BILA TSERKVA NATIONAL AGRARIAN UNIVERSITY

CATALOGUE

SUMMARY OF DISCIPLINES

FACULTY OF VETERINARY MEDICINE

Bila Tserkva-2019

CORE DISCIPLINES

Subjects	**Introduction to the specialty**
Teacher	Mukola Iln'itskyi Doctor of Veterenari Sciences, Associate Professor of the Department of Anatomy and Histology after the name of Kovalski,
Course and semester in which you plan to study discipline	1B, I semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline "Entry into the specialty" is the acquisition of students such knowledge and skills. Know: • Major periods of development of veterinary medicine and their connection with the change and development of social formations. • The regularity of the development of medical affairs in all periods of humanity in connection with the development and change of socio-economic formations, history, philosophy, achievements of natural science and culture. • The status of veterinary medicine and livestock in nomads, Cimmerians and Scythians. Veterinary medicine and animal husbandry of Ancient China, Tibet, Iran and Palestine. • Contribution of Arab scientists to veterinary medicine. • Veterinary medicine in Europe in the Middle Ages. be able: • To reveal the content of the basic stages of the formation and development of veterinary medicine from a long time to the present in combination with the socio-economic, political and cultural development of peoples, history, philosophy, folk medicine, the achievements of natural science in the context of the spiritual culture of mankind. • Follow the development of materialistic and idealistic directions in the animal and human medical business. • Show the international significance of the organization's historical experience medical case in the territory of Ukraine, in particular, the organization of the fight against especially dangerous animal diseases.
Description of the discipline	
Prerequisites for the study of the discipline	In order to study the discipline "Admission to the specialty" students must have basic training based on general secondary education, colleges.
Maximum number of students who can study	**25 applicants at a time**
Classroom topics	Lecture topics: Lecture 1. History of veterinary medicine as a scientific discipline. Veterinary medicine, its essence and importance for the national economy and society. Main tasks and requirements for veterinary specialists. Aims of teaching the history of veterinary medicine. Its place in the educational process. Lecture 2 Veterinary science in the ancient world. Folk medicine

	of primitive man and people of pre-Ukrainian culture. Lecture 3. The Mouster Era. Late Paleolithic. Mesolithic. Neolith. Lecture 4 The emergence of veterinary medicine in connection with the domestication of animals and the development of animal husbandry during the Trypillian culture and slave system in the territories of Ukraine, India, China, Mesopotamia, Egypt and other countries. Lecture 5 Veterinary Medicine of Ancient Greece and Rome. Lecture 6 The Status and Development of Veterinary Medicine in the Middle Ages and Before the Renaissance. Works on veterinary medicine Apsirt, Hieroclite, Vesalius, D.Rufo, L.Russiem and their importance for the development of veterinary medicine. Lecture 7 Veterinary medicine of ancient Russia. Nikonovsky and Lavrentievskiy chronicles on the state of medical business in Kievan Rus. Lecture 8 Veterinary medicine in Western Europe during the renaissance (early capitalism, 15-17 cc.). The successes of science and their importance for the development of veterinary medicine. Lecture 9 Veterinary Medicine in Tsarist Russia in the 18th Century The state and development of animal husbandry and veterinary medicine in Ukraine during the Cossack era. Lecture 10 The Status and Development of Veterinary Medicine in Tsarist Russia and Ukraine during the Formation and Development of Capitalism in the Nineteenth Century and Early XX Century. Organization of higher education institutions in Russia and Western Europe. Lecture 11 The state and development of veterinary medicine in the Soviet era. Lecture 12. International cooperation in the field of veterinary medicine and its importance for its development. Lecture 13 State and achievements in the field of veterinary medicine during the years of independence in Ukraine and the Kiev region. Lecture 14 History of development and formation of the Faculty of Veterinary Medicine at the Belotserkov National Agrarian University.
	Practical topics: Content module 1 1 Aims of teaching the history of veterinary medicine. ÏÍ a place in the educational process. 2 Veterinary medicine, its economic and social importance. 3 Main tasks and requirements for veterinary specialists. 4 History of development and formation of the Faculty of Veterinary Medicine of Belotserkov National Agrarian University Content module 2 1 Veterinary medicine in the ancient world. 2 The formation of scientific veterinary medicine and the role of ancient scientists of Greece and Rome in its development. 3 Veterinary Medicine in the Renaissance. Prominent scientists of this era and their contribution to the development of veterinary medicine. Content module 3 1 Veterinary medicine during the WWII period. 2 Contribution of domestic scientists to the development of veterinary education.

	3 Veterinary education in Ukraine, Tsarist Russia and Western Europe. 4 Veterinary medicine in Soviet times and during the independence of Ukraine (medical case, publication of textbooks, veterinary journals.) Content module 4 1 The history of FMV. 2 Introduction of veterinary education in Ukraine opening of veterinary colleges. 3 Scientific achievements in the field of disease prevention and diagnostics
Language of instruction	Ukrainian

Discipline	**Professional English language**
Lecturer	Olga Rejda Senior teacher of the foreign languages chair
Length of course What year student for	1B year, 1, 2 terms
Departments in which students are invited to study discipline	Veterinary medicine department
Key skills developed	The programme purpose is the formation of professional language competences that will facilitate students' effective functioning in the cultural diversity of educational and professional environments. The result of discipline studying is the obtaining of the following knowledge and skills by students: *Experience* - grammatical constructions and the development of skills and abilities to translate sentences containing these constructions; - professional topics related to the future specialty; - knowledge of professional vocabulary; - special and scientific literature on specialty; *Skill* - to show the understanding in the living, socio-cultural and professional environment - to give a report on the subject and the content of the text in English; - to carry on a professionally directed conversation in the mode of "teacher-student", "student-student" according to the topic and the content of the text in a foreign language; - to reference special and scientific literature in the specialty; - to work with dictionaries and reference books.
Description of the discipline	
Prerequisites	None
Class size	25 students
Topics of the practical classes	**Topics of the practical classes** 1. The main stages of the development of biological science. 2. Biology as a science at the present stage of formation. My profession is a veterinarian.

	3. Bacteria. The basic characteristics of bacteria 4. Viruses .The main characteristics of the viruses. Influence of viruses on animals. 5. Cell structure. 6. DNA. Structure and functions. 7. Invertebrate. The evolution of invertebrates. 8. Vertebrates. The evolution of invertebrates. 9. The main types of vertebrates: reptiles and amphibians 10. Fishes: the first vertebrates 11. Mammals. 12. Tissues.Types of tissues. 13. Organ systems. 14. Animals' digestive system. 15. Blood and circulatory system. 16. From the history of agriculture. Growing and breeding of farm animals
Course language	English

Name of the discipline	**Philosophy**
Lecturer	Liudmyla Melnyk, PhD (political science) Head of the Department of Theoretical Legal and Social Humanitarian Discipline Olexandr Yarmola, PhD (philosophical sciences) lecturer of the Department of Theoretical Legal and Social Humanitarian Discipline
Year of study and semester of discipline study	1B year, 2 terms
Faculties of which students are offered to study discipline	Faculty of Veterinary Medicine
List of competencies and relevant results of learning that provides discipline	As a result of studying the discipline, students must: Knowledge • definition of basic philosophical categories and concepts; • the main content of the themes of all sections of the program; • to orientate in the traditions of philosophical thinking formed in the context of world, general civilization dimensions. Skill • - to carry out the analysis of the mastered material; • to defend their own point of view on the discussion problems of both domestic and foreign philosophical thought; • to use acquired philosophical knowledge in the analysis of philosophical and methodological problems of modern scientific knowledge; • to formulate and substantiate their own position on current problems.
Description of the discipline	
The prerequisites are needed for studying discipline	History and culture of Ukraine and the world
Maximum number students who can learn at the same time	25

Topics of auditorium lessons	1. Philosophy as a specific form of comprehension of reality. 2. Ancient philosophy. 3. Philosophy of the New Time. 4. History of Ukrainian Philosophy. 5. Ontology. 6. Theory of knowledge as a philosophical discipline. 7. Philosophy of culture
Topics of practice lessons	Temes of practical classes 1. Philosophical thought of the Ancient East. 2. Ancient philosophy. 3.Philosophy of the Middle Ages and the Renaissance. 4. German classical philosophy. 5. Non-classical philosophy of the XIX century. 6.Contemporary world philosophical thought. 7. History of Ukrainian Philosophy. 8. Dialectics 9. The problem of consciousness in philosophy. 10. Science as a subject of philosophical research. 11. Philosophical Anthropology. 12.Social philosophy. 13. Philosophy of Culture. 14. The philosophical doctrine of values.
Teaching languages	Ukrainian

Name of the discipline	**Ukrainian language (by professional field)**
Teacher	Pohorila Svitlana Hryhorivna, Candidate of Ped. Sciences, Associate Professor of the BNAU Department of Slavonic Philology, Pedagogy and Teaching Methods Tymchuk Inna Mykolaivna, Candidate of Ped. Sciences, Associate Professor of the BNAU Department of Slavonic Philology, Pedagogy and Teaching Methods
Course and semester in which you plan to study discipline	1B course, I semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of the discipline is the acquisition by students of such knowledge and skills. Knowledge: state language, tactics and communication strategies; norms of modern Ukrainian literary language and practical knowledge of them; Ability to communicate in the state language both verbally and in writing; apply knowledge of the state language both orally and in writing; to use the state language during professional and business communication and preparation of documents; be responsible for fluency in the state language and the development of professional knowledge;

	correctly use different language means according to communicative intentions; accurately express thoughts in order to successfully solve professional problems and tasks.
Description of the discipline	
Prerequisites for the study of the discipline	General course in Ukrainian
Maximum number of students who can study	25 applicants at a time
Classroom topics Practical classes:	Topic 1. State language is the language of professional communication. Language and profession. Functions of language in society and professional activity. Theme 2. Normativity is the main feature of the culture of professional communication. Topic 3.Functional styles of Ukrainian literary language in professional communication. Topic 4.Ukrainian terminology in professional communication.Terms and professionalism. Theme 5.Professional communication. Topic 6. Communication as a tool for professional activity .. Topic 7. Culture of oral professional communication Topic 8., 9. Forms of collective discussion of professional problems. Topic 10. The art of public speaking. Topic 11. Scientific communication as a component of professional activity. Topic 12. Document is the main type of business speech. Topic 13., 14. Documents on personnel and contract issues. Topic 15., 16. Background documents. Topic 17., 18. Accounting and financial documents. Topic 19., 20. Etiquette of business correspondence. Topic 21. Final lesson. Modular control work. Performing test tasks, drafting and editing documents.
Language of instruction	Ukrainian

Subjects	**History and culture of Ukraine**
Teacher	Larysa L. Ordina, PhD (pedagogical sciences) Head of the Department of Theoretical Legal and Social Humanitarian Disciplines
Course and semester in which you plan to study discipline	1b, I semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	- the most important stages of the historical and cultural development of a society living in Ukraine; - general classification of cultural objects inheritance; -the main facts of their creation and interaction with history and culture of Ukraine and the world; - available landmarks, their status and status;

	- legislative Acts on the Protection of Historical and Cultural Monuments of Ukraine; -major directions and trends of development, achievements at different stages of cultural cultivation; - principles of definition of cultural phenomena of Ukrainian and world cultures.
Description of the discipline	
Prerequisites for the study of the discipline	**History and culture of Ukraine**
Maximum number of students who can study	**15–20 applicants at a time**
Classroom topics	**Lecture topics:** 1. Ukrainian culture and society. 2. Ancient culture of Eastern Slavs. 3. Culture of Kievan Rus 4. Development and distinctive features of the Ukrainian culture of the Cossack era. 5. Culture of the Galician-Volyn principality. 6. Socio-political and cultural situation in the Polish-Lithuanian days. 7. The main directions of Ukrainian cultural art in the 18-19 centuries. 8. Ukrainian cultural paradigm of the twentieth century.
	Topics of practice lessons 1. Ukrainian art as a means of creating personality. 2.Myphology, life and customs of the East Slavic tribes. 3. Development of art in Kievan Rus. 4. Culture of the Cossack Age. Development of education and science. 5. Features of architecture, fine arts and artistic crafts in the Galician-Volyn principality 6. Characteristic features of the literary and publishing process in the Ukrainian lands during the period of feudal fragmentation. 7. Enlightenment ideas in the culture of Ukraine of 18-19 centuries. 8. Achievements and losses of Ukrainian culture in the second half of the twentieth century. The main features of the new socio-cultural situation in Ukraine in modern conditions.
Language of instruction	Ukrainian, English

Name of the discipline	**Chemistry**
Lecturer	Tsekhmistrenko Svitlana Ivanivna Doctor of agricultural science Professor
Year of study, semester	1B, 1 and 2 semester
Facultieswhere thestudentsareoffered tostudy the discipline	Veterinary medicine
List of competencies and learning outcomes	**Learning outcomes** *Knowledges:*

provided by the discipline	– modern methods of physico–chemical analysis; – to interpret the general laws that underlie the use of inorganic substances in pharmacy and medicine; - solutions and their properties, buffer solutions, the concept of osmosis, diffusion, adsorption; – the structure, functions and metabolism of carbohydrates, lipids, proteins, nucleic acids, amino acids, amines, vitamins, hormones, enzymes in normal and with various metabolic disorders; – chemical composition of blood, milk, colostrum, eggs, wool, urine, liver, heart, spleen, kidneys, muscle and nervous tissues of farm animals; – exchange of proteins, lipids, carbohydrates, nucleic acids, vitamins, enzymes, hormones, water and minerals in the organism of farm animals and poultry; – to understand the relationship between different types of exchange; – to consider an organism as an open self–regulated system; – specificity of metabolism of substances in different organs, tissues and cells. *Skills:* – to prepare labdishes for biochemical research, – to select biological samples; – to preserve and process biological samples by appropriate methods for conducting biochemical analyzes; – to prepare artificial solutions of carbohydrates, macro– and microelements, vitamins, proteins, amino acids and other substances; to determine the sorption properties of different surface–active substances; – prepare buffer solutions for research in vitro; – to prepare percent, normal, molar solutions; – to determine osmotic pressure; – to determine the active acidity of the medium; – to prepare colloidal solutions; – to use devices and laboratory equipment when studying the chemical composition of a living organism and indicators characterizing metabolic processes; – to determine the concentration of glucose and various metabolic metabolites of carbohydrates in biological substrates; – to determine lipid metabolism indices in biological substrates; – to determine the concentration of protein and metabolites of protein metabolism in biological substrates; – to investigate the indices of exchange of nucleic acids; – to determine the content of vitamins in biological material; – to determine the activity of enzymes in biological material; – to determine the content of macro– and micronutrients; – to analyze the hormonal state of the organism of animals and poultry; – to interpret the results obtained; determine the state of a living organism when changing biochemical parameters; – to control the clinical condition of animals; – to use aimed regulating of exchange processes aimed at increasing the productivity of farm animals and improving the quality of products; – to determine the biochemical parameters of honey, wax, pollen,

	royal jelly, propolis and make conclusions about the quality of beekeeping products.
Discipline description	
Prerequisites needed for studing the discipline	The program is prepared taking into account the structural and logical connection of discipline with general scientific disciplines and knowledge gained during the study of chemistry in secondary schools. As a result of the study of chemistry, the student knows the chemical composition of living organisms and the laws of chemical processes that underlie the existence of living matter. Chemistry is the theoretical basis for the study of physiology of agricultural sciences. animals, clinical biochemistry, pharmacology, genetics, microbiology, virology, toxicology, feeding, clinical diagnosis, therapy and other disciplines of the veterinary profile.
Students' limit in a group	10
Topics of in-class activity	**Lecture topics:** • Modern physico-chemical methods of research • Coordination compounds. • Chemistry of biogenic metals. • Structure, chemical properties and application of carboxylic acids • Structure, chemical properties and application of carbohydrates • Structure, chemical properties and application of lipids • Structure, chemical properties and application of nitrogen-containing compounds, aminoacides, proteins • Chemistry and metabolism of carbohydrates • Chemistry and lipid metabolism • Chemistry and protein exchange • Chemistry and exchange of nucleic acids • Water and mineral exchange. • Water-soluble and fat-soluble vitamins. • Enzymes. Biological oxidation. Oxidative phosphorylation. • Hormones • Biochemistry of nervous tissue. • Biochemistry of muscular and connective tissue. • Biochemistry of blood.Biochemistry of bone tissue • Biochemistry of the kidneys and urine.Biochemistry of meat. • Biochemistry of milk and mammalia glandule. • Biochemistry of eggs.Biochemistry of skin and wool. **Topics of practicalclasses:** • Equipment and operating rules in the chemical laboratory. Modern physico-chemical methods of research. Titration. • Kinetics of chemical reactions (Dependence of the reaction rate on the concentration of reactants, Dependences of the rate of chemical reaction on temperature, Chemical equilibrium). • General characteristics of solutions. Solutions of non-electrolytes and electrolytes (Preparation of solutions with a given mass fraction, Preparation of a solution with a given mass fraction

	by mixing two solutions). • Coordination compounds (Preparation of coordination compounds, displacement of equilibrium of complex formation, primary and secondary dissociation of coordination compounds). • Redox reactions • S-ELEMENTS (Calcium, Sodium, Magnesium) • P-elements (Va, VIA-groups, Nitrogens, Phosphorus, Oxygen, Sulfur) • P-elements (VIIa-group, Chlorine, Iodine) • D-elements (Cooper, Zinc, Mangan, Chromium, Ferum). Qualitative analysis. • Saturated hydrocarbons • Unsaturated hydrocarbons • Alcohols, phenols, aldehydes, ketones • Saturated and unsaturated fatty acids • Phenol- and hydroxy acids • Ethers, esters, fats • Monosaccharides • Oligosaccharides, polysaccharides • Amines and amides • Amino acids, proteins • Heterocyclic compounds • Nucleic acids, alkaloids • Surface tension and methods for its determination. Adsorption. Catalysis. • Osmosis and methods of determining osmotic pressure. • pH and pH determination methods. Buffer solutions. • Colloidal solutions and methods of their obtaining. • Properties of colloidal solutions. Gels • Biochemistry of carbohydrates. • Biochemistry of lipids. • Biochemistry of nucleic acids. • Biochemistry of proteins. • Water and mineral exchange. • Vitamins. • Enzymes. • Hormones • Biochemistry of nervous tissue. • Biochemistry of muscular and connective tissue. • Biochemistry of blood.Biochemistry of bone tissue • Biochemistry of the kidneys and urine.Biochemistry of meat. • Biochemistry of milk and mammalia glandule. • Biochemistry of eggs.Biochemistry of skin and wool.
Language of teaching	Ukrainian

Subjects	**Biomedical Statistics and Informatics**
Teacher	Uliana Revytska Candidates of Sciences in Physics and Mathematics Olexandr Tsybulin Doctor of Biological Sciences
Course and semester in	1B course II, semester

which you plan to study discipline	
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teating the discipline is the acquisition of such knowledge and skills by students. Knowledge: - have a thorough knowledge of information and communication technologies used in their professional activities; -to know the principles and features of using specialized. Skill: - ability to perform statistical estimation of parameters of biological objects and processes in organisms of animals of different species under conditions of norm and pathology; - be able to use information and communication technologies in the professional field that needs updating and integration of knowledge.
Description of the discipline	
Prerequisites for the study of the discipline	Anatomical preparations of bones, joints, muscles, skin, internal organs, cardiovascular and nervous systems, analyzers
Maximum number of students who can study	**10–13 applicants at a time**
Classroom topics	Lecture topics: Topic1: General and sample population; representative sample:selection methods. Topic 2: Statistical distribution of the sample; empirical distribution function; polygon and block diagram. Topic 3. Statistical hypothesis; Errors of first kind and second kind. Normal distribution. Topic 4. Critical area; hypothesis acceptance area; critical points; Criteria of Student, Pirson and conditions for their use. Topic 5. Correlation and dependence of random variables. Regression lines. Topic 6. Curvilinear regression models.
Practice topics	Topic 1: Construction of discrete and interval variation series. An empirical distribution function. Graphic representation: polynomial, histogram, cumulus. Topic 2: Numerical characteristics of the sample: mean sample, variance, root mean square deviation, mode of the distribution, median. The concept of probable interval (confidence interval). Topic 3: Numerical characteristics of the sample: mean sample, variance, root mean square deviation, mode of the distribution, median. The concept of probable interval (confidence interval). Theme 4: The general scheme of testing of hypotheses. Testing the hypothesis of normal distribution by Pearson's criteria. Comparison of two means by Student's criteria. Topic 5: Statistical relationship between continuous traits. Correlation dependence. An empirical regression line. General review of the analysis. Comparison of the action of two drugs. Topic 6: Checking the adequacy of the linear model. Polynomial, exponential regression line.
Language of instruction	Ukrainian

Subjects	**Organization of Veterinary Service and Public Health**
Teacher	Korniienko Lubov Mykolayivna Candidate of Veterinary Science, Associate Professor, Department of Epizootology and Infectious Diseases
Course and semester in which you plan to study the discipline	4 B course, 7 semester; 3 SPB course, 5 semester;
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of the following knowledge and skills by students: **Knowledge:** **–** the basics of the legislation on veterinary medicine and food safety; – organizational structure of the State DPSS of Ukraine and the veterinary medicine service in general and in its respective territory; – organization of work of veterinary medicine specialists in territorial bodies of management, enterprises and institutions of public service; – peculiarities of organization of work of departmental and private veterinary service; - planning and organization of veterinary events, according to the direction of activity of the branch; - the main legislative documents on veterinary medicine; – international veterinary organizations and veterinary organizations in Ukraine, the functions assigned to them. **Skill:** **–** draw up major accounting journals and reports; – write acts on various types of work in veterinary activity; – to develop plans of veterinary measures (preventive and emergency direction); – to make mathematical calculations of expediency of carrying out various veterinary work; – to issue a veterinary certificate (veterinary certificate) for the transfer of goods under the control of the veterinary service; – to organize the carrying out of the state veterinary and sanitary control and supervision on the controlled objects; – to determine the financing and logistics of veterinary activities.
Description of the discipline	
Prerequisites necessary for the study of the discipline	Theoretical and practical knowledge in the following clinical disciplines: epizootology and infectious animal diseases, therapy and clinical diagnosis, obstetrics and surgery, parasitology and veterinary examination. Have a thorough knowledge of the structure and methods of assessing professional activity.
Maximum number of students who can study simultaneously	12 students
Classroom topics	**Lecture topics:** 1. Veterinary Service of Ukraine and organizational structure of the State Consumer Service and Veterinary Medicine Service in Ukraine. The main tasks facing the veterinary service of Ukraine. 2. The organizational structure and functional responsibilities of the veterinary service in the area. 3. Features of organization of veterinary business in farms of different forms of ownership. 4. Planning of veterinary events and organization of their implementation. 5. The expediency and procedure of calculating the effectiveness of veterinary measures. 6. Financing and logistics of the SPSU and veterinary medicine service in Ukraine. 7. Legislative basis and organization of state veterinary-sanitary control and supervision at the controlled objects of Ukraine. 8. Organization of research work on veterinary medicine in Ukraine. 9. International veterinary organizations. The concept of the Association of Veterinary Medicine Specialists of Ukraine and its cooperation with other organizations. 10. Veterinary service in establishments of state veterinary medicine. State budget in veterinary activity. Principles and types of self-financing. 11. Content and main provisions of the current Law of Ukraine "On Veterinary Medicine". **Practical topics:** 1. The order of registration of accounting logs on the work performed by veterinary service specialists. 2 Procedure for preparation and submission of reports by the veterinary service. 3. Registration of acts on performance of various types of works in veterinary business. 4. State administration of veterinary medicine service in Ukraine. Organizational structure of the State Consumer Service of Ukraine. 5. Organization of veterinary business in the area. 6. Organization of veterinary business in farms of different forms of ownership. 7. The procedure for the issuance of veterinary documents on cargo is under the control of the veterinary medicine service. 8. Planning of veterinary events. 9. Plan of veterinary and prophylactic and anti-epizootic measures. 10. Plan of organizational-economic and veterinary-sanitary measures for elimination (specific infectious disease - according to the task) at the disadvantaged point (economy). 11. Legislative basis for quarantine (quarantine restrictions) for infectious disease outbreaks. Organization of planned veterinary events. 12. The expediency and procedure of calculating the effectiveness of veterinary measures. 13. Financing and logistics of the SPSU and veterinary medicine service in Ukraine. 14. Veterinary service in establishments of state veterinary medicine. State budget in veterinary activity. Principles and types of self-financing. 15. Legislative basis and organization of state veterinary and sanitary control and supervision at the controlled objects of Ukraine. 16. Organization of research work in Ukraine. International veterinary organizations.
Language of instruction	Ukrainian

