SYLLABUS OF THE EDUCATIONAL COMPONENT

VETERINARY VIROLOGY

speciality	211 – Veterinary Medicine	Discipline status	mandatory
Field of knowledge	Veterinary Medicine	Faculty	Veterinary Medicine
educational level	Not limited	department	Department of epizootology and microbiology

TEACHER

Harahulya Halina

Higher education - veterinary medicine specialty
Scientific degree - candidate of veterinary sciences, specialty 16.00.03-veterinary microbiology, virology and immunology
Academic title - associate professor
Work experience - 25 years
Indicators of professional activity on the subject of the course:
- author of 12 methodological developments;
- 22 years of experience in scientific work;
- participant of scientific and methodical conferences.

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Candidates of veterinary sciences, Basko Sabina, are involved in the teaching of the discipline

GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT (DISCIPLINE)	
The purpose of the discipline	The goal of the "Veterinary Virology" discipline is to provide students with thorough knowledge of viruses, their biological properties, genetics, ecology, and the diseases they cause in animals and humans.
Format	lectures, practical employment (occupations), self-contained work of students, consultations.
Detailing of learning results and forms of their control	• the ability to observe the rules of personal safety when researching animals, using knowledge about their fixation, follow the rules of personal hygiene, use the rules of asepsis and antiseptics when carrying out any intervention or research • the ability to conduct research at an appropriate level, apply knowledge in practical situations, use tools, special devices for carrying out special manipulations during the performance of professional tasks • ability to carry out vaccination by enteral and parenteral methods • understand and find out the specifics of conducting clinical research in order to form conclusions about the condition of the animal and establish the effectiveness of vaccination • ability to abstract thinking, analysis, synthesis, search, processing of information from various sources
Scope and forms of control	3 ECTS credits (180 hours): 30 hours of lectures, 44 hours of laboratory classes; 76 hours of self-study, 30 hours of practical classes; current control (2 chapters); final control - differentiated assessment.
The teacher's requirements	timely completion of tasks, activity, teamwork
Enrollment conditions	"free enrollment"

COMPLEMENTS THE STANDARD OF EDUCATION AND THE EDUCATIONAL PROGRAM			
Competences	GC1. Ability to abstract thinking, analysis and synthesis. GC 2. Ability to apply knowledge in practical situations. GC 3. Knowledge and understanding of the subject field and profession. SC 2. The ability to use tools, special devices, devices, laboratory equipment and other technical means to carry out the necessary manipulations during professional activity. SC 3. Ability to observe the rules of labor protection, asepsis and antiseptics during professional activity. SC 6. The ability to select, pack, fix and send samples of biological material for laboratory research. SC 7. Ability to organize and conduct laboratory and special diagnostic studies and analyze their results. SC 11. Ability to apply knowledge of biosafety, bioethics and animal welfare in professional activities. SC 16. The ability to protect the environment from pollution by livestock waste, as well as materials and means of veterinary use.	**Program learning outcomes**	PLO 1. Know and correctly use the terminology of veterinary medicine. PLO 2. Use information from domestic and foreign sources to develop diagnostic, treatment and business strategies. PLO 17. Formulate conclusions regarding the effectiveness of selected methods and means of keeping, feeding and treating animals, prevention of contagious and non-communicable diseases, as well as production and technological processes at enterprises for keeping, breeding or exploiting animals of various classes and species. PLO 19. Develop measures aimed at protecting the population from diseases common to animals and humans.

STRUCTURE OF THE EDUCATIONAL COMPONENT (DISCIPLINES)

