

SYLLABUS OF THE EDUCATIONAL COMPONENT

VETERINARY VIROLOGY



speciality	211 – Veterinary Medicine	Discipline status	mandatory
Field of knowledge	ветеринарна медицина	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 - 24 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

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	<ul style="list-style-type: none"> • 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	6 ECTS credits (180 hours): 30 hours of lectures, 44 hours of laboratory-practical classes; 30 hours of teaching practice; 76 hours of self-study, current control (2 chapters); final control - differentiated assessment.
The teacher's requirements	timely completion of tasks, activity, teamwork
Enrollment conditions	"free enrollment"

COMPLIANCE WITH THE EDUCATION STANDARD AND EDUCATIONAL PROGRAM

Competences	<p>GC1. Ability to abstract thinking, analysis and synthesis.</p> <p>GC 2. Ability to apply knowledge in practical situations.</p> <p>GC 3. Knowledge and understanding of the subject field and profession.</p> <p>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.</p> <p>SC 3. Ability to observe the rules of labor protection, asepsis and antiseptics during professional activity.</p> <p>SC 6. The ability to select, pack, fix and send samples of biological material for laboratory research.</p> <p>SC 7. Ability to organize and conduct laboratory and special diagnostic studies and analyze their results.</p> <p>SC 11. Ability to apply knowledge of biosafety, bioethics and animal welfare in professional activities.</p> <p>SC 16. The ability to protect the environment from pollution by livestock waste, as well as materials and means of veterinary use.</p>	Program learning outcomes	<p>PLO 1. Know and correctly use the terminology of veterinary medicine.</p> <p>PLO 2. Use information from domestic and foreign sources to develop diagnostic, treatment and business strategies.</p> <p>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.</p> <p>PLO 19. Develop measures aimed at protecting the population from diseases common to animals and humans.</p>
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STRUCTURE OF THE EDUCATIONAL COMPONENT

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	<ul style="list-style-type: none"> • Biophysical properties of viruses. • Persistence of viruses in the environment. • Evolution of viruses. Ecology of viruses. • Gnotobiotics 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. <p>Comparative characteristics of serological reactions: RGA_d, RZHA_d and RGA_d.</p>
		PC 2	Rules and methods of obtaining and transporting virus-containing material. Methods of light and electron microscopy in virological research.		
Lecture 2	REPRODUCTION OF VIRUSES	PC 3	Cultivation of viruses in chicken embryos.		
		PC 4	Accounting for the results of infection of chicken embryos.		
Lecture 3	Genetic of Viruses.	PC 5	Cultivation of viruses in cell cultures. Infection of cell cultures. Cytopathic action of the virus.		
		PC 6	Virus titration methods. Calculation of virus titer according to the method of Reed and Mench.		
Lecture 4	Pathogenesis of Viral Infections	PC 7	Hemagglutinating viruses. Studying the methods of staging HA.		
Lecture 5	Immune response to viruses.	PC 8	Serological methods of diagnosis of viral infections. Diffusion precipitation reaction.		
Lecture 6	Diagnosis of viral infections.	PC 9	Polymerase chain reaction. Neutralization reaction (NT) and its modifications. Titration of viruses in NT.		
Lecture 7	Preventing viral diseases. Antiviral drugs.	PC 10	The method of fluorescent antibodies (MFA) is an immunofluorescence reaction.		
		PC 11	Enzyme immunoassay.		

Chapter 2. Special virology

Lecture 8	Rabies.	PC 12	Laboratory diagnosis of rabies.	Independent work	<ul style="list-style-type: none"> • Features of diagnosis of diseases characteristic of several species (rabies and animal prion diseases, Aujeszki's disease, foot-and-mouth disease, 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 9	Influenza virus. Family Paramyxoviridae.	PC 13	Laboratory diagnosis of smallpox mammals and birds.		
Lecture 10	Family Coronaviridae. Family Picornaviviridae.	PC 14	Laboratory diagnosis of foot and mouth disease. The use of CFT in virology.		
Lecture 11	Family Flaviviridae Family Retroviridae	PC 15	Differential laboratory diagnosis of viral diseases common to several animal species.		
Lecture 12	Family Arteriviridae. Family Caliciviridae.	PC 16	Laboratory diagnostics of viral diseases of cattle.		
Lecture 13	Family Reoviridae. Family Birnaviridae.	PC 17	Laboratory diagnosis of viral diseases of horses		
Lecture 14	Family Arenaviridae. Family Astroviridae. Family Bornaviridae.	PC 18	Laboratory diagnosis of viral diseases of pigs.		
Lecture 15	Family Poxviridae. Family Herpesviridae. Family Adenoviridae.	PC 19	Laboratory diagnosis of viral diseases of poultry.		
		PC 20	Laboratory diagnosis of viral diseases of dogs.		
		PC 21	Laboratory diagnosis of viral diseases of cats. Laboratory diagnosis of viral diseases of rabbits.		
		PC 22	Final control.		

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>

EVALUATION SYSTEM

	System	points	ACTIVITY TO BE EVALUATED
Final assessment	100 ECTS points (standard)	up to 50	50% of the average grade for the chapter
		up to 50	final testing
Rating of section	100 points total	up to 50	answers to test questions
		up to 20	oral answers in laboratory-practical classes
		up to 30	the result of mastering the block of independent work

NORMS OF ACADEMIC ETHICS AND CHARITY

All participants in the educational process (including those seeking education) must adhere to the code of academic integrity and the requirements prescribed in the provision "On academic integrity of participants in the educational process of DBTU": show discipline, education, respect each other's dignity, show kindness, honesty, responsibility