Subjects	**Anatomy of animals**
Teacher	Vasyl Storozhuk Doctor of Biological Sciences, Associate Professor of the Department of Anatomy and Histology after the name of Kovalski,
Course and semester in	1B, 2B course I, II, III semester

which you plan to study discipline	
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of the discipline is the acquisition of such knowledge and skills by the students. Knowledge: - features of the structure of all organs and their systems and apparatus of domestic animals; - patterns of development of organs, their systems and apparatus in ontology and phylogeny; - animal body sections, topography and organ positions in these areas. Skill: - determine the species belonging to individual organs of domestic animals; - determine the location of individual organs in different parts of the body of animals; - to prepare individual organs or their systems and apparatus (muscles, joints, vessels, nerves, lymph nodes, etc.).
Description of the discipline	
Prerequisites for the study of the discipline	Anatomical preparations of bones, joints, muscles, skin, internal organs, cardiovascular and nervous systems, analyzers
Maximum number of students who can study	10-13 applicants at a time
Classroom topics	Lecture topics: Module 1. The apparatus of motion Topic1: Anatomy - the subject and methods of study, the place of anatomy among biological disciplines and its relationship with clinical disciplines. History of anatomy development. The concept of ont- and phylogeny. Basic biogenetic law. The phylogenetic ladder and its position in farm animals. The body as a biological whole. The concept of cells, tissues, organs, systems and apparatus. Basic manifestations of life and the systems that provide them. Patterns of structure of an animal organism. The concept of germinal leaves and their derivatives. Modern methods of scientific research in anatomy. Theme 2: General characteristics of the skeleton, its structure and division into departments, functional value. Influence of conditions of keeping, feeding and other factors on the development and functioning of the skeleton. Bone as an organ (bone and cartilage, bone marrow, periosteum, endoost); bone development. Bone types in shape, structure, function and position in the skeleton. Specific and age features of the skeleton structure. Blood supply and innervation of bones. Axial skeleton. General patterns of the structure of the axial skeleton, its division into departments. Vertebral column and chest. The structure of the full thoracic segment and the functional role of its elements. Features of the departments of the spine and chest, their species and age differences. Development of the skeleton of the trunk. Features of the structure of the skeleton of the trunk in birds. Theme 3: The skeleton of the head (skull). General characteristics; division into departments; their characteristics. The paranasal

	sinuses and canals. Specific, age, and sexual features of the structure of the skull bones. Skull bone development. Skeleton of extremities. General characteristics of the limb skeleton. The division of the skeleton of extremities into belts and links. Species and age features of the skeleton of pectoral and pelvic limbs of domestic animals. The development of the limb skeleton. Features of the skeleton limb structure in birds. Theme 4: General characteristics of bone connections, their development. Synthrosis and diarthrosis, their types. Structure of the joint. Classification of joints and their location depending on the nature of movement in the joint. Axial and peripheral skeletal bone connections. Theme 5: General skeletal muscle characteristics. Relationship of the muscular system with other systems of the body. Muscle development. Muscle structure as an organ. Muscle types. Physical properties and chemical composition of the muscles, factors that affect the development, shape, structure and nutritional quality of the muscles. Muscle classification by origin, function, placement, shape and internal structure. Auxiliary muscles. Anatomical structure of fasciae, blocks, sesame bones, synovial bags, tendon and synovial vaginas. Blood supply and innervation of muscles. Muscle development in ontology and phylogeny. Features of muscle building in birds. The role of muscles in statics and dynamics. Theme 6: Muscles of the torso and head. General patterns of structure and placement, species and age characteristics of the muscles of the head, spine, chest and abdominal walls. Tail muscles. Limb muscles. General plan of the structure and location of the muscles of the limbs, their functional significance. Muscles of the thoracic limbs. Pelvic floor muscles. Module 2. Dermatology Theme 7: The skin and its derivatives. Morphofunctional characteristics of the skin and its derivatives and their development. Leather, its structure. The structure of the mammary glands, hooves, scallops, molluscs and other derived skin Blood supply and innervation of skin and derivatives. Leather cover in poultry. Module 3. Splannology Theme 8: General characteristics of internal organs. The importance of the internal organs in the development and life of the organism. General patterns of structure of internal organs in relation to their function. Tubular and parenchymal organs. Body cavities, their development. Serous membranes and their derivatives. Division of abdominal cavity into departments and areas. Blood supply and innervation of internal organs. Anatomical composition, patterns of structure of respiratory organs, related to their function. Structure of the nose, nasal cavity, larynx, trachea and lungs, their development, species features, topography. Theme 9: The anatomical composition of digestive organs, their division into departments, their functional significance, location and development. Main intestine (oral cavity and pharynx). Structure, development and function of the organs of the intestine. The lobby of the mouth, the organs of the oral cavity, the pharynx, their significance in the digestive, species characteristics.

	Fore intestine (esophagus and stomach). Development and importance of esophagus and stomach in domestic mammals. Stomach classification. The structure of single-chamber and multi-chamber stomachs, their topography. Topic 10: Medium (small) and hind (large) colon. The anatomical composition of the small intestine, its structure and development. Wall and wall (liver and pancreas) digestive glands of the small intestine, their structure, topography and features in domestic animals. Anatomical composition of the colon, its development, structure, species features, topography. The structure of the anus. Topic 11: Urinary organs. Anatomical composition and functional characteristics of the urinary system. Structure and classification of kidneys, ureter, bladder and urethra, species features, topography and development. Theme 12: Female reproductive organs. Morphofunctional characteristics and anatomical composition of the female genital organs of mammals. The structure of the ovary, oviduct, uterus, vagina, anterior and external genitalia of the female, their functional significance, species characteristics, development and topography. Classification of uterus. Topic 13: Male Reproductive Organs. Anatomical composition and functional characteristics of male reproductive organs. The structure of the seminal sac, the testes and appendages, the fallopian tubes, the seminal cord, the genitourinary canal, the penis and the foreskin, species features, development and their topography. Module 4. Angiology Topic 14: General concepts of the cardiovascular system. Anatomical composition, morpho-functional characteristics of the circulatory system and its value. Basic laws of structure, development and interrelation of the vascular system with other systems of the body. Anatomical structure of the heart, blood supply, innervation, conductive system of the heart, species and age features, topography. Heart development. Circles of circulation. Blood circulation in the fetus and adult animal. The structure of the arteries, veins and capillaries, their relationship. Basic regularities of structure, course, branching of vessels of large and small circles of circulation. The concept of collateral, collectors, anastomoses. Theme 15: Branching of the main arteries and veins in the body of animals, their functional importance. The portal vein system. Features of the outflow of blood from the breast and rectum. Topic 16: Morpho-functional characteristics of the lymphatic system. General principles for the location of lymph nodes, blood vessels, ducts and their relationship with the venous system. Features of structure of lymphatic vessels and lymphatic capillaries. Development of the lymphatic system. Innervation. Morphological characteristics of hematopoietic organs and immune protection. The structure of the spleen, red bone marrow, lymph nodes, tonsils, lymphoepithelial organs, thymus gland (thymus), etc., their topography, species and age characteristics. Topic 17: Morphofunctional characteristics of endocrine glands and the concept of humoral regulation of body functions. Classification of internal secretion glands by origin and function. Features of the structure and location of the glands of the internal

	secretion (thyroid, parathyroid, adrenal, pituitary, sex glands, etc.) and their development. Module 5. Neuroscience Theme 18: Anatomical composition and morphofunctional characteristics of the nervous system. The division into the central and peripheral parts. Philo- and ontogeny of the nervous system. General patterns of structure of the nervous system. The principle of neural structure and feedback. Theme 19: The spinal cord. Anatomic structure of the spinal cord and its membranes. Intercolumn spaces. Spinal cord blood supply. Development of the spinal cord. Leading pathways of the central nervous system. Spinal nerves, general patterns of their formation, structure, and branching. Topic 20: The brain. Anatomical structure of the brain, its shell. Intercolumn spaces. Blood supply to the brain. Arteries and venous sinuses of the brain. The cranial nerves and their morphological functional characteristics. Classification, course and branching of cranial nerves. Theme 21: Anatomical composition and morpho-functional characteristics of the autonomic nervous system. The sympathetic part of the autonomic nervous system, its structure, location, functional value. Parasympathetic part of the autonomic nervous system, its structure, location of centers, its functional significance Theme 22: The sense organs. Classification and characterization of sense organs. The concept of analyzers. The general structure of the organ of vision and hearing. Communication of the sense organs with the centers of the brain and spinal cord. the development of sense organs. Sensory organs in birds.
	Practical topics: Module 1. The apparatus of motion Content module 1. Osteology 1.General structure of the vertebra. Features of the structure of the first, typical and last thoracic vertebrae. Specific features pectoral vertebrae 2. The structure of the thoracic segment. Structure of ribs of the chest and chest. 3. General patterns of structure of the cervical vertebrae (for example, a horse). Specific features of the structure of the cervical vertebrae. 4. Structure of lumbar vertebrae, sacral bone and caudal vertebrae. 5. Shovel structure. The structure of the pelvic bone and pelvis as a whole. 6. The humerus. Astragalus. 7. Building of bones of a forearm and a brush. 8. Shin and foot structure. 9. The general structure of the skull. Occipital bone. The structure of the main or cuneiform bone. 10. .Digital bone. Stony bone. 11. The structure of the frontal, parietal, and interciliary bones. 12. Lattice and lingual bones, shells and blades. Structure of the nasal, lacrimal, maxillary, palatine and pterygoid bones. 13. .Construction of maxillary and incisor bones. Lower, maxillofacial and sinus skulls. 14. Features of the skeleton structure of poultry. 15. Modular control (osteology).

	Content module 2. Syndesmology 16..Types of skeletal joints, structure and classification of joints, axial skeletal joints. 17. Connection of bones of extremities. 18. Modular control (syndesmology). Content module 3. Myology 19. Subcutaneous and shoulder muscles. 20. Dorsal muscles of the spine. 21. Ventral muscles of the spine, ventral muscles of the neck. Head muscles 22. Muscles of the chest and abdominal walls, structure of the inguinal canal and diaphragm. 23. Muscles of the thoracic limbs. 24. Pelvic limb muscles. Peculiarities of muscle structure in poultry. 25. Modular control (myology) Module 2. Dermatology 26. The structure of the skin as an organ, its importance. Structure of horny derivatives of the skin (hoof, rat's, horns, molluscs, hair) 27. Structure of glandular derivatives of skin, mammary gland of domestic animals, sweat and sebaceous glands. 28. Modular control (dermatology) Module 3. Splannology Content module 4. Breathing apparatus 29. Structure of the nose, nasal cavity, additional sinuses of the nose.The structure of the larynx. 30. The structure of the trachea and lungs. Structure of the chest cavity, serous membranes, mediastinum. 31. Modular control (respiratory system). Content module 5. Digestive apparatus 32. Mouth, mouth (lips, cheeks, gums, firm and soft palate). Tonsils, bottom of mouth, salivary glands. 33. Language, its structure, specific features. 34. Teeth, their structure, classification. 35. The pharynx, its structure, the act of swallowing. 36. The structure of the esophagus and unicameral stomach, topography. The structure of the abdominal cavity. Division of the abdominal cavity in the area. Serous membranes and their derivatives. 37. Structure of a multi-chamber stomach, topography. 38. Middle bowel, structure, species features, topography. 39. Structure of the parathyroid glands (liver and pancreas), species features, topography. 40. The large intestine, its structure, species characteristics, topography, structure of the anus. 41. Modular control (digestive organs). Content module 6. Urinary system 42. Kidney structure, classification, species characteristics, structure of the ureter, bladder and urethra. 43. Female reproductive organs, ovary, fallopian tube, uterus, vagina, urogenital vestibule, external genitalia. 44. Male reproductive organs. The structure of the seed box, the seed box and the appendix. 45. Construction of the family cord, the duct, the urogenital canal, the additional glands. The structure of the penis and foreskin

	46. Modular control (urogenital apparatus). 47. Features of structure of internal organs in poultry. Module 4. Angiology 48. Anatomical structure of the heart, heart shirt. 49. Circulatory circulation in animals after birth and in the fetus. Aortic arch, thoracic aorta and its branches. 50. Intestinal aorta and its branches. 51. Arteries of the head. Veins of the head. 52. Arterial arteries of the thorax. Thoracic veins. 53. Vessels of the pelvic walls and organs of the pelvic cavity. 54. Arteries of the pelvic limbs. Pelvic limb veins. 55. Formation of the cranial and caudal vena cava, the outflow of blood from the breast and rectum. 56. The general structure of the lymphatic system, the structure and topography of the lymph nodes, large ducts, lymphatic vessels and capillaries. Lymphoid formation. 57. Structure of the spleen, red bone marrow, lymph nodes, tonsils, lymphoepithelial organs, thymus, their topography. Anatomical structure and topography of endocrine glands (thyroid, parathyroid, epiphysis, pituitary, adrenal glands) 58. Modular control (angiology). Module 5. Neuroscience 59. The structure of the diamond-shaped brain. 60. Structure of the middle and middle brain. 61. The terminal brain. 62. Brain membranes, their structure, inter-bilious spaces, vessels (arteries and venous sinuses). 63. I-IV, VI, VIII-XII pairs of cranial nerves. 64. V pair of cranial nerves. 65. VII pair of cranial nerves 66. The structure of the spinal cord, its membranes, interspace, vessels and nerves. Spinal nerve roots. Actually the leading system of a spinal cord. Leading pathways of the central nervous system. 67. Cervical, thoracic, cerebrospinal, nerve of the brachial plexus. 68. Lumbar, sacral, caudal nerves, nerves of the lumbosacral plexus. 69. The sympathetic part of the autonomic nervous system. 70. Parasympathetic part of the autonomic nervous system. 71. Anatomical structure of the eye. 72. Anatomical structure of the organ of hearing and balance. 73. Modular control (nervous system).
Language of instruction	Ukrainian

Subjects	**Cytology, histology, embryology**
Teacher	Novak Vitaliy, DVM, PhD, Professor of the Department of Anatomy and Histology after name P. Kowalsky, Antonina Melnychenko, DVM, PhD, Associate Professor of the Department of Anatomy and Histology after name P. Kowalsky, Olga Bevz, DVM, PhD, Associate Professor of the Department of Anatomy and Histology after name P. Kowalsky/
Course and semester in which you plan to study	1B course 2 semester and 2 course 3 semesters

the discipline	
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of the following knowledge and skills by students: Knowledge - the structure of the light microscope and the rules of work with it; - the main stages of histological preparation; - structure and function of somatic and germ cells, their reproduction; - basic stages of vertebrate embryogenesis; - structural organization, function and sources of development of tissues and organs at microscopic and submmicroscopic levels; Skill - work with a light microscope; - to select material for histological examinations, to fix it, to make histological preparation by the classical method of staining - hematoxylin and eosin; - to recognize components of cells on the electrongrams; - differentiate on histological preparations certain types of cells, tissues, organs and their specific features; - present the results of their own theoretical and practical skills in the diagnosis of histopreparations.
Description of the discipline	
Prerequisites necessary for the study of the discipline	To study Cytology, Histology, Embryology students must have basic biology training based on general secondary education
Maximum number of students who can study simultaneously	25 students
Classroom topics	**Topics of lectures** **Module 1. Cytology** 1.Historical reference for development, histology and embryology, its place among the biological sciences. Preformation and epigenesis theory. Science schools are supporters of these theories. Cell Theory of Theodor Schwann and Its Importance for the Biological Sciences. Subject and methods of histological examinations and optical instruments in histology. General morphofunctional characterization of cells, structural composition of protoplasm, its physic-chemical properties. Organelles of membrane origin, non-membrane, special. Histophysiology of metabolism in the cell, synthesis of substances, exocytosis, endocytosis. Inclusion of the cytoplasm. Inclusion classification and values for cell viability. Mitotic cell division, cell cycle in life (interphase and its periods). Structural changes of the cell in prophase, metaphase, anaphase, telophase. Amitosis and its species. Endomitosis and meiosis, their biological significance. **Module 2. Embryology** 2. Embryology. Development and formation of embryology as an independent science. The concept of ontogeny and phylogeny.

	Haeckel's biogenetic law. Mammalian germ cell structure, development (spermatogenesis and ovogenesis). Types and classification of eggs, depending on the number of nutrients and their topography. The biological significance of fertilization. Fertilization periods and phases. Types of fertilization of fertilized eggs. Development of the lanceolate (morula, blastula, gastrula, neurula, chordula). Differentiation of the middle germ – mesoderm. Fish and amphibian development. Egg structure, zygote division and gastrulation in birds. Development ofoutside the fetal membranes of birds (amnion, allantois, yolk sac, serosa). Periodization in the development of birds. Features of zygote separation and gastrulation in mammals. Development of outside mammalian fetal membranes (amnion, allantois, yolk sac, chorion). Placenta, their anatomical and histological classification. **Module 3. General histology** 3.1. Epithelial tissue. Morphofunctional characteristics and theories of tissue formation. Classification of tissues in the body and general morphophysiological characteristics of these tissues. Epithelial tissue, morphological, histogenetic and physiological classification, and histopathology of the covering epithelium. Glandular epithelium, types of secretion, periods of secretory activity. 3.2. Connective tissue. Classification of connective tissues into trophic, supporting. Trophic functiontissues, histostructure: mesenchyme, reticular, fat, pigment. Mammalian blood. Histomorphology, cellular composition and classification of blood cells. Plasma and serum. Features of the blood of birds. Embryonic and postnatal hematopoiesis. Loose connective tissue, cellular diferon and intercellular substance composition. Dense connective tissue.A group of connective tissues with pronounced supporting function. Cartilage, histostructure, classification and chondrogenesis. Bone tissue, classification, histostructure of lamellar and fibrous bone tissue. Periosteal and endochondral osteogenesis. 3.3. Muscle tissue. Histophysiology and histogenesis of muscle tissues, classification. Smooth muscle tissue, histostructure and histogenesis. Skeletal muscle tissue (somatic), its histostructure and histogenesis. The structure of myofibrils, contractile elements (sarcomere formula). Muscle fiber contraction chemistry. 3.4. Nerve tissue. General morphofunctional characteristics and histogenesis. Reflex arc, histostructure and classification of neurons. Neuroglia. Types of neuroglia. Nerve fibers, their classification (myelin and nonmyelin). Features of histostructure and histogenesis. Receptors, classification and structure of free and encapsulated nerve endings. Effectors, features of neuromuscular contact structure. Interneural connections (synapses). Synapses classification. **Module 4. Special histology** 4.1. The system of organs of the skin and derivatives of the skin. General morphofunctional characteristics of the skin and its derivatives. Ontogenesis of the skin. Histostructure of skin with hair. Hair structure and histogenesis. Sweat and sebaceous glands, their histostructure as derivatives of the skin. Histological structure of mammary gland of cattle parenchyma during lactation

and dryness. Hoof histostructure.
4.2. The digestive system. General morphofunctional characteristics. Features of histostructure of tubular organs. Separation of the intestinal tube into departments and features of the structure of the mucous membrane. The large intestine and the organs located in it. Ontophylogenesis of the oral cavity. Histostructure of the tongue, papilla classification and taste analyzer. The salivary glands (parotid, sublingual, mandibular). Teeth, histostructure of tooth wall and organogenesis (roots, crowns, cervix).
4.3 Histostructure of the esophagus wall. Histostructure of single-chamber stomach wall, peculiarities of mucous membrane structure, structure of fundal glands, classification and morphofunctional characteristics of glandul cells. Histostructure of ruminant ventricles. Features of the structureov walls of duodenum and small intestines. Enterocyte ultrastructure and nutrient absorption process. Features of histostructure of the colon. Histostructure of the liver, liver lobes, classification of liver cells, ultrastructure of hepatocytes. Circulation in the liver. Pancreas. Histocostructure of exocrine and endocrine parts of the pancreas.
4.4. Respiratory system. General morphological characteristics and ontogeny. Features of histostructure of the nasal cavity, olfactory epithelium, trachea, large bronchi, medium, small and bronchioles. Histostructure of the pulmonary acinus. Peculiarities of histostructure between alveolar septa and gas exchange process. Histostructure of bird lungs.
Module 5. Special histology
5.1. Urinary system. General morphofunctional characteristics of the urinary tract system and ontophilogenesis. Classification and topography of kidneys in different species of farm animals. The nephron, its structure and relation to other components of a kidney, phases of urination. Juxtaglomerular complex and hormonal activity of kidneys. Features of blood circulation of kidneys. Urinary tract.
5.2. The system of reproductive organs of males and females. General morphofunctional characteristics of the reproductive system. Ontophilogenesis of male reproductive organs. Indifferent gender structure and gender differentiation. Genesis of external genitalia. The histostructureof the testes, prostate.
General morphofunctional characteristics of the reproductive system of females. Genesis of female reproductive organs. Ovarian histostructure and hormonal activity. Histostructure of the uterus. External genitalia of the female. Histostructure of different types of placenta.
5.4. Endocrinology. General characteristics of the endocrine glands, the communication of nervous and humoral systems. Histogenetic classification of endocrine glands. Glands of follicular and trabecular types of structure. The pituitary-hypothalamic system and the connection of the pituitary gland with other endocrine glands. Genesis, structure and neurohumoral activity of parts of the pituitary gland. The epiphysis and the thyroid gland, the parathyroid gland, their structure and development. The adrenal glands of their structure and development, the concept of interrenal and chromaffin systems.
5.5. Cardiovascular system. System of hematopoietic organs.

