SYLLABUS OF THE EDUCATIONAL COMPONENT

VACCINOLOGY IN VETERINARY MEDICINE

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.

Tel.	**0661333555**	**e-mail**	**vetvir.galina@gmail.com**	**remote support**	**Moodle**

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 (90 hours): 14 hours of lectures, 16 hours of laboratory-practical classes; 60 hours of self-study, modular control (2 modules); 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	1. Ability to think abstractly, analyze and synthesize, search, process information from various sources. 2. Ability to apply knowledge in practical situations. 3. The ability to conduct research at the appropriate level, make informed decisions, evaluate and ensure the quality of the work performed. 4. The ability to understand and find out the peculiarities of the structure and functioning of cells, tissues, organs, their systems and apparatuses of the animal body. 5. The ability to observe the rules of safety, asepsis and antiseptics during professional activities.	**Program learning outcomes**	1. PRN 7. Collect anamnestic data during registration and examination of animals, find solutions regarding the choice of effective methods of prevention of animal diseases. 2. PRN 8. Explain the essence and dynamics of the development of physiological processes that occur in the body of animals under the influence of environmental factors and the action of infectious agents.

	7. The ability to conduct clinical research in order to formulate conclusions about the condition of animals or establish a diagnosis. **8. Ability to develop prevention strategies.** **9. The ability to carry out professional activities within the chosen specialization.** **10. Ability to plan, organize and implement measures for the treatment of diseases of small animals.**				

STRUCTURE OF THE EDUCATIONAL COMPONENT (DISCIPLINES)					
Chapter 1 Theoretical foundations of veterinary vaccinology					
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.**	**Самостійна робота**	• **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.		
Модуль 2. Оцінка ефективності вакцинопрофілактики у ветеринарній медицині					
Lecture 10	Picornaviridae	PC 10	Laboratory diagnosis of rabies.	Самостійна робота	• Features of diagnosis of diseases characteristic of several species (rabies and animal prion diseases, Aujeski'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
Lecture 11	Family CORONAVIRIDAE	PC 11	Laboratory diagnosis of smallpox mammals and birds.		
Lecture 12	FAMILY FLAVIVIRIDAE FAMILY RETROVIRIDAE	PC 12	Laboratory diagnosis of foot and mouth disease. The use of RZK in virology.		
Lecture 13	Arteriviridae. 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	The family Poxviridae, Herpesviridae, Adenoviridae.	PC 15	Differential laboratory diagnosis of viral respiratory diseases of small animals (dogs, cats, rabbits).		

					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)

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 modules**
		up to 50	**final testing**
Modular assessment	**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