learning outcomes and forms of their control	• Know and correctly use the terminology of veterinary medicine (PLO1) / individual and laboratory classes. • Use information from domestic and foreign sources to develop diagnostic, treatment, and business strategies (PLO2) / individual and laboratory classes. • Determine the essence of physicochemical and biological processes that occur in the animal body in normal and pathological conditions (PLO3) / individual and laboratory classes. • Establish a connection between the clinical manifestations of the disease and the results of laboratory tests (PLO5) / individual and laboratory classes.
Scope and forms of control	5 ECTS credits (150 hours): 30 hours of lectures, 44 hours of laboratory classes; 76 hours of independent work, ongoing control; final control – differentiated test.
Teacher requirements	timely completion of tasks, activity, teamwork
Enrollment conditions	according to the curriculum

COMPLEMENTARY EDUCATION STANDARDS AND CURRICULUM

Competencies	GC1. Ability to think abstractly, analyze and synthesize. GC2. Ability to apply knowledge in practical situations. GC7. Ability to conduct research at the appropriate level. GC8. Ability to learn and master modern knowledge. GC9. Ability to make informed decisions. GC11. Ability to evaluate and ensure the quality of work performed. SC1. Ability to establish the features of the structure and functioning of cells, tissues, organs, their systems and apparatuses of the animal body of different classes and species - mammals, birds, insects (bees), fish and other vertebrates. SC2. Ability to use tools, special devices, instruments, laboratory equipment and other technical means to carry out the necessary manipulations during professional activities. SC6. Ability to select, pack, fix and send samples of biological material for laboratory research. SC7. Ability to organize and conduct laboratory and special diagnostic tests and analyze their results.	**Program learning outcomes**	PLO1. Know and correctly use the terminology of veterinary medicine. PLO2. Use information from domestic and foreign sources to develop diagnostic, treatment and business strategies. PLO3. Determine the essence of physicochemical and biological processes that occur in the animal body in normal and pathological conditions. PLO5. Establish a connection between the clinical manifestations of the disease and the results of laboratory tests.

STRUCTURE OF THE EDUCATIONAL COMPONENT (DISCIPLINE)

Chapter 1 General Veterinary Clinical Biochemistry					
Lecture 1-2	Introduction. Objects and methods of research in veterinary clinical biochemistry	**LPC 1-2**	Organization of biochemical research in veterinary medicine	**Independent work**	• Characteristics of physicochemical methods in clinical biochemistry • Coagulation and fibrinolytic systems • Disorders in the metabolism of some trace elements • Disorders in the metabolism of some vitamins. Vitamin-like substances
Lecture 3-4	Violation of protein metabolism in case of pathology of the internal organs of animals	**LPC 3-4**	Biochemical study of protein metabolism indicators		
		LPC 5	Biochemical study of indicators of non-protein nitrogenous components		
Lecture 5-6	Disturbances in carbohydrate metabolism in case of pathology of the internal organs of animals	**LPC 6**	Biochemical study of carbohydrate metabolism indicators in pathologies		
		LPC 7	Diabetes mellitus: diagnostic criteria		
Lecture 7	Disturbances of lipid metabolism in case of pathology of the internal organs of animals	**LPC 8**	Biochemical study of lipid metabolism indicators in pathologies		
Lecture 8-9	Disturbances in water-ion metabolism and acid-base balance in case of animal diseases. Disturbances in vitamin-mineral metabolism. Biochemical changes in case of neoplasms	**LPC 9**	Disturbances in the metabolism of macro- and microelements in case of animal diseases		
		LPC 10-11	Biochemical study of water-ion exchange indicators		
		LPC 12	Clinical vitaminology		
		LPC 13	Biochemical changes in case of neoplasms		
Chapter 2 Special Veterinary Clinical Biochemistry					
Lecture 10-11	Clinical enzymology	**LPC 14-15**	Enzyme diagnosis	**Independent work**	• Hormones of the gastrointestinal tract • Disorders of rumen function (lactic acidosis, rumen tympany, urea poisoning) • Individual work with the results of biochemical studies of biological material obtained from an animal with internal pathology. The existing changes in biochemical blood parameters are described and summarized and a conclusion is provided
Lecture 12	Biochemical studies for heart and lung diseases	**LPC 16**	Veterinary clinical biochemistry in case of heart disease		
		LPC 17	Veterinary clinical biochemistry in case of lung diseases		
Lecture 13	Biochemical studies for diseases of the liver and biliary tract. Biochemical studies for diseases of the gastrointestinal tract and pancreas	**LPC 18**	Veterinary clinical biochemistry in case of diseases of the gastrointestinal tract and pancreas		
		LPC 19	Biochemical studies in liver and biliary tract diseases		
Lecture 14	Biochemical studies for diseases of the urinary system	**LPC 20**	Veterinary clinical biochemistry in case of urinary system pathology		
Lecture 15	Peculiarities of the approach to	**LPC 21-22**	Peculiarities of interpreting the results		

	interpreting the results of biochemical studies		of biochemical studies of biological substrates		

BASIC LITERATURE AND METHODOLOGICAL MATERIALS

1. Kaneko J., Harvey J., Bruss M. Clinical Biochemistry of Domestic Animals, 6th Edition. – Academic Press, 2008. – 928 p.
2. Kerr M.G. Veterinary Laboratory Medicine, second edition. – Blackwell Science, 2002. – 368 p.
3. Bellwood B., Andrasik-Catton M. Veterinary Technician's Handbook of Laboratory Procedures. – 2014. – 171 p.

ELECTRONIC RESOURCES

http://moodle.btu.kharkiv.ua/course/view.php?id=424

GRADING SYSTEM

SYSTEM		POINTS	ACTIVITY THAT IS ASSESSED
Summative assessment (differentiated test, exam)	**100 ECTS points (standard)**	**to 100**	**40 % - final testing** **60 % - student's current work during the semester**
Section evaluation	**100-point total**	**to 30**	**answers to test questions**
		to 30	**result of mastering the independent work block**
		to 40	**student activity in classes (oral answers)**

NORMS OF ACADEMIC ETHICS AND INTEGRITY

All participants in the educational process (including students) must adhere to the code of academic integrity and the requirements stipulated in the regulation "On Academic Integrity of Participants in the Educational Process of DBTU": to demonstrate discipline, good manners, respect each other's dignity, show kindness, honesty, and responsibility.