General morphofunctional characteristics of the cardiovascular system. Classification of vessels. Classification of arterial vessels and their histostructure, veins of muscular and non-muscular type. Type and structures of capillaries. Histogenesis of vessels. Histostructure and histogenesis of the heart. Features of the structure of the endocardium. Cardiac muscle tissue, typical and atypical cardiomyocytes.
General morphofunctional characteristics of immune protection and lymphopoiesis. Central organs of hematopoiesis: red bone marrow, thymus, their organogenesis and histostructure. Peripheral organs of lymphocytopoiesis: lymphatic follicles, nodes, histostructure and organogenesis. The spleen, features of its histostructural organization (white and red pulp) and circulation.
Module 6. Special histology
6.1. Nervous System. General morphofunctional characteristics and ontogeny. Reflex arcs (somatic and vegetative). Histostructure of the membranes of the spinal cord and brain. Organogenesis and histostructure of the spinal cord, nuclei of gray matter. Histology of the cerebral cortex and patterns of synapse formation. Histostructure of the nerve trunk, perineural vagina. Spinal and autonomic ganglia. Features of morphology of the autonomic part of the nervous system.
Aesthesiology. General characteristics and classification of sense organs. The concept of analyzers. Organs of balance and hearing. Hearing analyzer. General characteristics and genesis of visual organs. Anatomical and histological structure of individual elements of the eyeball and its accessories. Eye accommodation. Vision analyzer
Practical topics
Module 1. Cytology. The structure of the microscope and its rules of operation. Inclusion of the cytoplasm.
Preparations: 1. Plant cell.
2. Inclusion of melanin pigment.
2.Organoid cells.
Preparations: 1. Tigroid substance (endoplasmic reticulum)
2. The Golgi Complex.
3. Reproduction of cells.
Preparations: 1. Mitosis2. Amitosis.
Module 2. Embryology
4.Germ cells.
Preparations: 1. Sperm cells.
2. Mammalian ovum.
5. Special embryology:
1. Fragmentation of zygote amphibians
2. Amphibian blastula.
3. Gastrula amphibians.
4. Neyrula amphibians.
5. The primary strip.
6. Primary Strip of the Chicken Embryo (Cross Section)
7. Body and amniotic folds of the germ of a chicken.
Macropreparations: 1. Diffuse placenta of pigs.
2. Cotyledonous placenta of a cow.
3. Zonal placenta of the rabbit.
6.Modular control 1,2
Module 3. General histology

	7. Epithelial tissue. Preparations: 1. Simple squamous epithelium.2. Stratifiedsquam-ousepithelium.3. Simple columnar epithelium. 8. Connective tissue Preparations: 1. Mesenchyme2. Reticular tissue.3. Fatty tissue 9. Connective tissue Preparations: 1. Loose connective tissue.2. Dense connective tissue 10. Connective tissue Preparations: 1. Mammalian blood. 2. The blood of birds. 11. Cartilage tissue. Preparations: 1. Hyaline cartilage.2. Elastic cartilag 3. Fibrous cartilage. 12. Bone tissue. Preparations: 1. Cross section of compact tubular bone substance.2. Longitudinal section of a compact tubular bone substance.3. Enchondral development 13. Muscle tissue Preparations: 1. Smooth muscle tissue. 2. Skeletal muscle tissue 14. Nerve tissue Drugs: 1. Multipolar nerve cells. 2. Myelin nerve fibers. 3. Encapsulated nerve endings (Fater-Pacini) 15. Modular control 3 **Modular control 4. Special histology.** 16. Dermatology Preparations: 1. Skin without hair.2. Skin with hair 17. Derivatives of skin Preparations: 1.Mammary glandduring lactation. 2. Mammary gland during the dry period3. The hoof wall 18. Digestive. Mouth Preparations: 1. Tongue2. Taste bulb3. Tooth development 19. Digestive Preparations: 1. Esophagus.2. The bottom of the stomach. 20. The stomachs of ruminants Preparations: 1. Rumen2. Reticulum3. Omasum 21. The intestine Preparations: 1. The duodenum.2. The jejunum 3. The colon 22. Salivary glands Preparations: 1. Parotid gland2. The sublingual gland 23. Large glands of the digestive apparatus Preparations: 1. Pig liver.2. Horse liver3. Pancreas. 24. Digestive and respiratory organs Preparations: 1. The glandular stomach of bird 2. Trachea. 25. Respiratory organs Preparations: 1. Mammal lungs 2. Birds' lungs. 26. Module 4. Special histology **Module 5. Special histology** 27. Urinary organs Preparations: 1. Mammalian kidney 2. The bladder 28. Organs urinary and reproduction of males Preparations 1. The testis.2. The urethra. 29. Female reproductive organs

	Preparations: 1. Ovary.2. The uterus 30. Endocrinology Preparations: 1. Pituitary gland.2. Thyroid gland. 31. Endocrinology Preparations 1. Adrenal gland2. The placenta of a cow 32. Cardiovascular system Preparations: 1. Myocardium.2. The capillary3. Artery and vein 33. Organs of hematopoiesis Preparations: 1. Thymus2. Lymph node.3. The spleen. 34. Module 5. Special histology **Module 6. Special histology** 35. The nervous system Preparations: 1. Spinal cord.2. The cortex of brain. 3. The cerebral cortex 36. The nervous system Preparations: 1. Spinal ganglion2. Vegetative ganglion 3. Nerve trunk 37. The sense organs Preparations: 1. Retina.2. The Corti organ Modular control 6
Language of instruction	Ukrainian, English

Subjects	**Animal physiology**
professor	Nicholas Nishmenenko Doctor of Veterinary Sciences, Professor Stovbetska Lyudmila Stepanivna, Yemelyanenko Alla Anatoliivna, Candidates of Veterinary Sciences, Assistants
Course and semester in which you plan to study the discipline	2B course, 3 and 4 semesters
Faculties whose students are encouraged to study the discipline	Faculty of Veterinary Medicine, Biology Faculty of Technology
A list of competencies and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of such knowledge and skills by students. Knowledge: - regularities of the course of physiological processes and mechanisms of regulation of functions in different organs and systems of organs in healthy different species of domestic and other species of animals; - influence of different internal and external factors on the course of physiological processes and mechanisms of their regulation in healthy animals of different species; - methods of investigation of the basic functions of different organs and systems of organs in domestic and other species of animals; - methods of research of morphofunctional parameters of blood, pulse rate, respiration, body temperature, composition of urine, milk and colostrum, gastric juice and bile, the study of which has practical use in the practice of veterinary medicine; - analysis of changes in physiological norms of homeostasis of blood, urine, milk and colostrum, composition of basic digestive juices, pulse rate, respiration, body temperature; - results of biochemical studies of blood - indicators of metabolism of proteins, fats, carbohydrates, minerals;

	- results of electrocardiography, electroencephalography, rheovasography, sonography. Skill: - to evaluate the course of physiological processes and mechanisms of their regulation in different organs and systems of organs of clinically healthy animals; - to evaluate the impact of species, age, sex, productivity, physiological condition and time of year, time of day, ambient temperature, physical activity, complete feeding, providing animals with nutrients and minerals, etc. on the course of physiological processes; - to possess methods of investigation of the basic functions of different organs and systems of organs in different species of animals; - to have methods of research of morpho-functional indicators of blood (number of erythrocytes, leukocytes, platelets, leukemia grams, ESR, color index, hemoglobin protein content in blood plasma, blood pH), determination of pulse rate, respiration, body temperature, urine composition, composition colostrum, gastric juice and bile, determination of motor activity of digestive tract; - analyze and compare the results of laboratory and functional studies with the limits of physiological norms that are inherent in different species of animals; - have basic methods of determining the indicators that characterize the metabolism of proteins, lipids, carbohydrates, minerals; - to have basic devices used in electrocardiography, rheovasography, ultrasound diagnostics.
Description of the discipline	
Prerequisites necessary for the study of the discipline	Anatomy, histology, biochemistry.
Maximum number of students who can study simultaneously	10-12 applicants
Classroom topics	**Lecture topics:** 1. Introduction. The doctrine of the blood system. 2. Formed elements of blood and their function. 3. Physiology of the cardiovascular system. 4. Functional characteristics of blood vessels. 5. Physiology of excitatory tissues. 6. Physiology of the central nervous system. 7. General ideas about higher and lower nervous activity. 8. Physiological basis of behavior. 9. General properties of analyzers. Physiology of analyzers of vision, hearing. 10. Physiology of analyzers of taste, smell and skin. 11. The physiology of the digestive system. The essence of the digestive process. 12. Digestion in the stomach. 13. Digestive processes in the multifaceted stomach of ruminants. 14. Membrane digestion. Digestion in the gut. 15. Physiology of the respiratory system. The essence of the process of respiration and its mechanism. 16. The physiology of the processes of selection and its importance

	for the body. Physiology of kidneys and skin. 17. Physiology of endocrine regulation. 18. Physiology of endocrine glands. 19.Physiology of reproduction and lactation. Sexual and physiological maturity of females and males. 20. Physiology of animal reproductive organs. 21. Physiology of metabolism. 22. Physiology of thermoregulation.
	Practical topics: 1. Instruction. Familiarity with the methods of physiological research. 2 .. Ratio and relationship of blood components. 3. Hemolysis and osmotic resistance of erythrocytes. 4. Physiological significance of erythrocytes in the blood of animals. 5. Physiological significance of leukocytes in the blood of animals. 6. Differentiation of blood cells of different species of animals and birds. 7. Physiological significance of hemoglobin in the blood of animals and birds. 8. Blood groups. 9. Physiological properties of the heart muscle. 10. Mechanisms of regulation of activity of heart. 11. The role of the pumping function of the heart. 12. Dynamics of excitation of the heart. Electrocardiogram registration and analysis 13. Physiological patterns of hemodynamics. 14. Regulation of blood circulation. 15. Physiology of excitatory tissues and central nervous system 16. The skeletal muscle contraction mechanism 17. The work and theories of skeletal muscle fatigue 18. Bioelectric phenomena in living tissues 19. Spinal cord reflexes 20. Properties of nerve centers. Nervous regulation of muscle tone. 21. Role of the brain in the regulation of body functions 22. Mechanisms of influence of autonomic nervous system on activity of an organism. 23. Complex reflex activity of the nervous system 24. Physiological basis of behavior 25. Visual sensory system 26. Auditory sensory system 27. Somatosensory system. 28. The mechanism of salivation. Enzymatic properties of saliva. 29. Mechanism of secretion of gastric juice. Enzymatic activity of gastric juice. 30. Role of bile and pancreatic juice in digestive processes. 31. Motor activity of the digestive tract. 32. Digestive processes in an animal's multi-chamber stomach. 33. Mechanism of respiratory movements 34. Pulmonary volumes and capacities. 35. Mechanism of urine formation. 36. The role of the hypothalamic-pituitary system in the regulation of physiological functions. 37. Endocrine function of the pancreas. 38. The physiological role of hormones in the regulation of ho-

	meostasis. 39. Mechanisms of regulation of sexual functions in animals. 40. Sexual reflexes and animal behavior. 41. Regulation of milk production. 42. Mechanisms of thermoregulation. 43. Regulation of metabolism intensity.
Language of instruction	Ukrainian

Subjects	**Pathological physiology of animals**
Teacher	Shmayun S.S. - Associate Professor of the Department of Normal and Pathological Animal Physiology, Candidate of Veterinary Sciences Poroshynska O.A. - Assistant, Department of Normal and Pathological Animal Physiology, Candidate of Veterinary Sciences
Course and semester in which you plan to study discipline	3B course 5-6 semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	Discipline "Pathological physiology" provides for gaining the following competences: General: 1. Ability to comply with ethical and legal standards applicable to health care sectors. 2. Ability to acknowledge mentoring principles, collaborate in a team with other professionals, and contribute to teamwork. 3. Ability to apply effective communication methods. 4. Ability to communicate in state and foreign languages orally and in writing. 5. Ability to work with professional information. 6. The ability to learn, pursue personal professional development and put knowledge into practice. 7. Ability to be responsible for professional performance. 8. Ability to use information and communication technologies in pathophysiology. special: 1. Ability to understand the subject area of pathophysiology. 2. The ability to analyze the structural and functional relationships and the sequence of stages of pathological processes. 3. The ability to interpret the pathology of the cell and to characterize the pathological processes that cause the manifestation of disease. 4. The ability to interpret the etiology, pathogenesis. 5. The ability to diagnose diseases. As a result of studying the discipline, the applicant should know: basic concepts of general nosology, typical pathological processes and pathology of organs and systems; general biological significance of typical pathological processes, their role in pathology; general patterns underlying pathological processes. Be able to: analyze cause and effect disorders, pathological and adaptive compensatory reactions, find the leading link of pathogenesis; apply the necessary methods for modeling and analysis of typical pathological processes; to solve calculation and situational tasks, to analyze data of real clinical situations. to possess: methods of modeling of disorders of peripheral circulation; acute inflammation; hypoxia, by differentiation of temperature curves.

Description of the discipline	
Prerequisites for the study of the discipline	Interdisciplinary Relations. Pathological physiology as a discipline: a) is based on the previously studied basic principles and knowledge of the sciences, studying the properties of the organism and its life (anatomy, histology, biological physics, inorganic and organic chemistry, biological chemistry, biology, normal biology, normal biology genetics), integrates with these disciplines; b) is based on knowledge of disciplines that study the properties of environmental factors capable of causing disease (physics, inorganic chemistry, food chemistry, microbiology, veterinary sanitation and hygiene, veterinary ecology, veterinary radiobiology). They provide the information needed to study the etiology; c) develops professional skills in clinical thinking; provides the possibility of diagnosis, treatment, prevention of the emergence and development of diseases; d) creates theoretical bases for students to master pharmacology, clinical pharmacology and pharmacotherapy.
Maximum number of students who can study	**10–13 applicants at a time**
Classroom topics	Lecture topics: Theme 1: The subject of pathophysiology. Introduction. The subject and tasks of pathophysiology. The place of pathophysiology in veterinary education and its relation to other sciences. History of pathophysiology. The importance of pathophysiological research in animal health, the development of preventive care in veterinary medicine, the development of new methods and treatments for sick animals. Experiment is the main method of pathophysiology. Types of experiment. The value of experiment in the development of pathophysiology. Modeling of pathological phenomena is an important tool for experimental pathology. Modern methods used in the experiment. Experimental therapy. Brief data on the history of pathophysiology. The main stages of its development. Leading role of foreign and domestic scientists in the development of pathophysiology. Structure of the training course in pathophysiology (general nosology, typical pathological processes), special pathophysiology (pathophysiology of organs and systems). Theme 2: General nosology. Basic concepts of general nosology. The concept of health. Transitional stages of healthy body to illness. Pre-illness. The concept of pathological response, pathological process, pathological condition. The concept of illness. Disease as the only set of damage and protective and adaptive reactions of the body. Principles of classification of the disease. Types of disease in progress: acute, subacute, chronic. Disease periods: incubation (latent), prodromal, pronounced clinical features (actual disease), and end of disease. Recovery complete and incomplete: relapses, complications. Terminal status. Dying as a stage process. Preagonia, agony, clinical death, biological death. Pathogenetic bases of resuscitation. Anabiosis. Winter and summer hibernation. Theme 3: General etiology. Etiology of diseases. The role of knowledge of the etiology of the disease for the prevention and treatment of animals. Causes and conditions of the disease. The concept of external and internal causes of the disease. Properties of pathogenic factors, their main categories. The importance of studying the etiology of diseases for their prevention and treatment of animals. The role of the etiological factor in the development of

	the pathological process. The etiotropic principle of disease prevention and treatment of diseased animals. General pathogenesis. Relationships and role of etiological and pathogenetic factors in pathogenesis. The role of structural and functional changes in pathogenesis. The role of general and local in pathogenesis. Leading link and vicious circles during illness. Damage as the initial link of pathogenesis. Damage levels: submolecular, molecular, subcellular, tissue, organ, organism in general. Causal relationships in the mechanism of origin and development of diseases. Significance of disorders of nervous and humoral regulation in the development of the disease. Local and general responses to damage, their relationship. Ways of distribution of pathogenic factors in the body. Value of species, breed and age in pathogenesis. Adaptive and restorative reactions of the body. Mechanisms of recovery and restoration of broken functions. Theme 4: Reactivity of an organism and its value in pathology. Reactivity, its species. Reactivity and resistance of the body, variants of their relationship. The value of nervous and endocrine systems in the formation of the reactivity of the body. The role of the reactivity of the organism in the development of the pathological process. Influence of environmental factors on reactivity. Barrier adaptations. Phagocytosis. Topic 5. The role of heredity, constitution and age in pathology. Hereditary and congenital diseases. Etiology of hereditary diseases. Hereditary diseases caused by gene mutations. Diseases inherited by recessive type. Diseases transmitted by the dominant type. Chromosomal diseases. Pathogenesis of hereditary diseases. Congenital diseases and their difference from hereditary. The value of maternal effect in pathology. The constitution of farm animals as a favorable factor in the occurrence of diseases. The value of the constitution in providing resistance to diseases of high-yielding animals. The importance of species, sex and age of animals in the onset and manifestation of disease. Topic 6: Pathological processes in tissues. Tumors. Pathophysiology of tissue growth. Hyperbiotic processes. Hypertrophy. Hyperplasia. Regeneration. Physiological regeneration. Structural regeneration. Pathological regeneration. Tissue regeneration. Regeneration of connective tissue. Metabolism in regenerated tissue. Factors that cause the regeneration process. Hypobiotic processes. Atrophy. Types of atrophies: physiological, pathological, senile, neurogenic, from endocrine insufficiency, pressure, malnutrition. Dystrophy. Necrosis. Tumor growth. Tumors as a pathology of tissue growth. Biological features and classification of tumors. The main properties of benign and malignant tumors. Etiology of tumors. Chemical, physical and biological carcinogens. Pathogenesis of the tumor process. Metabolism in tumors (carbohydrate, protein, metabolism of amino acids, lipids, nucleic acids). The spread of tumors in animals. Experimental oncology. Merit Novinsky in the development of experimental oncology. Tumor transplantation, autotransplantation, isotransplantation, heterotransplantation, homotransplantation. Tumor exploration. Tumor-organism relationships. Reactivity and blastomogenesis. Influence of a tumor on an organism. Blastomatous cachexia.

	Theme 7: Violation of acid-base equilibrium and water-electrolyte exchange. Acidosis, alkalosis. Their types, causes, mechanisms of development and consequences. Mechanisms of their elimination. Pathophysiology of water-electrolyte exchange. Edema and dropsy, their classification, pathogenesis, significance for the body. Topic 8: Typical Metabolism and Energy Disorders. Violation of regulation of metabolism. Disruption of the basic exchange. Disruption of carbohydrate metabolism at the stage of absorption, utilization and use of carbohydrates. Hyperglycemia. Diabetes. Hypoglycemia. Intermediate carbohydrate metabolism disorders. Disorders of lipid metabolism. Fat exchange disorders at the stage of absorption, transport, deposition and use of lipids. Types of hyperlipemia. Ketoses. Fat infiltration. Adiposity. Disorders of lipid metabolism in adipose tissue. Cholesterol metabolism disorders. Pathophysiology of protein metabolism. Disorders of digestion, absorption and synthesis of proteins. Hypoproteinemia. Hyperproteinemia. Disorders of amino acid metabolism. Disruption of nucleoprotein metabolism. Disorders of the exchange of nitrogen-containing substances. Impaired nitrogen balance in the body. Azotemia. Hyperammonemia. The role of disorders of protein structure (prion proteins, enzymes, etc.) in the occurrence of pathological changes in tissues and the development of diseases. Topic 9: Pathogenesis of inflammation and its outcome. Pathogenesis of inflammation. Changes in inflammatory tissue. Biochemical and physicochemical changes in the inflammation zone. Inflammatory mediators. Vascular changes in case of inflammation. Exudation, leukocyte emigration and mechanism of their development. Chemotaxis factors. Types and properties of exudate. Proliferation. Reparative stage of inflammation. Proliferation mechanism. Classification of inflammation. The value of inflammation for the body. Relationships of the inflammatory process and the body. Neuroendocrine regulation of inflammation. Importance of immune mechanisms in the development of inflammation. Biological principles of anti-inflammatory therapy. Topic 10: Pathophysiology of thermoregulation. Definition of feverish concept, general characteristic. Etiology of fever. Pathogenesis of fever: the stages of fever and the nature of thermoregulation at its various stages. Types of fever. Types of feverish reactions. End of fever. Lysis and crises. The dependence of fever on the reactivity of the body. Changes in metabolism and physiological functions during fever. The biological significance of fever. Topic 11: Pathophysiology of the blood system. General characteristics of disorders of the function of the blood system. Changes in total blood volume. Hypervolemia, hypovolemia, their types and mechanisms of origin, consequences. Blood Transfusion. Hemotransfusion shock. Changes in the quantitative and qualitative composition of red blood cells. Anemia. Principles of classification of anemias. Posthemorrhagic, hemolytic, alimentary, aplastic anemia. Etiology and pathogenesis. Picture of blood in case of anemia. Pathological forms of red blood cells. Function disorders and compensatory effects in case of anemia. Changes in the quantitative and qualitative composition of leukocytes. Leukocytosis and leukopenia, their types. Blood picture in the case of leukocytosis and leukopenia. Leukemia. Definition and classification, eti-

	ology and pathogenesis. Blood picture in case of leukemia. Impaired function and reactivity in the case of leukemias. Pathology of platelets. Etiology and pathogenesis of thrombocytopathy. Changes in blood clotting. Violation of physico-chemical properties of blood. Theme 12: Pathophysiology of the respiratory system. General characteristics of respiratory system disorders. The value of nervous and humoral regulation in respiratory pathology. Indicators of impaired lung ventilation (hyper- and hypoventilation, uneven ventilation). Violation of the central mechanisms of regulation of pulmonary respiration. Paralysis of the respiratory center and causes of its occurrence. Cough: mechanisms of occurrence and consequences. Sneeze. Shortness of breath, its types and pathogenesis. Disorders of the Gering-Brier reflex. Periodic breathing. Abnormal function of the upper respiratory tract. Respiratory disorders during lung pathology (bronchitis, pneumonia, hyperemia, edema, pulmonary emphysema, etc.). Respiratory disorders resulting from impaired lung perfusion. Disorders of the pleura. Pleurisy. Respiratory disorders due to abnormal changes in the structure and structure of the chest and damage to the respiratory muscles. Pneumothorax, its types and consequences. Artificial pneumothorax. Theme 13: Pathophysiology of the urinary system. General characteristics of disorders of urinary and urinary function. The concept of deficiency of kidney function. Extrarenal factors: changes in blood composition, circulatory disorders, digestion, neurohumoral regulation. Renal factors: nephrosis, nephritis, sclerosis of the kidneys. Violation of the neuro-humoral regulation of urination and urination. Disruption of filtration and reabsorption processes. Quantitative and qualitative indicators of diuresis: polyuria, oliguria, anuria. Hypostenuria, isostenuria: causes and mechanisms of occurrence. Disruption of the release of nitrogenous compounds. Uremia, its types and pathogenesis. Qualitative urinary disorders: albuminuria, hematuria, hemoglobinuria, cylindruria. Etiology and pathogenesis of kidney-stone disease. Pathogenesis of renal edema. Mechanism of renal hypertension. Theme 14: Pathophysiology of the nervous system. General etiology of disorders of nervous system function. Impairment of nerve cell function and nerve fiber conduction. Disruption of function of brake synapses. Impaired function of adrenergic and cholinergic synapses. Pathological parabiosis and dominant. Disorders of the motor function of the nervous system. Paresis and paralysis. Hyperkinesis. Ataxia. Asthenia. Aesthesia. Sensitivity disorders (hyposthesia, hypersthesia, anesthesia, paresthesia). Pain, its pathogenesis and protective value. Dysfunction of the autonomic nervous system. Damage to the hypothalamus. Sympathetic innervation disorders. Vegetative neuroses. Violation of higher nervous activity. Consequences of complete removal of the cerebral cortex. Experimental neuroses.