Chapter 1. General virology					
Lecture 1	Introduction to virology.	Practical classes 1 (PC 1)	Rules of work in the virological laboratory. Laboratory animals. Methods of infection of laboratory animals.	Independent work	• Biophysical properties of viruses. • Persistence of viruses in the environment. • Evolution of viruses. Ecology of viruses. • Gnotobiots and SPF-animals and their use in virological studies • Cellular and humoral factors of antiviral immunity. Immunopathology of viral infections. • Comparative characteristics of test systems for cultivation of animal viruses • Main groups of drugs for the treatment and prevention of viral infections. Comparative characteristics of serological reactions: RGAd, RZHAd and RNGAd.
Lecture 2	REPRODUCTION OF VIRUSES				
Lecture 3	Genetic of Viruses. Pathogenesis of Viral Infections	PC 2	Rules and methods of obtaining and transporting virus-containing material. Methods of light and electron microscopy in virological research.		
Lecture 4	Immune response to viruses.	PC 3	Cultivation of viruses in chicken embryos. Accounting for the results of infection of chicken embryos.		
Lecture 5	Diagnosis of viral infections.	PC 4	Cultivation of viruses in cell cultures. Infection of cell cultures. Cytopathic action of the virus.		
Lecture 6	Preventing viral diseases. Antiviral drugs	PC 5	Virus titration methods. Calculation of virus titer according to the method of Reed and Mench.		
Lecture 7	Rabies.	PC 6	Hemagglutinating viruses. Studying the methods of staging HA. Serological methods of diagnosis of viral infections.		
Lecture 8	Influenza virus	PC 7	Diffusion precipitation reaction. Polymerase chain reaction.		
Lecture 9	Family Paramyxoviridae	PC 8	Neutralization reaction (NT) and its modifications. Titration of viruses in NT.		
		PC 9	The method of fluorescent antibodies (MFA) is an immunofluorescence reaction. Enzyme immunoassay.		

Chapter 1. General virology					
Lecture 10	Picornaviridae	PC 10	Laboratory diagnosis of rabies.	Independent work	• Features of diagnosis of diseases characteristic of several species (rabies and animal prion diseases, Aujeski's disease, foot-and-mouth disease,
Lecture 11	Family Coronaviridae	PC 11	Laboratory diagnosis of smallpox mammals and birds.		
Lecture 12	Family Flaviviridae	PC 12	Laboratory diagnosis of foot and		

	Family Retroviridae		mouth disease. The use of RZK in virology.		influenza) • Features of diagnosis of cattle diseases (cattle leukemia, infectious rhinotracheitis, viral diarrhea of cattle, PG-3 RSI) • Features of diagnosis of diseases of small cattle (malignant catarrhal fever, scrapie, DRH plague) • Features of diagnosis of swine diseases (KHS, ASF, respiratory and reproductive syndrome, parvovirus infection, viral transmissible gastroenteritis, viral encephalomyelitis of pigs, vesicular disease and vesicular exanthema of pigs) • Features of diagnosis of poultry diseases (Newcastle disease, bird flu, Marek's disease, poultry leukemia, infectious bursal disease, infectious laryngotracheitis, infectious bronchitis) • Features of diagnosis of horse diseases (influenza, rhinopneumonia, equine infectious anemia, African horse sickness) • Features of diagnosis of diseases of small animals (plague of carnivores, parvovirus and adenovirus infection of dogs, panleukopenia of cats, calicivirus and coronavirus of cats)
Lecture 13	Family Arteriviridae. Family Caliciviridae.	PC 13	Differential laboratory diagnostics of viral respiratory diseases of cattle.		
Lecture 14	Family Reoviridae. Family Birnaviridae. Family Arenaviridae. Family Astroviridae. Family Bornaviridae.	PC 14	Differential laboratory diagnosis of viral respiratory diseases of pigs, horses, and poultry.		
Lecture 15	Family Poxviridae. Family Herpesviridae. Family Adenoviridae.	PC 15	Differential laboratory diagnosis of viral respiratory diseases of small animals (dogs, cats, rabbits).		

BASIC LITERATURE AND METHODOLOGICAL MATERIALS

Fenner's Veterinary Virology. Book • Fifth Edition • 2016	Electronic information resources https://www.youtube.com/watch?v=6fwu7AES9z8 https://www.youtube.com/watch?v=AomdQO0tskU https://www.youtube.com/watch?v=vmlLj1aLZ7s https://www.youtube.com/watch?v=oYnXeAPieN0 https://www.youtube.com/watch?v=h9lxx6x3HAM https://www.youtube.com/watch?v=nwYlk4eB7yA

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.