	Practical topics: 1. Introductory session (familiarization with the equipment, study of the rules of safety when working with animals, study of methods of fixation of experimental animals) 2. Action on the body of chemical factors 3. Effects on the body of atmospheric pressure 4. Effects on the body of electric current 5. Effects on the body of high and low temperature Modular control 6. Phagocytosis in vivo 7. In vitro phagocytosis 8. The reaction of hemolysis and the properties of the components involved in it 9. Complement binding reaction 10. Adsorption of the amboscepto on erythrocytes and the absence of complement adsorption on them Modular control 11. Anaphylactic shock 12. Arterial hyperemia 13. Venous hyperemia 14. Thrombosis 15. Embolism, ischemia Modular control 16. Vascular reaction in inflammation 17. Types of exudates. Enzymes of exudates 18. Morphological composition of purulent exudate 19. Wound prints on Pokrovskaya and Makarov 20. Proliferative inflammation Modular control 21. Changing the heart rate and breathing in a fever. Classification of fevers 22. Pathology of erythrocytes 23. Pathology of leukocytes 24. Leukemia Modular control 25. Pathophysiology of the digestive system 26. Pathophysiology of the excretory system 27. Pathophysiology of the nervous and endocrine systems, reproduction and lactation Modular control
Language of instruction	Ukrainian

Name of the course	**Clinical diagnostics and diagnostic imaging**
Teacher	Bezukh Vasyl Mikhailovich Candidate of Veterinary Sciences, Associate Professor The Department of Therapy and Clinical Diagnostics named after Levchenko V.I. Piddnyak Oksana Volodymyrivna Candidate of Veterinary Sciences, Associate Professor The Department of Therapy and Clinical Diagnostics named after Levchenko V.I. Vovkotrub Nataliia Volodymyrivna Candidate of Veterinary Sciences, Associate Professor The Department of Therapy and Clinical Diagnostics named after Levchenko

	V.I. Samoray Mikola Mikolaiovich Candidate of Veterinary Sciences, Associate Professor The Department of Therapy and Clinical Diagnostics named after Levchenko V.I.
Course and semester in which a study is planned discipline	2-3B courses, 4-5 semesters
Faculties whose students are invited to study the discipline	Faculty of Veterinary Medicine
List of competences and related results training that provides discipline	The result of studying the discipline is the acquisition of the following knowledge and skills by students: know: - methods of animal research and to have the technique of application of basic and separate special methods of research (sounding, ECG, blood pressure measurement, etc.); - the main stages of diagnosis, the importance of the syndrome and its place in the general system of diagnosis of diseases; be able to: - to carry out laboratory methods of blood, urine, colostrum, gastric and pancreatic, feces; - analyze the results, their origin, causes, relationships with other changes, diagnostic and prognostic significance of symptoms.
Description of the discipline	
Prerequisites necessary for the study of the discipline	no
Maximum number of students who can study simultaneously	25 students
Classroom topics	**Lecture topics**: 1. Introduction. Methods of clinical study of the animal. 2. General study of the animal. Study of habit, hair and skin. 3. Investigation of subcutaneous tissue. Examination of visible mucous membranes and superficial lymph nodes. 4. Symptoms and syndromes of diseases. Diagnosis. Forecast. 5. Basic methods of heart research. 6. Heart murmurs. Determination of heart noises and their classification. Characteristics of endocardial noises (origin, causes, methods of diagnosis). 7. Exocardial noises and their characteristics (origin, causes, differential diagnosis). 8. Investigation of the arteries and veins. Electrocardiography. 9. Arrhythmias of the heart. 10. Values, scheme and methods of research of the respiratory system. 11. Chest research. 12. Auscultation of the lungs. 13. Hemoglobin, changes in its amount, causes. Investigation of the morphological composition of blood. 14. Leukocytosis and leukopenia, their diagnostic and prognostic value. 15. Immunodeficiency state of young animals and its characteristics. 16. Research on the scar and its contents, nets, books and abomasum. Sensing of the pancreas and stomach in animals. Investigation of the stomach in horses, pigs and dogs. 17. Investigation of the stomach and liver in animals. Basic methods of gastric examination in animals of different species. Examination, palpation, percussion and their diagnostic value in the study of liver in animals. 18. The value of urinary system research. Scheme of the study. Urinalysis and its disorders. Examination of the kidneys and bladder. Study of the functional state of the kidneys.

	19. The value of urine testing for the diagnosis of animal diseases. Chemical study of urine and its clinical significance. 20. The value of nervous system research. Scheme of the study. Investigation of sensory organs, sensitivity, motor sphere and movement coordination. Research of reflexes. 21. Diagnosis of disorders of protein and carbohydrate-lipid metabolism. 22. Diagnosis of macro- and microelement metabolism disorders. 23. Diagnosis of disorders of vitamin metabolism. **Practical topics**: 1. Safety and personal hygiene during research and handling of animals and chemicals. Scheme of clinical study. Registration and history. 2. Basic methods of clinical study of the animal (examination, palpation, percussion, auscultation). 3. General study of the animal. 4. Symptoms. Syndromes. Diagnosis. Forecast. 5. Knowledge control module 1. 6. Investigation of the cardiovascular system. Heart tones and their changes. 7. Heart murmurs. 8. ECG. 9. Arrhythmias. Investigation of the arteries and veins. 10. Control of knowledge of module 2. 11. The scheme and significance of the study of the respiratory system. Investigation of respiratory movements and upper respiratory tract. 12. Examination, palpation and percussion of the chest in the lung area. Investigation of percussion sounds in healthy animals and with lung pathology. 13. Auscultation of the lungs. Classification of respiratory noises. Investigation of physiological and pathological respiratory noises. 14. Knowledge control module 3. 15. Value and scheme of blood test. Collection of blood from animals of different species, plasma and serum production. Determination of hematocrit size and ESR. 16. Blood morphology: count of red blood cells. 17. Definition in blood Hb. Color metrics: definition and characterization. 18. Preparation of blood smears. 19. Output of the leukogram. 20. Control of knowledge of module 4. 21. Value of digestive organs research. Investigation of appetite, rumination and belching, oral cavity, pharynx and esophagus in animals. 22. Investigation of the stomachs and abdomen of ruminants. 23. Research on the contents of the scar. 24. Investigation of the stomach and intestines in animals. 25. Probes in the practice of veterinary medicine and their application. 26. Study of the liver in animals of different species. Knowledge control module 5. 27. The scheme and significance of the study of the urinary system. Investigation of kidneys and bladder in animals of different species. 28. Physical properties of urine. Chemical study of urine (protein definition - qualitative reactions). 29. Chemical study of urine (protein, glucose, ketone bodies, blood, hemoglobin, bilirubin). Urine sediment microscopy. 30. Research of the nervous system. 31. Radiodiagnostics. 32. Control of module knowledge 6. 33. Diagnosis of disorders of metabolism of proteins, lipids and carbohydrates: a brief description and interpretation of the test results of the blood of the test animal (content of total protein, protein fractions, ketone bodies). 34. Features of diagnostics of macroelements metabolism disorders in animals. Brief description of diseases due to deficiency or excess in serum of calcium, phosphorus and manganese. 35. Diagnosis of trace elements disorders. Interpretation of the obtained labora-

	tory study on serum content of ferum, zinc, cobalt and cuprum. 36. Hypovitaminosis: classification and summary characteristics. Features of the course and diagnosis of disorders of vitamin metabolism. 37. Knowledge control module 7.
Language of instruction	Ukrainian

Academic subject	**Occupational health and safety**
Teacher	**Oleksandr Rozputnyi**, doctor of Agricultural Sciences, professor, Head of the Department of Safety Life`s activity **Ivan Pertsovyi**, PhD, Associate Professor of the Department of Safety Life`s activity **Viktor Herasymenko**, PhD, Associate Professor of the Department of Safety Life`s activity
Course and semester in which you plan to study discipline	2 B year, 3 semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of such knowledge and skills by students: **Knowledge:** - legislative and regulatory acts on the organization and provision of safe and harmless working conditions, fire and man-made safety and civil protection in the workplace; - methods of risk analysis and assessment of hazards in workplaces and production facilities; - methods for predicting emergency situations, measures to prevent them, protect employees, the population, material assets, localization and elimination of their consequences. **Skills:** - ensure effective management of labor protection, fire and man-made safety and civil protection; - identify hazards in the workplace and assess the risks of their occurrence; - organize and conduct training on labor protection, fire, industrial safety and civil protection; - develop measures to prevent and reduce the level of injuries and diseases of employees, improve working conditions and safety, and plan for the prevention and elimination of accidents.
Description of the discipline	
Prerequisites for the study of the discipline	absent
Maximum number of students who can study	25
Classroom topics	**Lecture topics:** Topic 1. Organization and management of labor protection. Topic 2. Legal regulation of labor protection issues. Topic 3. Occupational health and prevention of occupational diseases. Topic 4. Occupational safety during treatment of animals, laboratory tests and veterinary and sanitary measures.

	Topic 5. Fire and technogenic safety. Topic 6. Hazards and emergencies: definition, characteristics and classification. Topic 7. Protection of the population, territories, environment and property from emergency situations.
	Practical training topics: Topic 1. Organization of training and briefings on labor protection issues. Topic 2. Development of instructions on labor protection. Topic 3. The collective agreement and the development of actions for labor protection. Topic 4. Investigation of accidents and occupational diseases. Topic 5. Determining the parameters of the microclimate and illumination of premises. Topic 6. Certification of workplaces according to working conditions. Topic 7. Providing employees with personal protective equipment. Topic 8. Occupational safety in the treatment of animals and carrying out veterinary and sanitary measures. Topic 9. Occupational safety in veterinary medicine laboratories. Topic 10. The calculation of the risk of the manifestation of hazards. Topic 11. Identification and Declaration of security of high-risk objects. Topic 12. Calculation of providing objects, premises and buildings with primary fire extinguishing means. Topic 13. Organization and planning of measures to protect the population and territories in emergency situations. Topic 14. Assistance to the victim in case of accidents.
Language of instruction	Ukrainian, English

Subjects	**Veterinary Microbiology**
Teacher	Iryna Rublenko, Vladimer Zotsenko, Andrey Andriychuk, Doctor of veterinary Sciences, Associate Professor
Course and semester in which you plan to study discipline	1B, 2B course I, II, III semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of the discipline is the acquisition of such knowledge and skills by the students. Knowledge: the spread of microorganisms in nature, their role in the circulation of substances, the impact on the life of animals, products and raw materials of animal origin. - pathogens of infectious diseases, patterns of infections, mechanisms of formation of immunity, methods of prevention and control of infectious diseases of animals. - Microbiology of milk, meat, eggs, use of microbiological processes in agriculture. Skill: to carry out the indication and identification of microorganisms in clinical and pathoanatomical material, environmental objects. - to diagnose diseases using bacteriological, serological methods of research.

	- to summarize the results of the obtained research on preventive and therapeutic measure
Description of the discipline	
Prerequisites for the study of the discipline	Microscopes, nutrient media, autoclave, thermostat, laboratory glassware, bacteriological box.
Maximum number of students who can study	10–13 applicants at a time
Classroom topics	Lecture topics: Topic 1. The subject and tasks of microbiology. History of microbiology. Systematics and morphology. Prokaryotic cell and fungi structure. Topic 2. Physiology of microorganisms. Bacterial growth, reproduction and respiration. Topic 3. Ecology of microorganisms: microflora of air, soil, water and organism of farm animals. Microflora of milk, meat, feed and manure. Topic 4. The role of microorganisms in the transformation of substances in nature. Influence of environmental factors on microorganisms. Genetics of microorganisms. Topic 5. The doctrine of infection. Virulence factors of microorganisms. Topic 6. Antibiotics. Mechanisms of antibiotic resistance formation in microorganisms, methods of its determination and monitoring program in accordance with international and European legislation. Topic 7. Modern methods of diagnostics of infectious diseases of animals. Causes of coccal diseases. Staphylococcosis. Theme 8. The activator of anthrax. Pathogenic spirals and spirochetes: causative agents of campylobacteriosis, pig dysentery. Topic 9. Pathogenic Rickettsia and Chlamydia. Pathogens: Ku-fever, erlichiosis, caudriosis, keratoconjunctivitis. Toxic fungi - producers of mycotoxins. The ergot alkaloids, stachybotriotoxins, fusariotoxins, aspergillotoxins, penicilliotoxins and dendrodohyotoxins. Topic 10. The doctrine of immunity. Types of immunity. Structure of the immune system. Types of antigenic specificity. Antibodies. Antigens. Structural and functional characteristics of the Epitope. Adjuvants. Topic 11. Factors of specific resistance. Classes of immunoglobulins. Pathology of the immune system. The doctrine of allergy. The concept of sensitization. Topic 12. Types of allergic reactions. Diagnostic value of allergic reactions. Immunodeficiency state, autoimmune diseases. Topic 13. Features of immunity in bacterial, viral, parasitic, fungal infections. Humoral and cellular defense responses. Topic 14. Natural immunity. Adaptive immunity. Mechanisms. Topic 15. Fundamentals of Virology. Morphology and chemical composition of viruses. Physical structure of viruses. Nucleic acids, proteins, lipids and carbohydrates of viruses. Organization and equipment of virological laboratories. Rules for working with virus-compatible material. Safety. Topic 16. Fundamentals of virus classification. Criteria for modern virus classification. Taxonomic characteristics of families of animal viruses. Cryptogram Topic 17. Virus Indication and Cultivation. Topic 18. Virus Reproduction. Stages of reproduction. Reproduction stages: adsorption, penetration, deproteinization, transcription, viral genome replication, assembly, vibration output. Topic 19. Genetics of viruses: structural organization of the viral genome. Hereditary variability of viruses and their genetic and non-genetic interactions. Topic 20. Ecology of viruses. The mechanism of the emergence and spread of viral infections. The importance of arthropods and vertebrates

	in the ecology of viruses. Impact of anthropogenic factors on their ecology. Topic 21. Pathogenesis of viral infections. Topic 22. Antiviral immunity. DNA and RNA-containing viruses. Methods of diagnosis of viral diseases.
	Practical topics: 1. Bacteriology laboratory: its tasks, structure, rules of operation, safety and personal prevention. Immersion light microscope system. Bacterial morphology. Biosafety in laboratories. Bio-risks and bio-threats to humans and animals. 2. Production of drugs, smears, preparations-imprints from cultures of microorganisms and material under study. Preparation of dyes, simple methods of painting. Complex painting methods. 3. Bacterial motility and methods of its study. Microscopy in dark field and phase contrast. Morphology of fungi and actinomycetes. 4. Basic methods of sterilization and sterilizing equipment. 5. Preparation of nutrient media for the cultivation of microorganisms, their sterilization and determination of pH. The technique of sowing and sowing cultures of microorganisms. 6. Methods of isolation of pure cultures of aerobic and anaerobic microorganisms. The study of the cultural and enzymatic properties of microorganisms. 7. Determination of the type of microorganisms. Work with the main determinants of bacteria. Antibiotics. 8. Antibiotics. Methods for determining the sensitivity of microorganisms to antibiotics. 9. Determination of pathogenicity of microorganisms. Methods of infection and rules of opening of laboratory animals. Selection and transfer of pathological material for bacteriological studies. 10.Sanitary bacteriological determination of water, soil, air. 11. Laboratory diagnosis of streptococcosis of birds, mastitis. Enterobacteria. Laboratory diagnosis of salmonellosis. Biologicals. 12. Yersinia. Laboratory diagnosis of erysipelas, differentiation of pathogens. Biologicals. Laboratory diagnostics of pasteurellosis and zooanthroponic plague. Biologicals. 13. Anaerobic infection. Laboratory diagnostics of infectious anaerobic enterotoxemia and dysentery of lambs. Biologicals. 14. Laboratory diagnosis of emphysematous carbuncle and necrobacteriosis. 15. Pathogenic mycobacteria. Tuberculosis and paratuberculosis agents, laboratory diagnosis of disease and differentiation of major pathogens. Biologicals. 16. Toxigenic fungi and laboratory diagnosis of mycotoxicosis, fusariotoxicosis, dendrodohyotoxicosis. 17. Methods of serological diagnosis. 18. Agglutination reaction formulation. 19. Formulation of the precipitation reaction. Determination of lysozyme and complementary activity of blood serum. 20. Formulation of the neutralization reaction. 21. Complement binding reaction. 22. Enzyme-linked immunosorbent assay and polymerase-chain reaction. 23. Organization and equipment of virological laboratories. Rules for working with virus-compatible material. 24. Features of the selection of pathological material from sick and dead animals for laboratory diagnosis of viral infections. 25. Preparation of material for research.
Language of instruction	Ukrainian, English

Subjects	Pathological anatomy and necropsy
Teacher	Mykola V. Utechenko candidate of veterinary sciences Associate Professor of the Department of Veterinary Expertise, Animal Hygiene and Pathological Anatomy. Y.S.Zagayevsky
Course and semester in which you plan to study the discipline	4B course, 7-8 semesters
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competencies and related learning outcomes that provide discipline	The result of studies to discipline is acquisition by the students of such knowledge and abilities: **Knowledge:** - have professional-profile knowledge and practical skills in the etiology, pathogenesis and epizootiology of infectious animal diseases, in particular transboundary bases of epidemiology according to OIE requirements; keeping and operating animals; - to describe essence and dynamics of physical and chemical and biological processes, that take place in the organism of animals in a norm and for pathologies under act of factors of environment, action of pathogens, surgical and obstetric-gynaecological interferences, - to learn the most widespread diseases of agricultural animals and bird of different etiology and learn to diagnose them on morphological signs; - to learn to conduct pathoanatomical dissection of carcasses of different types of animals, to select pathological material for research (bacteriological, virological, morphological, chemical-toxicological, etc.), to identify the causes of death of animals and to issue documents on the consequences of the dissection. **Ability:** - able to analyse information, accept reasonable decisions, able to acquire modern knowledge. Able to analyse scientific literature, use modern informative resources, to translate from foreign into an official language and vice versa; - able to select, canning, packing and sending of tests of animal, vegetable and biotechnological origin for researches, to conduct a veterinary account, design current documentation - able to own the methods of clinical researches with the use of the special instruments, devices, devices and other equipment; to own methodologies of the special researches of separate organs and their systems and vehicles; to organize and select tests of biological material; - have a methodology for conducting, epizootic, parasitological, chemical-toxicological, radiological, sanitary-hygienic studies for the diagnosis of animal diseases of non-infectious, infectious and invasive etiology using instrumental and laboratory methods; analyze the results of the study of biological material; to interpret the results of research in the light of the achievements of science and practice; - be able to carry out forensic veterinary examination in the cases stipulated by the current legislation and guarantee the reliability of its results; - be able to select the slaughter material for laboratory testing; identify the causes of established pathomorphological changes

	during the opening of animals and poultry, with subsequent documentation of the results of the studies.
Description of the discipline	
Prerequisites necessary for the study of the discipline	For the study of discipline a "Pathological anatomy and necropsy" students must have base preparation from an anatomy and histology, physiology and physiopathology, disciplines of cycle of professional preparation.
Maximum number of students who can study simultaneously	12 students
Topics of classroom lessons	**Topics of lectures:** 1. Pathological anatomy its content and significance. The concept of atrophy, general and local death. The general concept of dystrophy. Intracellular and extracellular protein dystrophies. 2. Mixed dysproteinoses (impaired metabolism of glucose, nucleo and chromoproteins). Fat, carbohydrate and mineral dystrophy. 3. Disorders of blood, lymph circulation and tissue fluid exchange. 4. Compensatory-adaptive processes. 5. Inflammation. General characteristics of inflammation. Exudative, alternative and proliferative types of inflammation. 6. Tumors (neoplasms). The concept of hemoblastosis. Study of the most common leukemia in pets. 7. Diseases of the cardiovascular system and hematopoietic organs. Respiratory, digestive, nervous and urinary tract diseases. 8. Pathomorphology of mycotoxicosis and mycoses. 9. Acute and chronic bacterial diseases. Viral diseases (classical and African swine fever, rabies, Aujeszky's disease, infectious anemia, infectious equine encephalomyelitis, FMD, smallpox). 10. Fundamentals of forensic medicine. Characterization of the main stages of pathological and anatomical research. **Practical topics:** 1. Plan for the study of discipline. Concept of general and local death. 2. Necrosis 3. Atrophies 4. The concept of dystrophy. Intracellular protein dystrophy. 5. Extracellular protein dystrophy 6. Mixed protein dystrophies: Impairment of glucoprotein metabolism. 7. Mixed protein dystrophies: impaired exchange of nucleoproteins and chromoproteins. 8. Hemoglobinogenic pigments. Disorders of bilirubin (jaundice) metabolism 9. Disorders of lipid metabolism 10. Hydrocarbons and mineral dystrophies. 11. Disorders of blood, lymph circulation and tissue fluid exchange. Hyperemia. Anemia. Bleeding, bleeding. Heart attacks. 12. Thrombosis. Disorders of tissue fluid exchange. 13. Hypertrophy, hyperplasia, regeneration, organization, encapsulation. 14. General characteristics of inflammation. Exudative type of inflammation. Catarrh inflammation. 15. Alternative inflammation 16. Proliferative inflammation

	17. Tumors are a common characteristic. Tumors of connective tissue origin. 18. Tumors of epithelial origin. Tumors originating from muscle and nerve tissue. 19. Hemoblastoses, their general characteristics. Study of the most common leukemia in pets (mammals 20. Bird hemoblastosis. Marek's disease. 21. Diseases of the cardiovascular system (endocarditis, myocarditis). Diseases of the nervous system (encephalitis). 22. Diseases of the digestive system and metabolic disorders. Toxic dystrophy of the liver. Celiac disease. Myoglobinuria of horses. 23. Study of the pathomorphology of the most common mycotoxicoses (stachybotriotoxicosis, aspergillotoxicosis, mycotoxicosis of pigs. 24. Study of the pathomorphology of the most common mycoses (aspergillosis, actinomycosis, botryomycosis). 25. Escherichiosis. The study of colibacteriosis in calves, piglets. 26. Escherichiosis. The study of colibacteriosis in young birds and other farm animals. Collienterotoxemia. 27. Salmonellosis of mammals and birds. 28. Dysentery of pigs. Hemophilosis of pigs. 29. Listeriosis and leptospirosis in farm animals. 30. Cattle tuberculosis. 31. Tuberculosis of chickens and fur animals. 32. Sap, paratuberculosis. 33. Brucellosis, necrobacteriosis 34. A Tale, Aujeszky's Disease. 35. Smallpox, FMD. 36. Swine fever. 37. Carnivorous plague. 38. Infectious encephalomyelitis and infectious anemia of horses 39. Viral hepatitis ducklings. Hemorrhagic disease of rabbits. 40. Teschen's disease. Gamboro disease. 41. Fundamentals of forensic medicine 42. Elaboration of the main stages of pathological and anatomical research
Teaching language	Ukrainian, English

Subjects	**Veterinary clinical biochemistry**
Teacher	Holovakha Volodymyr, doctor of veterinary medicine. Prof., Department of Therapy and Clinical Diagnostics named of VI Levchenko Vovkotrub Nataliia, PhD of Vet. Sc., Associate Prof., Department of Therapy and Clinical Diagnostics named of VI Levchenko Oksana Piddubnyak, PhD of Vet. Sc., Associate Prof., Department of Therapy and Clinical Diagnostics named of VI Levchenko
Course and semester in which you plan to study discipline	4 B course, VII semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and	As the result of the discipline is the acquisition of such knowledge

relevant learning outcomes provided by the discipline	and skills by the students. ***Knowledge:*** - to have knowledge of current regulations, ethiology and pathogenesis of animal diseases and methods of their laboratory diagnostics; - have professional knowledge of biochemical methods of diseases diagnosis with different etiology; - to know the basic methods of biochemical research. ***Skills:*** - ability to organize and carry out laboratory and special diagnostic studies and analyze their results; - ability to plan, organize and carry out laboratory studies of animals and samples of biological material; - analyze the results of laboratory tests and formulate conclusions, recommendations, tips or make a diagnosis; - be able to use information and communication technologies in their professional activities; - to be able to choose the topic of research, to put experiments, to carry out the analysis of different substrates, generalization and static processing of the received data, to compare them with the literary data; - be able to analyze information obtained from biochemical studies of different objects, make informed decisions; - be able to carry out the selection, preservation, packaging and transport of samples of animal origin for biochemical research; - to possess methods of biochemical research using special devices and other equipment; - to possess methods of special researches of blood, urine, contents of rumen etc.; - organize and carry out sampling of biological material.
Description of the discipline	
Prerequisites for the study of the discipline	Knowledge of the disciplines "Clinical diagnosis of animal diseases and diagnostic imaging", "Feeding", "Animal physiology", "Pathological physiology", "Veterinary biochemistry".
Maximum number of students who can study	10–12 students
Classroom topics	Lecture topics: Topic 1: Discipline "Veterinary clinical biochemistry" and its importance in the formation of a veterinary doctor. Disorders of the proteins metabolism for gastritis, enteritis and pancreatitis. Peculiarities of proteins digestion in ruminants and its disorders for rumen acidosis. Disorders of the homeostasis of total protein and its fractions. Hypo-, hyper- and dysproteinemia in internal pathology. Topic 2: Non-protein nitrogenous blood components in internal pathology. Residual nitrogen and its components. Azotemia and its species. Diagnosis of protein metabolism disorders. Topic 3: Digestion and absorption disorders of carbohydrates in internal pathology. Features of carbohydrates digestion in ruminants and its disorders for rumen acidosis. Transitve carbohydrate metabolism and its changes in liver and pancreatic pathology. Topic 4: Lipid digestion and absorption disorders of internal pathologies in monogastric and ruminant animals.

	Topic 5: Ketogenesis and lipid peroxidation and its disorders. Diagnosis of lipid metabolism disorders. Topic 6: Macronutrient metabolism for internal pathology. Biochemical methods for the diagnosis of macroelementosis (deficiency or excess of Ca, P, Mg, K, Na). Topic 7: Trace elements metabolsm in internal pathology. Biochemical methods for the diagnosis of traceelementosis. Topic 8: Clinical biochemistry for the metabolism of fat-soluble vitamins.
	Practical lessons' topics: 1. Instructions on safety and the basics of academic integrity. International System of Units (SI). Objects of clinical biochemistry research. 2. Disorders of the simple proteins metabolism. Evaluation of total protein serum content by the biuret method. Interpretation of the results. 3. Methods for determination of protein blood fractions. Analyse of albumin serum content in reaction with bromocresol-green. 4. Dysproteinemia. Colloidal-sedimentary reactions: Formol, Sulemic, Zinc sulfate. 5. Residual nitrogen and its components. Evaluation of urea and creatinine in serum, interpretation the results. 6. Knowledge control of the module "Clinical-biochemical evaluation of protein metabolism in internal pathologies". 7. Diagnosis of carbohydrate metabolism disorders. Analysis of plasma (serum) glucose by glucose-oxidase (enzymatic) and express method (glucometer). 8. Evaluation of total amount of short-chain fatty acids and their fractions in the rumen fluid and the interpretation the results. 9. Diagnosis of lipid metabolism disorders. Determination of total lipids and cholesterol in serum of animals. 10. Knowledge control of the module "Disorders of carbohydrate and lipid metabolism in internal pathology". 11. Disorders of macronutrient metabolism in internal pathologies. Evaluation of total Calcium and inorganic Phosphorus in serum. 12. Analysis of Cuprum, Zinc, Ferum, Manganese, Cobalt and Selenium in the serum of animals by atomic absorption spectrophotometry and clinical interpretation the results. 13-14. Evaluation of vitamin A contents in the serum and interpretation the results. 15. Determination of vitamin E content in the serum and interpretation the results. 16. Knowledge control of the module "Clinical biochemistry of the disorders of macro-, traceelements and vitamins metabolisms".
Language of instruction	Ukrainian, English

Subjects	**Veterinary toxicology**
Teacher	Chub Oleksandr, PhD of Vet. Sc., Associate Prof., Department of Therapy and Clinical Diagnostics named of VI Levchenko Vovkotrub Nataliia, PhD of Vet. Sc., Associate Prof., Department of Therapy and Clinical Diagnostics named of VI Levchenko Bezukh Vasyl, PhD of Vet. Sc., Associate Prof., Department of Therapy and Clinical Diagnostics named of VI Levchenko

Course and semester in which you plan to study discipline	4B year, VII semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	As the result of the discipline is the acquisition of such knowledge and skills by the students. ***Knowledge:*** - to have knowledge of current regulations, ethiology and pathogenesis of animal poisoning and methods of their laboratory diagnostics; - have professional knowledge of chemical and toxicological methods of poisoning diagnosis in animals and birds; - to know the basic parameters of toxicometry; - to know the basic methods of toxicological research. ***Skills:*** - ability to organize and carry out laboratory and special diagnostic studies and analyze their results; - ability to plan, organize and carry out toxicological studies of animals and samples of biological material; - analyze the results of laboratory tests and formulate conclusions, recommendations, tips or make a diagnosis; - be able to use information and communication technologies in their professional activities; - to be able to choose the topic of research, to put experiments, to carry out the analysis of different substrates, generalization and static processing of the received data, to compare them with the literary data; - be able to analyze information obtained from toxicological studies of different objects, make informed decisions; - be able to carry out the selection, preservation, packaging and transport of samples for toxicological research; - to possess methods of chemical and toxicological research using special devices and other equipment; - be able to develop toxicological algorithms and apply different treatment regimens for the toxicity of animals of different origin; - be able to develop and organize measures for the prevention of poisoning of farms and small domestic animals and poultry, and in the event of poisoning - qualified to diagnose using modern methods of research.
Description of the discipline	
Prerequisites for the study of the discipline	Knowledge of the disciplines "Veterinary clinical biochemistry", "Feeding", "Animal physiology", "Pathological physiology", "Pharmacology".
Maximum number of students who can study	10–12 students
Classroom topics	**Lecture topics:** Topic 1: General principles of diagnostics, treatment and pro-prevention of animal poisoning. Animal poisoning with nitrates and nitrites. Topic 2: Poisoning of animals with compounds used as feed additives (salt, urea). Topic 3: Animal poisoning with anticoagulants.

	Topic 4: General characteristics of phytotoxicosis. Poisoning by plants containing alkaloids. Poisoning by plants containing glycosides. Topic 5: Poisoning by plants containing glycoalkaloids and phyloerythrin. Topic 6: Poisoning by plants containing excessive of carbohydrates and feed with high organic acids content. Topic 7: Animal poisoning with toxins after feed processing.
	Practical lessons' topics: 1. Instruction on safety at work in the chemical-toxicological department of the laboratory and the basics of academic integrity. Rules for the selection, packaging and transfer of pathological material and other veterinary surveillance facilities in the laboratory. Chemical-toxicological analysis in veterinary medicine. 2. Methods of isolation of toxic substances from objects of veterinary control and material. 3. General principles of diagnostics, treatment and prevention of animal poisoning. 4. Poisoning of animals by nitrates and nitrites. Determination of nitrates and nitrites in feed and pathological material. 5. Toxicology of compounds used as feed additives. Poisoning of animals and birds by sodium chloride. 6. Toxicology of non-protein nitrogen compounds. Methods of isolation and detection of urea in the rumen content. 7. Poisoning of animals by preparations of Cuprum and Fluorine: diagnosis, treatment and prevention. 8. Knowledge control of module 1 "Poisoning of animals with mineral compounds". 9. Poisoning by plants containing alkaloids. Methods of isolation and identification of alkaloids. Group determination of alkaloids by precipitation. 10-11. Animal poisoning with nitro- and thioglycosides. Methods of diagnosis and treatment. 12. Poisoning by plants containing glycoalkaloids and phyloerythrin: etiology, methods of diagnosis, treatment and prevention. 13. Poisoning by feed containing excess carbohydrates and organic acids. 14. Food poisoning by technical processing (pulp, molasses). Knowledge control module 2 "Phytotoxicology".
Language of instruction	Ukrainian

The name of discipline	**Propedeutics and therapy of internal illnesses large animals**
Teacher	Harkavyi Victor, Bogatko Leonid, candidates of veterinary, associate professors of department of therapy and clinical diagnostics the name of V.I.Levtchenka
Course and semester in that the study of discipline is planned	3B, 4B courses of OP Bachelor
Faculties it is suggested to study discipline the students of that	Faculty of veterinary medicine

List of компетентностей and corresponding results of studies, that discipline provides Result of studies to discipline is acquisition by the stud ents of such knowledge and abilities.	Knowledge: To know the features of structure of organism of animals for norms and possible changes of form and structure of organs for pathologies Ability to apply the rational chart of treatment of sick animal, electing etiotropic, нозогенетичну, replaceable, symptomatic, and at a necessity - and radical therapy of sick animal. Ability to use specific and symptomatic pharmaceutical preparations and medicinal facilities for treatment of animals, patients on contagious and non illnesses. To own knowledge of operating normatively-legal acts, etiology and pathogeny of illness of animals and methods and methods of laboratory researches. To know the features of biology of causative agents of communicable diseases, pathogeny of illnesses, operating normatively-legal acts in relation to the methods of fight against them and methods and facilities of фізіо-, дієто- and фармакотерапії. To know sanitary-hygenic rules and norms in relation to the state of territory of stock-raising object, his apartments, methods of maintenance, feeding and watering of animals and supervision upon them. To know the technological processes of production and operating normatively-legal acts in relation to storage, transporting and realization stock-raising Skill: - To be able to organize and carry out patho-anatomical dissection, to analyze revealed patho-anatomical changes and to document conclusions.
Description of the discipline	
Prerequisites necessary for the study of the discipline	Prerequisites for the discipline The course "Propedeutics and therapy of internal diseases of large animals" is based on the knowledge of the following disciplines: "Animal Anatomy", "Veterinary Microbiology", "Clinical Diagnostics", "Veterinary Toxicology", "Biology" anatomy and necropsy "," Obstetrics, gynecology and biotechnology of reproduction of animals with the basics of andrology "," Epizootology, infectious diseases and preventive medicine "," Parasitology and invasive diseases "" Veterinarian not the legislation, organization, and economics of the veterinary business. "
Maximum number of students who can study	10-13 applicants at a time
Classroom topics	Lecture topics: Theme 1. Definition of the subject "Internal diseases of animals" and its importance in the formation of a veterinarian. A brief history of development. The basics of general therapy. General rules of therapy. Types of therapy. Theme 2. Pathogenetic therapy: the essence and varieties. Therapy regulating nerve-trophic functions. Etiotropic therapy. Replacement therapy. Vitamin and enzymatic therapy. Nonspecific stimulation therapy: the essence and mechanism of action. Theme 3. General prevention of animal diseases. Dispensary of farm animals, its theoretical foundations. Dispensary stages. Topic 4. Analysis of quality of feed, water, animal feeding as a

	basis for prevention of internal diseases of animals. Topic 5. Classification of diseases of the cardiovascular system, the main causes, the spread. Traumatic pericarditis. Theme 6. Myocardiodystrophy: definition, etiology, pathogenesis, treatment and prevention. Differential diagnosis of myocarditis and myocardial dystrophy. Prevention of diseases of the cardiovascular system. Topic 7. Classification of respiratory diseases, their spread. Pulmonary diseases: classification. Catarrh bronchopneumonia. Topic 8. Pneumonia: definition, classification. Differential diagnosis of pneumonia of different etiology. Topic 9. Pleural Disease: Classification. General principles of prevention of diseases of the respiratory system. 2 Topic 10. Diseases of the digestive system: distribution, causes, classification. Stomatitis. Topic 11. Diseases of the pancreas. Hypotension and atony of the pancreas. Topic 12. Displacement of the abomasum. Goflund's syndrome. Acute tympany. Topic 13. Diseases of the stomach and intestines. Gastritis. Topic 14. Classification of diseases of horses with colic syndrome. Topic 15. Basic principles of prevention of diseases of digestive organs in pets. Topic 16. Diseases of the liver and biliary tract: classification. Syndromes. Differential diagnosis of hepatodystrophy, parenchymal and purulent hepatitis and cirrhosis. Treatment and prevention of liver diseases. Topic 17. Diseases of the urinary system. Syndromes. Glomerulonephritis. Differential diagnosis of glomerulose and pyelonephritis and nephrosis. Treatment and prevention of kidney diseases. Topic 18. Classification of young diseases. Immunodeficiency state of young animals: classification, causes, diagnosis and prevention. Topic 19. Hypoglycemia and hypoplastic anemia of young animals. Gastrointestinal diseases of the newborn young: classification. Topic 20. Dyspepsia: etiology, pathogenesis, symptoms Theme 21. Metabolic diseases of young animals: treatment and prevention. Topic 22. Metabolic diseases of large animals: classification, features of the course, diagnosis and prevention. Ketosis of high-performance cows: definition and etiology. Topic 23. Ketosis: pathogenesis, symptoms, diagnosis, treatment and prevention. Topic 24. Diseases caused by impaired macronutrient metabolism: osteodystrophy and rickets. Topic 25. Diseases caused by impaired trace element metabolism. Topic 26. Postpartum hypocalcaemia and hypophosphatemia. Topic 27. Diseases caused by impaired vitamin metabolism in large animals. The main causes and symptoms. Topic 28. Methods for diagnosis, treatment and prevention of hypovitaminosis in large animals. Topic 29. Diseases of the endocrine system: major causes.

	Thyroid disease: classification. Endemic goiter. Diabetes. Topic 30. Diseases of the nervous system: thermal overheating; meningoencephalitis; epilepsy and eclampsia. Topic 31. Diseases of the blood system: classification. Differential diagnosis of diseases of the blood system. Theme 32. Skin diseases: classification. Differential diagnosis of skin diseases.
	Laboratory topics: 1 Instruction on OP during the lessons. Physiotherapy. The use of natural and artificial sources of heat and light radiation for the treatment and prevention of internal diseases of animals. 2 The use of mineral elements for the treatment and prevention of animal diseases. Prevention of impaired vitamin metabolism and the development of fermentopathies in animals. 3 Modular control 4 Animal research, examination, medical history. Diagnosis, treatment appointment. Myocarditis. 5 Animal study, examination, medical history. Diagnosis, treatment appointment. 6 Rhinitis, frontitis, sinusitis: classification, etiology, pathogenesis, symptoms, diagnosis, treatment, prevention. 7 Animal study, examination, medical history. Diagnosis, treatment appointment. Large pneumonia: etiology, pathogenesis, symptoms, diagnosis, treatment, prevention. 8 Modular control. 9 Animal study, examination, medical history. Diagnosis, treatment appointment. 10 Diseases of the stomach. Traumatic reticulitis. Acidosis of the scar. Chronic ruminitis. 11 Animal research, examination, medical history. Diagnosis, treatment appointment. 12 Gastroenteritis, gastroenterocolitis. 13 Animal research, examination, medical history. Diagnosis, treatment appointment. 14 Diseases of horses with colic syndrome: basic symptoms, rules for diagnosis and treatment of diseased animals with colic syndrome. 15 Investigation of a sick animal. Examination of medical history, diagnosis, treatment. 16 Diseases of the liver: hepatodystrophy, hepatitis. 17 Investigation of a sick animal. Examination of medical history, diagnosis, treatment. 18 Differential diagnosis of liver disease. Treatment and prevention of liver diseases. 19 Modular control. 20 Investigation of a sick animal. Examination of medical history, diagnosis, treatment. Iron deficiency anemia. Hemolytic disease. 21 Investigation of a sick animal. Examination of medical history, diagnosis, treatment. 22 Gastrointestinal diseases of newborn young. Classification. Simple and toxic dyspepsia. Casein-noar disease. 23 Investigation of a sick animal. Examination of medical history, diagnosis, treatment. 24 Colostrum toxicosis. Periodic tympanium of calves. 25 Investigation of a sick animal. Examination of medical history,

	diagnosis, treatment. 26 Metabolic diseases of young animals. Rickets. Bezoar disease. Celiac disease. Enzootic ataxia of lambs. Parakeratosis of piglets. 27 Modular control. 28 Investigation of a sick animal. Examination of medical history. Metabolic diseases of animals. caused by impaired carbohydrate-lipid and protein metabolism. 29 Alimentary dystrophy. Adiposity. Myoglobinuria. 30 Investigation of a sick animal. Examination of medical history, diagnosis, treatment. 31 Diseases caused by impaired macronutrient exchange. Osteodystrophy, postpartum hypocalcaemia and hypophosphatemia. Hypomagnesemia. 32 Investigation of a sick animal. Examination of medical history, diagnosis, treatment. 33 Diseases caused by impaired trace element metabolism. General directions of diagnostics and prophylaxis of trace elements 34 Modular control. 35 Investigation of a sick animal. Examination of medical history, diagnosis, treatment. 36 Diseases of the nervous system. Functional nerve diseases. Stress. Spongiform encephalopathy. 37 Investigation of a sick animal. Examination of medical history, diagnosis, treatment. 38 Hyperemia and cerebral ischemia. Meningomyelitis. Epilepsy and eclampsia. 39 Investigation of a sick animal. Examination of medical history, diagnosis, treatment. 40 Diseases of the Blood System. Hemolytic anemia. Dysregulatory anemia. 41 Investigation of a sick animal. Examination of medical history, diagnosis, treatment. 42 Alopecia. Changes in pigmentation of wool and skin. 43 Diseases of the skin and allergic skin diseases. 44 Modular control.
	Topics for independent work of students 1 The sequence of the study of the disease. Journal for the registration of sick animals. Clinical and academic medical history. Methods of drug administration. Aerosolotherapy. 2 Diet therapy for internal animal diseases. Indications and contraindications. Therapy with specific drugs. Phagotherapy, interferon-, sero- and immuno-therapy. Reflexology. 3 Syndromes for diseases of the cardiovascular system. Non-traumatic pericarditis. .Hydropericardium. Cardiomyopathy: dilated, hypertrophic and restrictive. Myocardiofibrosis. Expansion of the heart. Myocardial infarction. Hypertension, its causes and diagnosis. Diseases of the vessels: arteriosclerosis, thrombosis. Endocarditis 4 Major syndromes for respiratory diseases. Bleeding from the nose. Laryngeal edema. Laryngitis, tracheitis, bronchial asthma. Pleural diseases: classification. General principles of prevention of diseases of the respiratory system. 5 Lung diseases. Hyperemia and pulmonary edema. Pulmonary bleeding. Interstitial and alveolar pulmonary emphysema.

	Purulent-necrotic pneumonia. 6 Pleural Diseases. Breast dropsy (hydrothorax). Pneumothorax. Pleuritis: etiology, pathogenesis, symptoms, diagnosis, treatment, prevention. 7 Syndromes for diseases of the liver and biliary tract: functional failure, cholestasis, portal hypertension, hepatogenic photosensitization, hepatocerebral and hepatorenal. 8 Throat paralysis. Esophageal diseases: blockage, inflammation. Narrowing, extension, spasm. Features of digestion in the stomachs of ruminants. Paraceratosis of the scar. Gastric ulcer. Bowel obstruction. Mechanical obstruction (ileus): twisting and twisting of the gut, pinching, invagination and displacement of the gut. Thromboembolism of mesenteric arteries. 9 Amyloidosis of the liver. Diseases of the peritoneum: peritonitis and ascites. 10. Cholelithiasis. Cholangitis. 11 Diseases of the urinary tract. Kidney function in maintaining homeostasis. Features of metabolism in the renal tissue in normal and pathology. Formation and excretion of urine in normal and pathological conditions. 12 Diseases of the urinary tract. Renal insufficiency syndrome. Renal functions: excretory, hemostatic, excretory. Nephrosclerosis. Kidney abscess, pyonephrosis, polycystic kidney disease, hydronephrosis. 13 Changes in the chemical composition of urine. Biochemical mechanisms of urolithiasis. Urocystitis. 14 Neurogenic bladder dysfunction. Diseases of the lower urinary tract. 15 Differential diagnosis, treatment and prevention of kidney diseases: glomerulose and pyelonephritis, nephrosis and nephrosclerosis. Ante- and intranasal diseases: antenatal hypotrophy and intranasal hypoxia (asphyxia). 17 Cellular and humoral immune defense factors. Immune deficiency. Congenital immunodeficiencies. 18 Gastrointestinal diseases of young animals: colostrum toxicosis, casein-noar disease, erosive-ulcerative gastritis, gastroenteritis, hypertrophic pyloric stenosis, gastric rotation. 19 Differential diagnosis of gastroenteritis of non-infectious etiology and infectious diseases (salmonellosis, oral and coronal enteritis, parvo-, reo, calic and circovirus enteritis), treatment and prevention 4 20 Metabolic diseases of young animals: insufficiency of tocopherol, riboflavin, pyridoxine, ascorbic acid. 21 Diseases caused by metabolic disorders. The essence of the exchange of substances and its stages, mechanisms of regulation. 22 Diseases caused by disorders of carbohydrate-lipid and protein metabolism. Classification of carbohydrates and lipids and their biological role. 23 Obesity, animal exhaustion. Myoglobinuria of horses. 24 Pasture tetany. Hypo- and hyperkalemia. 25 Manganese, fluorine and selenium deficiency. Excess fluorine, selenium, nickel, molybdenum, strontium.

	26 Hypocobaltosis, hypocoprose. 27 Vitamin metabolism disorders. Classification of vitamins, their biological role and metabolism. 28 Deficiency of retinol, phylloquinone, riboflavin, biotin, choline chloride, ubiquinone, vitamins U and F. 29 Diseases of the organs of the endocrine system: causes. Hypothyroidism, endemic goiter. hypo- and hyperadrenocorticism, hypoparathyroidism 30 External secretory function of the pancreas. Pancreatic diseases: cyst, atrophy and tumors. Diabetes. Diabetes mellitus, 31 Diseases of the brain and spinal cord and meninges: myelitis, meningomyelitis, neonatal encephalopathy of the neck (hypoxic ischemic encephalopathy). Transmissible spongioform encephalopathies: scrapie, Neuroses of animals. 32 Diseases of the blood system: hemolytic and dyshemopoietic anemia. Postpartum hemoglobinuria of cows. Paraxysmal hemo-globinuria. Iso- and autoimmune hemolytic anemia. Hemorrhagic diathesis (hemophilia, thrombocytopenia, bloody disease.
Language of instruction	Ukrainian

Subjects	**Epizootology, infectious diseases and preventive medicine**
Teacher	Yarchuk Bronislav Myronovych, candidate of veterinary sciences, professor of the department of epizootology and infectious diseases. Bilyk Sergiy Anatoliyovych, Shulga Petro Hnatovych, candidates of veterinary sciences,associate professors of the department of epizootology and infectious diseases
Course and semester in which you plan to study the discipline	3B course, 6 semester 4B course, 7 and 8 semesters.
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of the following knowledge and skills by students: **Knowledge:** - have professional and specialized knowledge and practical skills in the etiology, pathogenesis and epizootiology of infectious animal diseases, in particular transboundary bases of epidemiology according to OIE requirements; keeping and operating animals; - describe the nature and dynamics of physicochemical and biological processes that occur in the body of animals in normal and pathological conditions under the influence of environmental factors, the action of infectious agents, surgical and obstetric-gynecological interventions; - have professional-profile knowledge and understanding of the basic provisions of international and European animal welfare legislation; possess clinical and laboratory research techniques to monitor animal health and control the treatment of diseased animals and the prevention of animal diseases of different

	etiologies; - to understand the essence of the processes of production, storage and processing of biological raw materials. **Skill:** - be able to carry out sampling, canning, packaging and forwarding of samples of animal, plant and biotechnological origin for research, to carry out veterinary records, to draw up accounting documentation; - be able to identify the sources of the causative agent of infections, invasions, to determine the factors and mechanism of their transmission; ensure the isolated maintenance of sick and suspected animals of infectious or invasive animal disease; to carry out forced vaccinations of animals in disadvantaged and threatened service areas; to take measures aimed at preventing the spread of the pathogen and infestation beyond the epizootic hearth and eliminating the hearth itself; not allow the care of animals with zoonotic diseases; - have a methodology for conducting, epizootic, parasitological, chemical-toxicological, radiological, sanitary-hygienic studies for the diagnosis of animal diseases of non-infectious, infectious and invasive etiology using instrumental and laboratory methods; analyze the results of the study of biological material; to interpret the results of research in the light of the achievements of science and practice; - have common clinical and laboratory research techniques to monitor the health of animals and to maintain the production and circulation of food derived from animals treated and prophylactically, in accordance with the Single Health concept; - be able to organize the rehabilitation of livestock premises by chemical, biological and physical methods and to control it; - be able to operate the basic concepts of biosafety, biosecurity, to have the basics of bioethics; to analyze current and newest ethical problems of biotechnology and pharmaceutical industries; analyze the causes of epizootic situations and infectious diseases that have emerged in recent years.
Description of the discipline	
Prerequisites necessary for the study of the discipline	Theoretical and practical knowledge in the following clinical disciplines: Anatomy and Physiology, Microbiology and Virology, Clinical Diagnosis and Therapy, Obstetrics and Surgery, Parasitology and Veterinary Expertise.
Maximum number of students who can study simultaneously	12 students
Classroom topics	**Lecture topics:** 1. The subject and tasks of epizootology. 2. Infection and infectious disease. 3. The spread of pathogenic microbes in the body of animals. Types of infection. 4. Epizootic process. Epizootic hearth. Natural fire. 5. Nomenclature and classification of infectious diseases. Laws and categories of epizootology. 6. Anthrax. 7. Tuberculosis. 8. Brucellosis.

	9. Leptospirosis. Listeriosis. 10. FMD. Smallpox. 11. The tale. Aujeszky's disease. 12. Leukemia cattle. 13. Cervical spongiform encephalopathy. Strong sheep. 14. Classical swine fever. 15. African swine fever. 16. Flu of horses. Rhinopneumonia. 17. Sap. Myth. 18. Carnivorous plague. 19. Myxomatosis. 20. Viral haemorrhagic disease of rabbits. 21. Parvovirus dogs. 22. Newcastle disease. **Practical topics:** 1. Rules for dealing with infectious animals. Installation of isolators and infectious clinics. 2. Laboratory and diagnostic studies for infectious animal diseases. Laboratory methods of diagnostics of infectious diseases. 3. Rules for the selection and transfer of biological and pathological material for laboratory testing. 4. Levels of study of immunity. 5. Biology of the immune response. 6. Diagnosis of infectious diseases in epizootology. 7. Disposal of carcasses and animal waste. 8. Veterinary sanitation. 9. Anti-epizootic measures. Prevention of infectious diseases. 10. Anthrax. 11. Tuberculosis. 12. Brucellosis. 13. Leptospirosis. Listeriosis. 14. FMD. Smallpox. 15. The tale. Aujeszky's disease. 16. Cattle leukemia. 17. Spongiform encephalopathy of cattle. Strong sheep. 18. Cattle and cattle plague. 19. Emphysematous carbuncle. A sheep's bastard. 20. They were fleeing. Anaerobic enterotoxemia of young animals. 21. Hemophilous polyseritis. Infectious atrophic rhinitis. 22. Colenterotoxemia. Colibacteriosis. 23. Teschen's disease. 24. Swine flu. Enzootic pneumonia of pigs. 25. Classical swine fever. 26. African swine fever. 27. Reproductive and respiratory syndrome of pigs. Parvovirus of pigs. 28. Flu. Rhinopneumonia. 29. Sap. Myth. 30. Infectious anemia of horses. 31. Aleutian mink disease. 32. Carnivorous plague. 33. Myxomatosis of rabbits. 34. Viral haemorrhagic disease of rabbits.

	35. Infectious carnivorous hepatitis. 36. Parvovirus of dogs. 37. Adenovirus of dogs. 38. Coronavirus enteritis of dogs. 39. Panleukopenia of cats. 40. Calicivirus of cats. 41. Newcastle disease. 42. Gamborough Disease. 43. Bird flu. 44. Marek's Disease.
Language of instruction	Ukrainian

Subjects	**Parasitologyandinvasiondiseases**
Teacher	AntipovAnatolii BakhurTetiana GoncharenkoVolodymyr SoloviyvaLjudmila CandidatesofVeterinarySciences, associateprofessorsoftheDepartmentofepizootologyandinfectiousdiseases
Courseandsemesterinwhichyouplantostudythediscipline	V 6 (b), V 7 (b)
Facultieswhosestudentsareinvitedtostudydiscipline	FacultyofVeterinaryMedicine
Listofcompetencesandrelevantlearningoutcomesprovidedbythediscipline	Theresultofteachingthedisciplineistheacquisitionofthefollowingknowledgeandskillsbystudents: **Knowledge:** – have professional and specialized knowledge and practical skills in the etiology, pathogenesis and epizootology of invasive animal diseases. **Skill:** – be able to carry out sampling, canning, packing and forwarding of samples of animal, plant and biotechnological origin for research, to carry out veterinary records, to prepare accounting documentation. – be able to identify sources of infectious agent, determine the factors and mechanism of their transmission; ensure the isolated maintenance of patients with invasive animal disease; take measures aimed at preventing the spread of the infestation agent outside the epizootic center and eliminating the center itself. – have a methodology for conducting parasitological studies to diagnose invasive animal diseases; analyze the results of the study of biological material; to interpret research findings in light of the achievements of science and practice.
Descriptionofthediscipline	
Prerequisites necessary for the study of the discipline	None
Maximum number of	12 students

students who can study simultaneously	
Classroom topics	**Lecture topics:** 1. Introduction to veterinary parasitology 2. General characteristics of trematodes. 3. Trematodoses: Fasciolosis, dicrocellosis, opisthorchiasis 4. General characteristics of the class of cestodes. Cestodose larvae. 5. Cysticercosistenuicolous and piziform. Cenurosis is cerebral. Echinococcosis granulosa and multilocular. 6. Imaginal Cestodoses of Carnivorous: Teniidosis, Dipilidiosis, Dipilobotriosis. 7. Imaginal cestodoses of ruminants: moniesiosis, tyzanisiosis, avitellinosis. Horse anoplocephalidosis 8. General characteristics of nematodes: systematics, features of morphology, biology of ascaridate. 9. Ascariasis of pigs. Parasacrosis of horses. Neoascarose calves. Carnivorous toxocariasis. 10. Respiratory Strongylatosis: Dictiocaulosis, Swine Metastrongilosis. 11. Strongilatoses of digestive organs of ruminants, horses and pigs. 12. Telesiosis. Strongiloidosis. Oxygenosis 13. Trichuratosis: Trichinosis of animals, trichurosis of pigs and ruminants. 14. Filariasis: onchocerciasis, setariasis, dirofilariosis. 15. Morphology, biology and fundamentals of arachnid systematics. Characteristics of parasitiform mites. 16. Characteristics of acariform mites. Psoriasis of animals. 17. Otodectosis, sarcoptosis, notoedrosis, sarcoptosis 18. General characteristics of insects. Diseases caused by gadfly larvae. 19. Animal sifunculosis and malophagosis. Bloodsuckers. Fleas 20. General characteristics of the simplest. 21. Pyroplasmidosis and animal emeriosis. Features of structure, cycle of development, mechanism of pathogenic action, diagnostics and treatment. 22. Toxoplasmosis, sarcocystosis, trichomoniasis, balantidiosis. 23. Means of etiotropic therapy of animals for parasitic diseases. **Practical topics:** 1. Study of safety rules in the parasitology laboratory. 2. Study of methods of lifelong and post-mortem diagnosis of helminthiasis. 3. Parasitological study of animal faeces samples. Control test session 4. Study of the structure of trematodes, features of biology, systematics of trematodes. Fasciosis: diagnosis, pathogenesis, treatment, prevention. 5. Study of paramphistomatosis and dicocelliosisof ruminant, opisthorchiasis. 6. Control test session 7. Teniosis - boisterous cysticercosis. Teniosis - cellulose cysticercosis. The study of the magical and larval stages of helminths, diagnosis of diseases, features of the development of pathogens,

	therapy and prevention. 8. The study of cerebral cenosis. Echinococcosis granulosa and multilocular: features of the structure of the magnetic and larval stages of helminths. Diagnosis, prevention of diseases. 9. The control test session 10. Imaginal Cestodoses of Carnivorous: Teniidosis, Dipilidiosis and Dipilobotriosis. 11. ruminant anoplocephalidosis: monesiosis, tyzaniosis. Horse anoplocephalidosis. Morphological characteristics of pathogens, the cycle of helminth development, diagnosis, therapy and prevention of diseases. 12. Control test session 13. Features of nematode development. The study of pig ascarosis, parascarosis of horses: morphological features of pathogens, the development cycle, diagnosis, therapy and prevention of diseases. 14. Study of neoascarrosis of calves, toxocariasis and toxascarrosis of carnivores and ascariasis of chickens. 15. Control test session 16. Respiratory Strongylatoses: Dictiocaulosis of animals, Metastrongilosis of pigs. 17. Strongzyatosis of the digestive system of ruminants and horses. 18. Control test session 19. Rabdititosis and spiruratosis: Strongyloidosis of pigs, ruminants and horses. 20. Television of ruminants. Oxyurosis of horses, rabbit fever. 21. Trichuratosis of animals: trichinosis, trichrosis. Pathogens, features of morphology and biology, modern methods of diagnostics, prevention. Animal filariasis: onchocerciasis, cattle and horses setariosis. Carcinoma of the Carnivorous. 22. Control test session 23. Study of parasitiform mites: ixodids, argas and homozoid mites. Features of the structure, development cycle, measures to combat them. 24. General characteristics of acariform mites. Psoriasis, chorioptosis of ruminants, horses, rabbits. Carnivorous otodectosis. Sarcoptosis of pigs. Features of disease course, diagnostics and treatment of animals. Notoedrosis and demodicosis. 25. The control test session 26. Ovary diseases of ruminants: hypodermosis of cattle, estrogen of sheep. Rhinestrosis, gastrophilosis of horses. 27. Study of bloodsuckers, lice, fleas, hair driers. Wolfarthiosis. 28. Control test session 29. General characteristics of the simplest: morphological features, features of development, mechanism of pathogenic action. Babesiosis of cattle, horses, dogs. 30. Eimeriosis of animals: peculiarities of development of eimerias, mechanism of pathogenic action, features of therapy for eimeriosis. Balantidiosis of pigs and trichomannosis of cattle: morphological signs of pathogens, features of their development, diagnostics and treatment of animals
Languageofinstruction	Ukrainian

Subjects	Pharmacology and pharmacotherapy
Teachers	Rublenko Sergiy V. Doctor of Veterinary Sciences, Professor of the Department of Parasitology and Pharmacology Avramenko Natalia Vladimirovna, Koziy Natalia Vladimirovna Candidates of Veterinary, Associate Professors, Department of Parasitology and Pharmacology
Course and semester in which you plan to study the discipline	3B course, 5, 6 semesters
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition by students of such knowledge and skills. Knowledge: - classification of medicinal substances, their Ukrainian and Latin name, physicochemical properties, storage features; - dosage forms of modern medicinal substances; - pharmacodynamics, mechanism of action and pharmacokinetics of widely used medicinal substances; - indications and contraindications to the use of medicinal substances; - toxicity, adverse side effects and withdrawal of medicinal substances; - the method of prescribing different dosage forms; Skill: - choose the best medicines for a specific pathology - calculate the dose and determine the frequency of administration of medications; - apply different medicines to individual species of animals; - determine the therapeutic efficacy of medicines, withdrawal periods for animals and products of animal origin intended for use. - to choose ways of administration of medicines, taking into account undesirable reactions to medicines and mechanisms of drug resistance in certain types of animals; - plan treatment plans and manage treatment for the benefit of patients according to available resources.
Description of the discipline	
Prerequisites necessary for the study of the discipline	The course "Pharmacology and Pharmacotherapy" is based on the knowledge of such disciplines as "Anatomy", "Chemistry", "Biochemistry", studied in the 1st year, and "Physiology", "Microbiology", "Pathophysiology", studied in 2 - semester of the second year and the first semester of the third year. It is also a link linking the disciplines of fundamental theory (anatomy, chemistry, physics, physiology, pharmacognosy, genetics, microbiology, etc.) and clinical (internal animal diseases, surgery, obstetrics, parasitology, epizootology, toxicology) in preparation specialist of veterinary medicine.
Maximum number of students who can study simultaneously	10-13 applicants
Classroom topics	Lecture topics: 1. The subject "Pharmacology and pharmacotherapy", its content

	and objectives. Components, history of development and problems of pharmacology at the present stage of development. 2. Ways of administration of medicinal substances. In the comparative aspect, enteral and parenteral routes of administration, their positive and negative sides are considered. 3. Types of action of medicinal substances. action depending on the site of application, physiological and pathological condition of the body. Unwanted action. 4. The dose of the drug and its variety. Dependence of action of medicinal substances on various factors. Action taking into account the physical and chemical properties of drugs and its dependence on the state of the body. 5. General and comparative characteristics of the action of substances acting on the central nervous system. Inhalation and non-inhalation drugs. Sleeping pills. Alcohol, against convulsions 6. Psychotropic agents of suppressive type of action. Neuroleptics, tranquilizers and sedatives. Parameters of pharmacokinetics, pharmacodynamics and mechanism of action. The use of substances in the practice of veterinary medicine. A warning to use them. 7. Narcotic and non-narcotic analgesics. Features of action of antipyretic substances. Classification, mechanism of action, indications and contraindications to their use. 8. Substances that excite CNS Purine derivatives, camphor, and CNS plant stimulants. 9. General characteristics and classification of substances acting on the efferent nervous system. M- and H-cholinergic drugs. Practical application of cholinomimetics and cholinolytics. 10. Adrenergic substances. Sympatholytics. H-cholinergic substances. Ganglionic and muscle relaxant drugs. Indications and contraindications to their use. 11. Classification and general characterization of substances that suppress PMF. Locally anesthetic, binders, envelopes and absorbents. Their classification. Mechanism of action, indications and contraindications to use. 12. Substances that excite the afferent nervous system. Characteristic of the actual irritants, bitterness, expectorants, ruminants and vomiting. Laxatives and choleretics. Practical application and contraindications to their application .. 13. Chemotherapy. General characteristics, history of development, principles and classification of chemotherapeutic substances. Organic dyes. Arsenic preparations. Nitrofuran. 14. Antibiotic resistance. Research and monitoring of resistance of microorganisms to chemotherapeutic substances. Sulfonamide preparations. Oxyquinoline derivatives, imidazole 15. General characteristics, sources of production and classification of antibiotics. Antibiotics of the β-lactam group. Methods of antibiotic resistance prevention. 16. Antibiotics aminoglycosides, tetracyclines and other groups. Their use and complex antibiotic preparations. Withdrawal and methods of its control. 17. Anthelmintics. Coccidiostats. General characteristics, features of individual and group application 18. General characteristics and classification of antiseptic and disinfectants. Heavy metals. Classification, pharmacokinetics and

	pharmacodynamics of heavy metal salts. Indications and contraindications to their use. 19. Drugs of the phenol and cresol group. Directly oxidizers and formaldehyde. Preparations of iodine, chlorine, sulfur, acid, alkali. Sweetheart. 20. Characteristics of drugs that change the state of CCS and blood. Cardiac glycosides. Coagulants, anticoagulants, antispasmodics, antihistamines, blood and plasma substitutes. 21. Preparations of alkaline and alkaline-earth metals. Features of action of salts of sodium, potassium, calcium and magnesium. Rehydration preparations. 22. General characteristics, classification of substances that affect metabolism. Vitamin, hormonal and enzyme preparations.
	Lab topics to take: 1. General formulation. Nomenclature of substances. The recipe, its structure, rules of writing, prescriptions. 2. Pharmacy, incompatibility of medicinal substances. Dosage. sterilization of drugs. 3. Prescribing solid bulk (powders, dusts, powders, charges), solid extruded and dense dosage forms: tablets, capsules, briquettes, pills, granules, pills, boluses, porridges. 4 Prescribing candles, balloons, sticks, ointments, pastes, liniment, patches. Tests for hard and soft dosage forms. 5. Prescribing solutions for external, internal administration, injection and antibiotics. Emulsions, suspensions, mixtures, galenic and new galenical preparations. 6. Tests on liquid dosage forms. Testing recipe. 7. General pharmacology. The dependence of the action of medicinal substances on various factors. Final lesson in general pharmacology 8. Inhalation and non-inhalation narcotic substances. Alcohol, sleeping pills, anticonvulsants. Psychotropic agents of suppressive type of action. 9. Narcotic and non-narcotic analgesics. Anti-inflammatory (not steroid and steroid). 10. Substances that excite the central nervous system. 11. The final lesson on the substances acting on CNS 12. Substances that affect the efferent nervous system - vegetotropic drugs. Features of the action of cholinergic drugs. Adrenergic and H-cholinergic substances. 13. Topical anesthetics. Blockade mechanism. Binders, adsorbents and softeners 14. Substances that excite afferent NA. 15. Final training on substances acting on the peripheral NA. 16. Antimicrobial and anti-parasitic substances. Organic paints, nitrofurans. 17. Sulfanilamide preparations, derivatives of oxyquinoline and imidazole. 18. β-lactam antibiotics, aminoglycosides and topical antibiotics. 19. Antibiotics of the tetracycline group, levomycetin, macrolides, and other groups. Prescribing and justification for their application. 20. Anthelmintic, antiprotozoal drugs and coccidiostats. 21. Study of the mechanisms of resistance to chemotherapeutic substances. Comparison of principles and statutory requirements

	for the storage, sale and disposal of medicinal products. 22. Final training in chemotherapy. 23. Salts of heavy metals. Local and resorptive action. Preparations. Formaldehyde group and their derivatives. Oxidizing agents. 24. Preparations of iodine, chlorine, sulfur. Phenols and cresols. 25. The final lesson on antimicrobial drugs. 26. Cardiac glycosides. Coagulants and anticoagulants. Proteolytic and Antihistamines. Blood preparations, glucose. Spasmolytics 27. Salts of alkali and alkaline earth metals. Rehydration tools. 28. Water and fat soluble vitamin preparations. 29. Hormonal and enzymatic preparations. Dosage forms. 30. Final training on substances acting on CCS and metabolism.
Language of instruction	Ukrainian

Name discipline	**Obstetrics, gynecology and biotechnology of animal reproduction with the basics of andrology**
Lecturer	Svitlana Vlasenko Doctor of Veterinary Sciences, Associate Professor Head of the Department of Obstetrics and Biotechnology for Animal Reproduction Boris Ivasenko, Yuriy Ordin, Ihor Plakhotniuk Candidates of veterinary sciences, associate professors
Course and semester in which you plan to study the discipline	3B course, 5-6 semesters
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	As a result of studying the discipline, the student should **know:** - morpho-physiological features of the genitals of females and males; - physiology of sexual cyclicity; - methods of obtaining semen; - methods of evaluation of semen quality, its rarefaction and storage; - techniques for determining the optimal time for semen introduction to females animals; - methods of introduction of semen to females for artificial insemination; - questions about the physiological and pathological course of pregnancy; - clinical methods of diagnostics of pregnancy; - mechanisms of childbirth, causes of their pathological course, indications for obstetric care and methods of its implementation; - features of physiology and pathology of newborns; – methods of diagnosis, treatment and prevention of obstetric diseases; - physiology and development of breast pathology, master methods of diagnosis, treatment and prevention for mastitis; - how to carry out obstetric examination of livestock; - the main forms and causes of infertility. **be able:** - defrost, evaluate, determine the optimal time and inseminate

	females by different methods - diagnose pregnancy by clinical methods; - diagnose obstetric diseases, pathologies of the breast, newborns and treat sick animals; - organize births and receptions of newborns and, according to testimony, provide maternity care; - carry out obstetric examination of the herd; - identify the causes and extent of infertility and develop preventive measures.
Description of the discipline	
Prerequisites necessary for the study of the discipline	The audience of the department, the laboratory of artificial insemination, operating clinics of small and exotic animals, clinics of ruminants, clinics of horses, clinics of pigs.
Maximum number of students who can study simultaneously	10-11 applicants
Classroom topics	**Lecture topics:** 1. Introductory lecture. 2. Evolution of reproduction and morpho-physiological features of the reproductive system in farm animals. 3. The sexual cycle. 4. Regulation of sexual function in animals. 5. Physiology and organization of natural insemination. 6. Obtaining and evaluating semen quality. 7. Organization and technology of artificial insemination of farm animals in Ukraine. 8. Diagnosis of pregnancy. 9. The physiology of pregnancy. 10. Abortion. 11. Diseases of pregnant animals. 12. Physiology of childbirth. 13. Pathology of childbirth. 14. Physiological features of newborns and their illness. 15. Physiology of the postpartum period. 16. Pathology of the postpartum period. 17 Breast physiology. 18. Mastitis. 19. Obstetric examination. 20. Infertility and beefiness of animals.
	Laboratory topics: 1. Engineering and biosafety instruction. 2. Morphophysiological characteristics of the genital organs of females of farm animals. 3. Morphophysiological characteristics of the genitalia of male farm animals. 4. Methods and techniques for obtaining and evaluating semen quality. 5. Detection of sexual hunting and the optimal time for the introduction of sperm. 6. Preparation of semen for introduction. Doses of semen. 7. Methods of introduction of semen by artificial insemination. 8. Documentation at the point of artificial insemination. 9. Methods of diagnostics of pregnancy and its terms. 10. The development and position of the fetus in the uterus during

	different periods of pregnancy, determining its age. 11. Origin, development and function of amniotic membranes. 12. Placentogenesis and specific features of the structure of the placenta. 13. Transparent organs and features of blood circulation in the fetus. 14. Methods of obstetric research. 15. Indications and basic rules for delivery of maternity care 16. Obstetric instruments. 17. Certain cases of obstetric care. 18. Phantom Exercises for Maternity Care. 19. Diagnosis of littering and treatment of animals. 20. Evaluation of the development of newborns. 21. Methods of diagnosis and treatment of newborn diseases. 22. Methods and tools for the administration of medicinal substances into the uterus and vagina. 23. Methods and tools for pathogenetic therapy for obstetric and gynecological diseases. 24. Organization of postpartum follow-up and postpartum pathology prediction system. 25. Acute subinvolution, postpartum metritis. Their complications, treatment and prevention. 26. Methods of stimulation of involutionary processes. 27. Methods of breast examination and diagnosis of mastitis. 28. Treatment of animals for mastitis. 29. Determination of infertility rates and economic losses due to cow infertility.
Language of instruction	Ukraine

Subjects	**Anesthesiology and operative surgery**
Teacher	Chornozub Mykola, Yemelyanenko Olexandr, Candidates of Veterinary Sciences, associate professors of the Department of Surgery and Diseases of Small Animals
Course and semester in which you plan to study the discipline	2–3 B course, 4–5 semester
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	Specialized professional competence (SC 9): Ability to perform obstetric and gynecological and surgical procedures and operations. The result of teaching the discipline is the acquisition of students such knowledge and skills. Knowledge. Have knowledge of the technique of fixation of the creatures, preparation of the surgeon's hands, tools and operating field, as well as knowledge of the action of painkillers, antimicrobials and other drugs used in surgical procedures and operations. Skill. Ability to prepare an animal for obstetric surgery and surgery - sterilize and use tools, suture and dressing material,

	perform local anesthesia and general anesthesia. To master the technique of intradermal, subcutaneous and intramuscular injections and punctures of blood vessels, blood transfusions, obstetric-co-surgical measures and operations in different parts of the body on different organs of animals.
Description of the discipline	
Prerequisites necessary for the study of the discipline	Production conditions of dairy farms, sheep farms, pig farms and the department's inter-departmental clinic
Maximum number of students who can study simultaneously	10-11 applicants
Classroom topics	**Lecture topics:** 1. Subject and methods of surgical surgery and topographic anatomy. 2. Stopping of bleeding and methods of prevention of blood loss during surgery. 3. The physiology of pain. Specific features of mechanisms of pain response. 4. General anesthesia. 5. Monitoring of anesthetized animals. 6. Local anesthesia. 7. Head surgery. 8. Operations in the abdominal wall and abdominal organs. 9. Surgical treatment of hernias. 10. Castration of males and females. 11. Operations on the prepuce and penis. 12. Surgery in the perineum and bladder. 13. Operations on the rectum and in the anus. Tail operations. 14. Operations on the thoracic limbs. 15. Operations on the pelvic limbs.
	Practical topics: 1. Features of work in a surgical clinic and in the conditions of production during surgery. 2. Rules for handling animals, their fixing and immobilization. 3. Surgical instruments and equipment. 4. Prevention of surgical infection. 5. The technique of basic surgical manipulation (injection of drugs, bloodletting, blood transfusion). 6. Tissue separation and joining. 7. Desmurgy. 8. Monitoring of anesthetized animals. 9. Local anesthesia. 10. Head surgery. 11. Neck and neck surgery. 12. Operations in the area of the abdominal wall and abdominal organs. 13. Surgical treatment of hernias. 14. Castration of males and females. 15. Operations on the prepuce and penis. 16. Operations in the area of the perineum and bladder. 17. Operations on the rectum and in the anus. Tail operations. 18. Operations on the thoracic limbs.

	19. Operations on the pelvic limbs.
Language of instruction	Ukrainian

Course title	**General and special surgery for large animals**
Teacher	Rublenko Mykhaylo Vasyliovych, Ilnitsky Nikolay Grigorovich, Rublenko Sergey Vasilyevich, Doctors of Veterinary Sciences, Professors; Andriyets Volodymyr Hryhorovych, Yaremchuk Andriy Vasilyovych, Candidates of Veterinary Sciences, Associate Professors, Department of Surgery and Diseases of Small Animals
Course and semester in which you plan to study discipline	3-4 B course, 7 - 8 semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
The list of competences and relevant learning outcomes of the discipline	The discipline "General and Special Surgery for Large Animals" involves the acquisition of professional competence by students in accordance with the Competency Standard (SC9) on the ability to perform surgical measures and operations in animals. and skill. Knowledge: Have knowledge of animal fixation techniques, training of the surgeon's hands, tools and operating field, as well as knowledge of the effects of painkillers, antimicrobials and other medicines used during surgical procedures and operations Skill: Ability to prepare an animal for obstetric surgery and surgery - sterilize and use tools, sutures and dressings, perform local anesthesia and general anesthesia. To possess technique of intradermal, subcutaneous and intramuscular injections and punctures of blood vessels, blood transfusions, carrying out of obstetric-surgical measures and operations in different parts of the body on different organs of animals
Description of the discipline	
Prerequisites for the study of the discipline	Inter-departmental clinics and farms of the university's research farm, public and private animal companion clinics, farms of farms and the department's inter-departmental clinic
Maximum number of students who can study	10-11 applicants at a time
Classroom topics	Lecture topics: 1. Introduction. The main tasks of veterinary surgery at the present stage of animal husbandry development. Animal Injury and Injury: Distribution, Classification, and Prevention. 2. The general reaction of an organism to a trauma is shock. 3. Inflammation as a local and systemic response of the body to trauma. 4. Open mechanical damage - wounds. Foreign bodies. Necrosis, gangrene, ulcer.

	5. Closed mechanical damage. Vascular and nerve diseases, brain and spinal cord injuries. 6. Surgical infection. Anaerobic and putrefactive infections: etiological, pathogenetic features. 7. Bone diseases. 8. Diseases of the joints. 9. Diseases of the muscles, tendons, tendon sheaths and burs. 10. Veterinary orthopedics. 11. Diseases of the eyes. 12. Diseases in the area of the head, neck, withers and thoracic cavity. 13. Diseases in the area of the abdominal wall and cavity.
	Practical topics: 1. Familiarity with the purpose and task of clinical and surgical training. Safety when working with surgically ill animals. Features of work in a surgical clinic. Supervision and management of medical history. 2. Investigation of a surgically ill animal. Post-operative care. Development of systems of prevention of different types of traumatism on the basis of situational tasks. 3. Research and treatment of animals with closed mechanical damage (injury, hematoma lympho-extravasate). Treatment of animals with vascular and nerve diseases. 4. Diagnosis and treatment of animals in shock. 5. Clinical forms of inflammatory processes (clinical material and situational tasks). 6. Research and treatment of animals with inflammatory processes. 7. Investigation of animals with wounds (symptoms of different types of wounds). 8. Mastering the basic methods of clinical and instrumental control of the course of the wound process. 9. Development of surgical and locally therapeutic methods of treatment of different types of wounds. 10. Clinical forms of soft tissue surgical infection. 11. Training in the study and treatment of animals with aerobic infection. (abscess, phlegmon). 12. Training in the study and treatment of animals with anaerobic and putrefactive infection. 13. Clinical and laboratory diagnostic criteria for systemic papal syndrome (sepsis) syndrome. 14. Research and treatment of animals with specific surgical infection (actinomycosis, actinobacteriosis, botryomycosis, tetanus). 15. Diagnosis of major bone diseases. 16. Conservative and surgical methods of treatment of bone fractures. 17. Diagnosis and treatment of joint diseases (closed and open mechanical damage, aseptic inflammatory processes. 18. Diagnosis and treatment of joint diseases (closed and open mechanical damage, aseptic inflammatory processes). 19. Diagnosis and treatment of joint diseases (septic inflammatory processes - purulent arthritis, granulomatous arthritis, rheumatic arthritis, chronic without exudative processes). 20. Diagnosis and treatment of degenerative-dystrophic diseases of

	the joints (arthrosis, osteochondrosis, joint dysplasia). 21. Diagnosis and treatment of tendon diseases (stretches and ruptures, wounds, acute aseptic tendinitis, purulent tendinitis, onchocercosal tendinitis). 22. Diagnosis and treatment of diseases of the tendon sheaths and bursa (acute and chronic aseptic tendovaginitis, purulent tendovaginitis). Bursiti. 23. Diagnosis and treatment of muscle diseases (myositis, muscle rheumatism) 24. Diagnosis and treatment of muscle diseases (myopathosis, muscle atrophy). 25. Anatomical and topographic features of extremities in animals of different species. Biomechanics of musculoskeletal system. Methods of diagnosis of lameness. 26. Training orthopedic treatment of hooves. 27. Training of hoof and hoof deformities. 28. Diagnosis and treatment of pododermatitis. 29. Diagnostic and therapeutic approaches to ulcerative and phlegmonous processes in the area of the fingers. Podarthritis. Tiloma. Necrobacteriosis. 30. Diagnostic and therapeutic approaches in diseases of the thoracic limbs (diseases of the nerves, diseases in the shoulder and shoulder area). 31. Diagnostic and therapeutic approaches in diseases of the thorax (diseases in the area of the elbow, forearm, wrist). 32. Diagnostic and therapeutic approaches in diseases of the pelvic limb (diseases of the nerves, muscles of the croup and thigh, knee joint). 33. Diagnostic and therapeutic approaches in diseases of the pelvic limb (diseases in the area of the lower leg, mold, mold). 34. Anatomy and physiology of the eye. Investigation of animals with eye damage. 35. Diagnosis and treatment of eyelid diseases (wounds of the eyelids, inflammation of the eyelids, rotation and inversion of the eyelids, lowering of the upper eyelid).
Language of instruction	Ukrainian

Subjects	**Feeding of animals**
Teacher	Bomko Vitalii, professor of department of technology of feed, feed additives and animal feeding; Kuzmenko Oksana, Tytariova Olena, associate professors of the department of feed technology, feed additives and animal feeding
Course and semester in which you plan to study discipline	2B course IV semester
Faculties that are invited to study discipline	Faculty of veterinary medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of such knowledge and skills by students. Knowledge: - to know the role of nutrients in animals of different species and groups; - to know the classification and nutrition of feed;

	- to know methods of estimation of forage nutrition; - know the technology of feed preparation for feeding; - to know the basics of normalized feeding of animals of different species, sex and age groups. Skill: - be able to calculate the nutritional value of feeds by the results of the analysis; - be able to do zootechnical feed analysis; - be able to make diets according to detailed feeding standards, according to which (depending on the type of animal) nutrition in the diets is provided according to 24-30 indicators instead of previously adopted; - be able to analyze the diets of feeding animals of different species, sex and age groups; - be able to draw conclusions about the completeness of diets and the impact on metabolic processes, physiological state, reproductive capacity, productivity and quality of products; - be able to work out ways to improve animal feeding; - to have methods and techniques for controlling the completeness of feeding animals.
Description of the discipline	
Prerequisites for the study of the discipline	The course material is closely related to animal physiology and biochemistry, feed production, microbiology, clinical diagnostics, therapy, veterinary and sanitary examination.
Maximum number of students who can study	**10–30 applicants at a time**
Classroom topics	Lecture topics: 1. The role of feeding in improving animal productivity and disease prevention. Estimation of feed nutrition by chemical composition. Digestion of feed as the first stage of the use of organic nutrients in animals. 2. Metabolism and energy in animals. 3. Energy, protein, fat, carbohydrate, mineral and vitamin nutrition of feed. Comprehensive assessment of the nutrition of feed and diets. 4. Classification and summary of the main feed and additives. Biology of feed and toxic feed 5. Basics of normalized feeding. Feeding real cows. Feeding of dry cows and heifers. 6. Feeding sheep and horses. 7. Feeding pigs. 8. Feeding of poultry. Feeding rabbits, fur animals.
	Laboratory topics: 1. Estimation of feed nutrition by chemical composition. 2. Assessment of nutrient forage on the digestibility of nutrients in the body. 3. Metabolism in animals. 4. Energy exchange in animals. 5. Traditional assessment of energy nutrition of feed. 6. Modern assessment of the energy nutrition of feed. 7. Evaluation of protein and vitamin nutrition of feed. 8. Evaluation of mineral nutrition of feed 9. Quality control and accounting of feed according to current standards 10. State standard of Ukraine. Requirements and control of quality

	and nutrition of roughage 11. State standard of Ukraine. Requirements and quality and nutrition control of succulent feed 12. State standard of Ukraine. Requirements and quality and nutrition control of grain feeds and compound feeds 13. Application of modern analytical methods in the field of control of mycotoxins content in feed 14. Modern methods of quality control of feed: the content of alkaloids, tannins, saponins, glycosides, nitrates, etc. 15. Basics of normalized feeding 16. Feeding of lean dry cows 17. Feeding real cows in winter 18. Feeding real cows in the summer 19. Zootechnical evaluation of rations of active cows 20. Compound feed 21. Feeding of young cattle in the dairy period 22. Feeding of cattle repair young 23. Feeding sheep 24. Feeding horses 25. Feeding pigs of different sex and age groups 26. Feeding chickens 27. Feeding birds of other species 28. Feeding of rabbits and fur animals
Language of instruction	Ukrainian

Discipline	**Food safety, food and feed quality**
Lecturer	**Lyasota Vasil,** Doctor of the Veterinary Sciences, Head of the Department **Khitska Oksana,** Ph.D (Veterinary Sciences), Associate Professor **Bukalova Nataliia,** Ph.D (Veterinary Sciences), Associate Professor **Dzhmil Volodymyr,** Ph.D (Veterinary Sciences), Associate Professor **Tyshkivska Nataliia,** Ph.D (Veterinary Sciences), Associate Professor **Department of the Veterinary and Sanitary Expertise, Hygiene of Animal Husbandry Products and Pathological Anatomy called J.S. Zahaievskyi**
Course and semester of discipline study	**Bachelor:** Preparation on the basis of complete general secondary education - Course 4 (7-8 semesters). Preparation on the basis veterinary colleges - Course 2-3 (4-5 semesters). **Master's Degree:** Preparation on the basis of complete general secondary education - Course 4 (7-8 semesters). Preparation on the basis of veterinary colleges - Course 2-3 (4-5 semesters).
Faculties and specialties for which discipline is offered	**Faculty of Veterinary Medicine** The discipline will also be useful and recommended for students, which studying at the specialties: "Food Technology", "Technology of production and processing of animal products", "Aquatic bioresources"

List of competences and relevant learning outcomes provided by the discipline	**Special (specialty, subject) competences:** Ability to organize supervision and control of production, storage, transportation and sale the products of animal and vegetable origin **Learning outcomes:** Know and use veterinary terminology correctly; Develop measures aimed at protecting the population from diseases common to animals and humans; To propose and use appropriate innovative methods and approaches for solving problematic situations of professional origin; Summarize and analyze information on the performance of veterinary professionals of different subordination; Know the rules and regulations regarding the supervision and control of the production, storage, transportation and sale of products of animal and vegetable origin.
Description of the discipline	
Prerequisites necessary for the study of the discipline	The course "Food Safety, Food and Feed Quality" is based on the knowledge of the following disciplines: "Animal Anatomy", "Veterinary Law, Organization and Economics of Veterinary Affairs", "Veterinary Microbiology", "Internal Animal Diseases", "Veterinary Toxicology", "Pathological anatomy and necropsy", "Obstetrics, gynecology and biotechnology of animals reproduction with the basics of andrology", "Epizootology, infectious diseases and preventive medicine", "Parasitology and invasive diseases", "Propedeutics and therapy of internal disease in large animals".
Students number (max) at class	25 students
Classroom topics	**Topics of lectures:** 1. Introduction to discipline, its importance in the training of veterinary medicine specialist and in the protection of people and animals. The main provisions of the national legislation regarding food safety and quality issues. 2. Fundamentals of European and International Food Safety Legislation. "EU Hygiene Package" and its reflection in the legal framework of Ukraine. 3. Transportation of slaughtered animals, their keeping before slaughter. Animal welfare during transportation and before slaughter. 4. Enterprises for the processing of slaughter animals and veterinary and sanitary requirements for them. 5. Procedures for pre-slaughtering animals. The basics of animal slaughter technology and hygiene processing of slaughter products 6. Organization and method of post-slaughter inspection of products of animal origin. Principles of audit and official control at enterprises (slaughterhouses). Hygienic conditions analysis and risk assessment for slaughter and primary processing of animals 7. Commodity evaluation of meat. 8. Post-mortem inspection and sanitary evaluation of products of slaughter of animals in case of infectious diseases detection. 9. Post-mortem inspection and sanitary evaluation of products of slaughter of animals in case of detection of invasive diseases. 10. Food poisoning, their prevention. Public health (risks and prevention of zoonoses and diseases transmitted through food products; the basis of the methodology for the study of outbreaks of foodborne diseases). The interaction of state bodies and institutions that ensure the

	safety of food products and the health of people. 11. The basics of technology, hygiene and veterinary and sanitary expertise of preserving meat and meat products. 12. Assessment of fish quality and safety. 13. General concepts of milk. Requirements of the state standard for cow's milk. 14. Veterinary and sanitary conditions for obtaining and primary milk processing on farms. 15. Veterinary and sanitary assessment of milk in case of infectious diseases. 16. The basics of the HACCP system. The concept of pre-requisite programs and risk-based food control system. 17. State control and hygiene requirements for the sale of food in the markets. State control of food of animal origin in the market. 18. Fundamentals of national legislation on the control of sanitary safety during international trade in animals and products of animal origin. he role of international organizations (FAO, Codex Alimentarius, OIE, WHO, etc.) in regulating the international trade in food products. World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). Traceability of animals and food products.
	Practical topics: 1. Acquaintance with safety, biosafety and academic integrity principles. Fattening categories of slaughtered animals and carcasses according to state standards. 2. Post-mortem inspection procedures for major lymph nodes, head, internal organs and carcasses of slaughtered animals. 3. Application of fitness mark and veterinary stamps. Trademark evaluation and meat marking. 4. Hygienic requirements for meat shops and pavilions. Sorting of meat carcasses for retail trade. 5. Methods for determining the meat of different animal species. 6. Methods for determining the meat of patients killed in an agonized state and killed animals. Sanitary assessment. 7. General veterinary prevention measures in line with the concept of an "early detection system" to prevent and timely identify outbreaks of foodborne illness. Sanitary evaluation of meat for the detection of pathogens. 8. Procedures and methods of post-mortem diagnostics of the products of slaughter of animals for parasitic zoonoses. 9. Fundamentals of the method of investigation of foodborne disease outbreaks. Sources search updated information on epizootic and epidemiological welfare. 10. Decontamination of conventional meat, quality control of decontamination. Procedures for the management of animal waste. 11. Methods for determining the degree of freshness of meat of different species of animals and poultry. Sanitary evaluation of meat of different freshness. 12. Sampling and quality assessment of salted and salted smoked products. 13. Hygiene, evaluation of the quality and safety of canned meat. Canned food defects, their sanitary assessment. 14. Production hygiene, quality and safety assessment of sausage products. Defects of sausage products, their sanitary evaluation. 15. Quality and safety of animal fats. Sampling procedures and

	methods for the study of the freshness of animal fats. Changes in fat during production and handling. 16. Sampling procedures, procedures and methods for fish re-search. Organoleptic evaluation of fish quality by tasting. Deter-mination of fish freshness and sanitary evaluation of fish of differ-ent freshness. Fish defects, sanitary assessment. 17. Veterinary examination of eggs. Classification, marking. Egg defects, sanitary evaluation. 18. Sampling and canning procedures for milk samples. Or-ganoleptic evaluation and defects of milk. 19. Determination of density, purity, acidity of milk, dry matter and skimmed milk powder. Analyzing the results obtained for compliance with the requirements of the national standard. 20. Determination of fat, protein, lactose in milk. Interpretation of results. 21. Methods of control of milk falsification, sanitary evaluation of milk with falsification. Detection of milk from mastitis cows. De-termination of somatic cell content in milk. 22. Biological hazards in milk. Reductase-test for rapid diagnosis of microbial contamination in milk. 23. Classification and assortment of dairy products, features of technology of their production. Veterinary examination of dairy products. 24. Good hygiene practice (GHP) and prerequisite programs. 25. National system for the control of residues of contaminants, toxicants and veterinary preparations in foodstuffs. 26. Food hazard and Risk Analysis for consumer. 27. National standard requirements for honey. Classification, chemical composition, value and properties of honey. Sampling procedures, quality assessment and safety of honey. 28. Veterinary and sanitary expertise of food products of plant origin. 29. Safety and quality of feed for productive animals. Traceability of feed.
Language	Ukrainian

Subjects	**Veterinary management**
Teacher	Tirsin Roman Vladimirovich TsarenoTaras Mikhailovich Candidates of veterinary sciences, Associate professors of the department of epizootology and infectious diseases
Course and semesterin which you plan to study the discipline	3B course, 5 semester
Faculties whose students are in vitedtostudy discip line	Faculty of veterinary medicine
List of competences and relevan tlearnin gout comesprovidedby the discipline	The resul to fteaching the discipline is the acquisition of the following know ledgeand skills by students: **Know ledge:** - managemen to fveterinary medicine institutions; - resource management; - managemen to fproductionand biological processes;

	- managemen to f marketing activitiesin the fiel do fveterinary medicine. **Skill:** - manage material, human, financial an din formationre sources; - understand the current market for veterinary products and services, as wellasmarke tcompetition; - To hav et he basics of marketing as a business philosophy in private veterinary medicine.
Description of the discipline	
Pre requisites necessary for the study of the discipline	None
Maximum number of students who can study simultaneously	12 students
Class roomtopics	**Lecturetopics:** 1. The concept of management. 2. Information and communication. 3. Managerin the veterinaryin stitution management system 4. The subjec to fmarketing. 5. Method sofdistribution of goods. Who lesale and retailtradein veterinary medicine. 6. Demand generation and sales promotion. 7. Pricing for veterinary products and services. **Practical topics:** 1. The conceptand role of entrepreneurshipin veterin arymedicine. 2. Legal basis of veterina rybusiness. 3. Rightsan dresponsibilitie sof a privatevet erinarian. 4. Organizationaland legal forms of veterinary business. 5. Organization of busines sactivity of doctor-entrepreneur. 6. Contractua lrelation sin the activity of entrepreneurs. 7. Property of veterinary specialists, veterinaryin stitution sand organization, rento fveterinary property. Risks of veterinary entrepreneu rship. 8. The concep to management. 9. Managemen tfunctions. 10. Managerin the veterinary establishment managem ent system. 11. Managemen to flaborres our cesand conflicts. 12. Business planningin veterinary business. 13. Management in veteriary medicine. 14. Managemen to fbiological processes (forexample, epizooticprocess). 15. For ecasting a sanelem ent of control of biological processes. 16. Market segmentationan dmarket capacity determination. 17. Veterinary products and services. 18. Demandgenerationan dsales promotion. 19. Pricing for veterinary products and services.
Language of instruction	Ukrainian

OPTIONS DISCIPLINS

Subjects	**Latin**
Teacher	Tsvid-Grom Olena, Candidate of Philological Sciences, Associate Professor of the Chair of Foreign Languages
Faculty where the discipline is taught for students	Veterinary medicine department
Key skills developed	Gained results of students due to discipline studying: *Experience:* – The Latin alphabet, rules of reading and word stress. – Initial form of all parts of speech learned during the course; – Declension and conjugation of the notional parts of speech (nouns, adjectives, verbs); – Grammar tenses; – Adjectives and Pronouns used for prescriptions and clinical terminology; – 50-70 Latin figures of speech. *Skills:* – Fluent reading; – Understaning the meaning and etymology of the term composite part; – Defining the parts of the composite terms; – Understanding the general meaning of the composite term; - Accurate translation of the Latin sentences. – Two-way translation of anatomical, histological, biological and pharmaceutical terms and texts from Latin into Ukrainian and vice versa; – Writing of the pharmaceutical prescriptions.
Discipline description	
Prerequisites	*None*
Class size	25 stuents
Topics of the practical classes	1. History of the Latin language development. Phonetics. 2. Word division into syllables. Stress. 3. Verbs. Grammatical categories of the verb. Conjugation. 4. Nouns. The noun declension. 5. Adjectives. Grammatical categories of the adjectives. The adjective declension. 6 Participles. Pronouns. 9. Word formation of medical terms. 10. Structure and rules of prescription writing, also medical forms and clichés.
Course language	Latin/Ukrainian

Subjects	**Latin terminology**
Teacher	Tsvid-Grom Olena, Candidate of Philological Sciences, Associate Professor of the

	Chair of Foreign Languages
Length of course What year student for	1 year, 1, 2 terms
Faculty where the discipline is taught for students	Veterinary medicine department
Key skills developed	Gained results of students due to discipline studying: *Experience:* – The Latin alphabet, rules of reading and word stress. – Initial form of all parts of speech learned during the course; – Declension and conjugation of the notional parts of speech (nouns, adjectives, verbs); – Grammar tenses; – Adjectives and Pronouns used for prescriptions and clinical terminology; – 50-70 Latin figures of speech. *Skills:* – Fluent reading; – Understaning the meaning and etymology of the term composite part; – Defining the parts of the composite terms; – Understanding the general meaning of the composite term; - Accurate translation of the Latin sentences. – Two-way translation of anatomical, histological, biological and pharmaceutical terms and texts from Latin into Ukrainian and vice versa; – Writing of the pharmaceutical prescriptions.
Discipline description	
Prerequisites	*None*
Class size	25 stuents
Topics of the practical classes	1. History of the Latin language development. Phonetics. 2. Word division into syllables. Stress. 3. Verbs. Grammatical categories of the verb. Conjugation. 4. Nouns. The noun declension. 5. Adjectives. Grammatical categories of the adjectives. The adjective declension. 6 Participles. Pronouns. 9. Word formation of medical terms. 10. Structure and rules of prescription writing, also medical forms and clichés.
Course language	Latin/Ukrainian

Subjects	**Biophysics**
Teacher	Olexander Tsybulin Doctor of Biological Sciences, Associate Professor of the Department of High mathematics and physics
Course and semester in which you plan to study	1B course, I semester

discipline	
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of the following knowledge and skills by students: Knowledge - possession of scientific methodology for the analysis of natural phenomena; - mastering the basic physical laws and laws; - understanding the essence of the physical processes underlying the functioning of living systems; - methods and techniques that are applicable to the study of biophysical phenomena. Skill - to analyze the structure of biological systems; - determine and measure the physical parameters of biological systems; - to simulate the interaction of physical factors with biological systems; - Properly use medical devices for diagnosis and treatment.
Description of the discipline	
Prerequisites for the study of the discipline	None
Maximum number of students who can study	**10–13 applicants at a time**
Classroom topics	Topics of lectures 1. Physical basics of mechanics, biomechanics. 2. Molecular physics of gases and liquids. 3. Electricity and magnetism. Electrical and magnetic methods for the diagnosis and treatment of animals. 4. Optics and optical methods in veterinary medicine. 5. The structure of the atom and its nucleus. Practical topics Introductory session № 1. Elements of the theory of errors Introductory session № 2. Measuring instruments Laboratory work № 1. Determination of acceleration of free fall of bodies by means of a mathematical pendulum. Laboratory work № 2. Determination of density of solids and liquids. Laboratory work № 3. Determination of the moment of inertia of the Oberbeck pendulum. Laboratory Work № 4. Determination of the Viscosity of Liquids by the Oswald Method. Laboratory work № 5. Determination of audibility by means of a sound generator by the method of stimulation thresholds. Laboratory work № 6. Determination of the coefficient of surface tension of liquids by the method of separation of air bubbles. Laboratory work № 7. Determination of specific heat of vaporization by calorimetric method. Laboratory work № 8. Determination of humidity. Laboratory work № 9. Measurement of AC power, power and resistance of an electric lamp.

	Laboratory work № 10. Determination of electrochemical equivalent of copper and magnitude of elementary charge. Laboratory work № 11. Determination of the self-induction coefficient. Laboratory work № 12. Determination of the transformation factor and the efficiency of the transformer. Laboratory work № 13. The device of ultra-high frequency therapy and work with it. Laboratory work № 14. Determination of refractive index and concentration of dry matter in solutions using a refractometer. Laboratory work № 15. Determination of light wavelength by means of diffraction grating. Laboratory work № 16. The structure and principle of operation of the optical microscope, the determination of the size of small objects using an optical microscope. Laboratory work № 17. Determination of the concentration of eosin solution using a photometer. Laboratory work № 18. Investigation of the dependence of the photocurrent power on the illumination of the photocell.
Language of instruction	Ukrainian

Academic subject	**Veterinary radiobiology**
Teacher	**OleksandrRozputnyi**, doctor of Agricultural Sciences, professor, Head of the Department of Safety Life`s activity **Ivan Pertsovyi**, PhD, Associate Professor of the Department of Safety Life`s activity **Viktor Herasymenko**, PhD, Associate Professor of the Department of Safety Life`s activity
Course and semester in which you plan to study discipline	1B year, 2 semester 211-Veterinary medicine
Faculties that are invited to study discipline	**Faculty of Veterinary Medicine**
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of such knowledge and skills by students: **Knowledge:** - patterns of migration of radionuclides by trophic chains of ecosystems, their accumulation in feed, animal bodies, milk, meat and

	other products of animal husbandry and crop production; - principles and measures for conducting agricultural production in radioactively contaminated areas; - effects of ionizing radiation on the animal's body; - regulatory and legal regulation in the field of radiation safety and radioactive waste management; - rationing the content of radionuclides in food products and other crop and livestock products, drinking water; - principles and measures of radiation safety when working with sources of ionizing radiation and radioactive substances. **Skills:** - conduct dosimetric, radiometric, and spectrometric studies of food products, crop and livestock products, and environmental objects; - to assess the radioecological status of environmental objects and the radiation situation in the territories that were exposed to radioactive contamination as a result of the Chernobyl disaster; - conduct veterinary and sanitary assessment of livestock products under radiation exposure of animals and affected by their incorporated radionuclides; - to predict the accumulation of radionuclides in the crop products and livestock and to develop measures to maintain agricultural production on radioactively contaminated territories.
Description of the discipline	
Prerequisites for the study of the discipline	absent
Maximum number of students who can study	25
Classroom topics	**Lecture topics:** Topic 1. The concept of veterinary radiobiology and its tasks. Topic 2. Main regularities of radioactive transformations of atomic nuclei. Topic 3. Registration of ionizing radiation. Topic 4. Radioactive elements and their characteristics Topic 5. Migration of radioactive elements in the biosphere. Topic 6. Biological effect of ionizing radiation. Topic 7. Conducting agricultural production in the territories exposed to radioactive contamination as a result of the Chernobyl disaster. Topic 8. Radiation veterinary and sanitary examination of veterinary control objects, use of ionizing radiation in animal husbandry and veterinary medicine.
	Practical training topics: Topic 1. Familiarization with the equipment of radiological laboratories and safety rules when working in radiological laboratories. Topic 2. Requirements for storage, accounting and handling of ionizing radiation sources in radiological laboratories. Topic 3. Calculation of the activity of radionuclides and doses of ionizing radiation. Topic 4. Study of technical characteristics of ionization chambers, proportional and gas-discharge and scintillation meters. Topic 5. Familiarization with the General characteristics, device and principle of operation of radiation monitoring devices.

	Topic 6. Determination of the dose rate of gamma radiation in the room and in the open area. Topic 7. Selection and preparation of samples for radiometric and spectrometric studies Topic 8. Determination of 137Cs activity in food products at USK Gamma Plus. Topic 9. Determination of 137Cs activity in food products by radiometers "RUB-01P6", "RUG-G". Topic 10. Familiarization with the method of physical concentration of samples (drying, evaporation, charring and greening). Topic 11. Introduction to the method of radiochemical isolation of 90Sr from soil samples. Topic 12. Radiochemical isolation of 90Sr from samples of food products and crop and livestock products. Topic 13. Determination of 90Sr activity in food products and soils on USK Gamma Plus. Topic 14. Prediction of 137Cs and 90Sr activity in crop and livestock products obtained in radioactively contaminated areas.
Language of instruction	Ukrainian, English

Academic discipline	**Fundamentals of genetics**
Tutor	Babenko Olena Ivanivna, PhD agricultural sciences, associate professor, department of genetics, breeding and selection of animals
Courses and semesters, when the discipline is planning to study	2B course, 3 semester
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competencies and learning-related outcomes that discipline provides	The result of learning the discipline is the acquisition by students of such knowledge and skills: *Knowledge* • the basis of disease resistance in farm animals and reasons of genetic disorders; • genetic polymorphism of protein systems and blood groups in animals; basic laws of genetic processes in populations of farm animals; • the impact of selection on the survival rate and health of animals; • inbreeding and heterosis effects. *Skills* • biometric methods for assessing the effectiveness of the use of veterinary, prophylactic and therapeutic measures against animal diseases; • genealogical analysis of herds in order to detect genetic resistance to diseases of animals and treatment of animal diseases; • to determine of genotype ratio and the frequency of semi-lethal and lethal genes frequency in herds; to develop measures for preventing the birth defects and abnormal offspring; • to find out methods for increasing the efficiency of produc-

	tion of products from animals.
Description of the discipline	
Preconditions necessary for the study of discipline	No
Maximum number of students who can study simultaneously	115 students
Lesson plans	**Lectures** 1. Heredity and variability. Cytological and molecular basics of heredity. 2. Mutational variability. Classification of types of mutations. 3. Mendel's principles of inheritance. 4. Linked inheritance of traits. Sex-determination genetics. 5. Immunogenetics. 6. Animal anomalies. Genetic resistance of animals to diseases. 7. Animal selection for viability and resistance to diseases **Practical classes** 1. Cell structure. Meiosis and its genetic significance. Mitosis. 2. Double-stranded structure of DNA. Transcription. Protein biosynthesis. 3. Transmission and expression of genetic information. 4. Mendelian patterns of inheritance. 5. Mutational variability. Occurrence, classification and properties of gene, chromosomal and genomic mutations. 6. Types of interaction of non-allelic genes. 7. Types of sex formation. Gender determination mechanisms. Types of chromosomal sex determination.
Teaching language	Ukrainian

Academic discipline	**Veterinary genetics**
Tutor	Babenko Olena Ivanivna, PhD agricultural sciences, associate professor, department of genetics, breeding and selection of animals
Courses and semesters, when the discipline is planning to study	2B course, 3 semester
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competencies and learning-related outcomes that discipline provides	The result of learning the discipline is the acquisition by students of such knowledge and skills: *Knowledge* • theoretical foundations of general genetics. • the basis of disease resistance in farm animals and reasons of genetic disorders; • genetic polymorphism of protein systems and blood groups in animals; basic laws of genetic processes in populations of farm animals;

	Skills • biometric methods for assessing the effectiveness of the use of veterinary, prophylactic and therapeutic measures against animal diseases; • genealogical analysis of herds in order to detect genetic resistance to diseases of animals and treatment of animal diseases; to determine of genotype ratio and the frequency of semi-lethal and lethal genes frequency in herds; to develop measures for preventing the birth defects and abnormal offspring;
Description of the discipline	
Preconditions necessary for the study of discipline	No
Maximum number of students who can study simultaneously	15 students
Lesson plans	**Lectures** Patterns of inheritance of traits in sexual reproduction. Inheritance of gender-related traits 2. Genetic basis of hereditary resistance of animals to diseases 3. Immunogenetics 4. Fundamentals of veterinary pathogenetics. 5. Genetic abnormalities of the brain, skull, eyes, outer and inner ear. Genetic anomalies of the digestive tract. 6. Genetic abnormalities of nervous system, spinal cord and spine, limbs and joints. 7. Genetic anomalies of muscles and tendons, skin and its derivatives, hernia. Genetic abnormalities of the urinary system, blood and blood vessels, metabolism. **Practical classes** 1. Cytological basis of heredity (mitosis, meiosis, gametogenesis). Structural modeling of genetic and molecular processes in the body. 2. Graphical modeling of nucleic acid structure and synthesis. Graphic modeling of protein synthesis in a cell. 3. Inheritance of features in monohybrid crossing. Study of the nature of the inheritance of traits in complete and incomplete gene clustering. 4. The dominance of sex-dependent features. Pleiotropic effect of genes. Lethal effect of genes. 5. The phenomenon of codomination in the inheritance of blood groups, proteins and enzymes. 6. The phenomenon of dominance of signs. Analyzing the crossing. Reciprocal crossing. 7. Determination of the origin of the offspring on the basis of immunogenic test. 8. Inheritance of features in the hybrid hybrid crossing. Types of interaction of non-gene genes. 9. Complementarity. Neoplasm. Epistasis. Polymerism. Modifier genes. 10. Inheritance of gender-related traits. Coupled trait inheritance. 11. Study of the nature of inheritance of anomalies. 12. Mutational variability. The concept of mutations and

	mutagenesis, their place in the general scheme of modern classification of variability. 13. Genomic mutations - polyploidy, heteroploidy (trisomy and monosomy), autosomal and genosomal autopolyploidy, alloploidy. 14. Structural mutations of chromosomes (aberrations) - defects, deletions, duplications, inversions, translocations (reciprocal, tandem, Robertsonian), fragmentation. 15. Gene mutations, their mechanism of origin and varieties: amorphous, hypomorphic, neomorphic. Mutations of mitochondrial DNA, plastids and plasmids.
Teaching language	Ukrainian

Subject	**Animal hygiene**
Professor	Yuri A. Balatskyi, Candidates of Veterinary Sciences, Associate Professor of the Department of Animal Hygiene and Basics of Sanitation
Course and semester	2B courses, 3 semesters
Accepted faculties	Faculty of Veterinary Medicine
A list of competencies and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition by students of such knowledge and skills. **Knowledge:** Have specialized knowledge of various systems and methods of keeping farm animals and the parameters of the microclimate of the technological premises. **Skills:** Determine the temperature of the air and enclosure structures, humidity and air velocity, atmospheric pressure, air content of mechanical impurities and microorganisms, natural and artificial illumination of the premises, presence and amount of harmful gases in the air. Calculate hourly air exchange and evaluate the efficiency of ventilation by saturation of air with harmful gases; to determine the thermal balance of the premises for animals of different species at different times of the year. To control the course of the technological process under different systems and methods of keeping cattle, pigs and poultry of different age and production groups; to provide parameters of optimum microclimate of premises.
The discipline description	
Prerequisites necessary for the study of the discipline	None
Maximum number of students who can study simultaneously	10-13 applicants
Classroom topics	**Lecture topics:** 1. Introduction to the discipline, the purpose of studying the discipline. Observance of academic integrity by scientific-pedagogical staff and applicants for higher education at BNAU. 2. Physical properties of the air environment.

	3. Gas composition of the air environment. 4. Dust and microbial contamination of the air environment. 5. Hygiene of cattle. 6. Sheep hygiene. 7. Hygiene of pigs. **Practical topics:** 1. Hygienic control of air temperature in livestock premises, measurement rules, devices. 2. Hygienic control of hygrometric indices of air in livestock premises, measurement rules, devices. 3. Hygienic control of light in livestock premises, measurement rules, instruments. 4. Hygienic control of speed of movement and cooling properties of air in livestock premises, measurement rules, devices. 5. Zoohygienic control of dust and bacterial air pollution in livestock premises, measurement rules, instruments. 6. Methods for determining the content of carbon dioxide in the air of livestock premises, measurement rules, devices. 7. Methods for determining the content of ammonia in the air of livestock premises, measurement rules, devices. 8. Methods for determining the content of hydrogen sulfide in the air of livestock premises, measurement rules, devices. 9. Methods for calculating the hourly ventilation volume of livestock premises for carbon dioxide, moisture and excess heat). 10. Method of calculation of thermal balance of livestock premises. 11. Method of calculation of heat deficiency in livestock premises. 12. Sanitary-hygienic and ecological certification of dairy-commodity farm of NDC BNAU 13. Sanitary-hygienic and ecological certification of the pig farm of NDC BNAU. 14. Sanitary and hygienic and ecological certification of the poultry house of the BNAU.
The teaching language	The Ukrainian and English languages

Subject	**Animal hygiene**
Professor	Yuri A. Balatskyi, Candidates of Veterinary Sciences, Associate Professor of the Department of Animal Hygiene and Basics of Sanitation
Course and semester	2B courses, 3 semesters
Accepted faculties	Faculty of Veterinary Medicine
A list of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition by students of such knowledge and skills. ***Knowledge:*** Have knowledge of production and technological processes in animal keeping, operating animals of different classes and species in accordance with European standards, ensuring humane treatment of animals through the use of innovative methods and approaches in solving problematic situations in optimizing the conditions of keeping animals and bringing them into compliance with Council Direc-

	tives EU on the welfare of farm animals. ***Skills:*** Use terminology of hygienic and well-being parameters in veterinary medicine; to make decisions about the choice of effective methods of treatment and prevention of animal diseases, taking into account providing them with comfortable conditions of keeping, care and operation; to develop quarantine and wellness measures for the prevention and treatment of diseases of different etiologies while ensuring comfortable, well-being conditions in the production premises; to formulate conclusions on the effectiveness of the selected methods and means of keeping, feeding and treating animals, the prevention of infectious and non-communicable diseases, as well as the production and technological processes at the holdings, the operation of animals of different classes and species, taking into account European standards for the humane treatment of animals; use appropriate innovative methods and approaches to solve problematic situations in order to optimize the conditions of keeping animals and to bring them into line with the EU Council Directive on the welfare of farm animals; Know the rules and requirements for biosafety, bioethics and animal welfare; have specialized software tools to ensure optimal, comfortable conditions in livestock facilities.
The discipline description	
Prerequisites necessary for the study of the discipline	None
Maximum number of students who can study simultaneously	10-13 applicants
Classroom topics	**Lecture topics:** 1. Introduction to the discipline, the purpose of studying the discipline. Observance of academic integrity by scientific-pedagogical staff and applicants for higher education at BNAU. The importance of protecting animals in EU countries. EU Council Directives on the welfare of farm animals. 2. Welfare assessment of feed quality and animal feeding. 3. Well-being assessment of water quality and watering of animals. 4. Animal ethology, stress, adaptation and acclimatization. 5. Well-being evaluation of milk production technologies, systems for keeping cows and calves. 6. Welfare requirements for keeping pigs. 7. Welfare assessment of production technology for poultry products. **Practical topics:**

	1. Clinico-physiological and ethological methods for determining stress. 2. Methods of estimation of stress sensitivity and stress resistance of farm animals. 3. Methods for studying animal welfare from the perspective of the five freedoms. 4. Sanitary assessment of roughage. 5. Sanitary and hygienic evaluation of grain fodder. 6. Hygienic evaluation of juicy feed. 7. Determination of chemical properties of water: ammonia and ammonium salts; nitrates and nitrites; chlorides; sulfates and iron in water. Determination of water hardness. Determination of heavy metals content (cadmium, lead and copper) in natural and treated waters. 8. Biological analysis of water: determination of water oxidation; dissolved oxygen in water; bacteriological and helminthological studies of water. 9. Study of behavioral responses of cattle. 10. Study of behavioral responses of pigs. 11. Study of behavioral responses of farm poultry. 12. Studying the behavioral responses of horses. 13. Study of behavioral responses of sheep. 14. Study of behavioral responses of rabbits.
The teaching language	The Ukrainian

Subjects	**Medicinal and poisonous plants**
Teacher	Koziy Natalia Volodymyrivna, Avramenko Natalya Volodymyrivna, Candidates of Veterinary Sciences, Associate Professors, Department of Parasitology and Pharmacology
Course and semester in which you plan to study discipline	2 B course, III semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition by students of such knowledge and skills. Knowledge: - properties of basic biologically active substances of plants - theoretical basics concerning the collection, procurement, storage of medicinal plant raw materials and the concept of medicinal plant dosage forms; - common plants of medicinal and toxicological importance - classification of plants by the content of biologically-active substances belonging to different groups by the predominant manifestation of pharmacological action; - the mechanism of action of biologically active substances of plants on individual systems and organs of the animal as a whole, as well as navigate the issues of indication and contraindication to the use of herbal medicine. Skill: - determine specific, most used in the medical practice of plants in the

	dried and fresh state based on their botanical characteristics; - identify the terrestrial and underground parts of plants that may be medicinal or dangerous to the health of herbivorous animals; - to recognize poisonous or harmful plants in grasslands for harvesting green mass, hay, on meadows, pastures.
Description of the discipline	
Prerequisites for the study of the discipline	Basic knowledge of botany, biology, physiology, chemistry, Latin. Collections of herbarium plants by subjects of discipline. Collection of Plants "Pharmacology Laboratory of the Laboratory of Pharmacology
Maximum number of students who can study	**10–13 applicants at a time**
Classroom topics	Topic of lectures 1. Introduction. The subject and tasks of the discipline. Basic terms. History of herbal medicine. 2. Chemical composition of vegetable raw materials 3. Biologically active substances of plant origin 4. Pharmacotherapeutic justification for the use of herbal remedies for disorders of the function of the nervous and cardiovascular systems 5. Pharmacotherapeutic justification for the use of herbal remedies for disorders of the digestive system 6. Pharmacotherapeutic justification for the use of herbal remedies for disorders of the genitourinary system 7. Pharmacotherapeutic justification for the use of herbal remedies for respiratory disorders 8. Pharmacotherapeutic justification for the use of herbal remedies for surgical pathology and parasitology 9. Poisonous and harmful plants of the flora of Ukraine
	1. Vegetative organs of plants. Classification and characteristics 2. Determination of botanical characteristics of herbarium plants. 3. Drawing up a description of an individual plant. Testing "Question: Botanical Characterization of Plants" 4. Rational use of plants. Resources of medicinal plants of Ukraine and their protection. 5. Medicinal plant raw materials - characteristics, harvesting, storage, use. Dosage forms containing substances of plant origin. 6. Biologically active substances, characteristics, pharmacological effects. 7. Alkaloids. Classification, biological and pharmacotoxicological properties of alkaloid-containing plants 8. Glycosides. Classification, biological and pharmacotoxicological properties of glycosidic plants. 9. Phenolic compounds of plant origin Testing "Question: biologically active substances of plants" 10. Phytotherapy as a direction of pharmacotherapy 11. Plants used to influence the function of the nervous system 12. Plants used to influence the function of the cardiovascular system 13. Plants used to influence the function of the digestive system 14. Plants used to influence the function of the genitourinary system 15. Plants used to influence liver function 16. Plants used to influence respiratory function

	17. Plants used in surgical pathology 18. Plants used for parasitic pathology 19. Common plants that have a toxic effect on the body. Factors that contribute to the manifestation of the toxic effects of plants 20. Plants as a factor in the negative impact on the quality of animal products 21. Testing "Therapeutic and toxicological properties of individual plants"
Language of instruction	Ukrainian

Subjects	**Biotechnology in veterinary medicine**
Teacher	Onyshchenko Liubov Stepanivna Senior Lecturer the Department of Ecology and Biotechnology; Yulia Melnichenko, Ph.D..
Course and semester in which you plan to study discipline	2B course, III semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of the courses is the acquisition of such knowledge and skills by students. Knowledge: - current state of biotechnology - enzymology, creation of recombinant DNA - the way forward from the use of the economy for the broad environmental well-being of longevity - Methodology of the Commission for the Ecological Production of the Environment - basic concepts and terminology of this discipline. Skill: - Methods of real-life bioconversions, biomass in biogas; - to develop parameters of anaerobic digestion of purulent biomass and algae biomass for biogas production as an alternative carrier, using in deep economic and ecological crisis; - introduce sustainable technologies for broad environmental well-being; - Application of immobilized enzymes in veterinary medicine. -Spirulina production technology for testing in animal feeding.-Application of immobilized enzymes in veterinary medicine. -Spirulina cultivation technology for use in animal feeding.
Description of the discipline	
Prerequisites for the study of the discipline	Guidelines, presentations, practical skills and knowledge of the classification of enzymes and their use in industry.
Maximum number of students who can study	**10–30 applicants at a time**
Classroom topics	Lecture topics: Topic 1: Introduction. The value of biotechnology Topic 2: Fundamentals of Genetic Engineering and Molecular Biology Topic 3: Organic and inorganic polymeric media Topic 4: Physical and chemical immobilization methods

	Topic 5: Protein production biotechnology. Topic 6: Industrial biotechnologies based on the use of immobilized enzymes in the food industry Topic 7: Biotechnology of biofuel production by anaerobic digestion Topic 8: Biotechnology of vermiculture. Practical topics: Topic 1: Classification of organic and inorganic polymeric carriers for enzyme immobilization. Topic 2: Urease adsorption on zeolite and activity study. immobilized and free enzyme Topic 3. Immobilization of glucoamylase and activity study of immobilized and free enzymes. Topic 4: Study of the properties of glucoamylase.
	Topic 5: Preservation of enzymatic activity of different forms of enzyme under the action of denaturing factors - heavy metal ions. Topic 6: Study of the influence on the activity of free and immobilized glucoamylase enzyme denaturing factor - reaction (pH) of the medium. Topic 7: Immobilization of protosubtilin and comparison of the activity of free and immobilized enzyme. Topic 8: The study of the resistance of protosubtilin (preservation of enzymatic activity) to the action of denaturing factor - heavy metal ions. Topic 9: Study of the influence on the activity of free and immobilized protosubtillin enzyme denaturing factor (pH) of the environment. Topic 10: Effect of protosubtilin on the activity of free and immobilized glucoamylase enzyme. Topic 11: Study of the conservation of activity of free and immobilized glucoamylase enzyme by complex action on the enzyme of heavy metal ions and acidic environment. Topic 12: Study of the preservation of the activity of free and immobilized protosubtillin enzyme by complex action on the enzyme of heavy metal ions and acidic environment. Topic 13: Biomethanogenesis and its stages Topic 14: The negative impact of waste on the environment.
Language of instruction	Ukrainian

Academic discipline	**DNA-technologies in animal husbandry**
Tutor	Babenko Olena Ivanivna, PhD agricultural sciences, associate professor, department of genetics, breeding and selection of animals
Courses and semesters, when the discipline is planning to study	2B course, 3 semester
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competencies and learning-related outcomes that discipline provides	The result of learning the discipline is the acquisition by students of such knowledge and skills: *Knowledge* • breeding highly productive animals, their resistance to various

	diseases; • diagnostics, prevention and treatment of hereditary and congenital malformations and genetically caused diseases. *Skills* • know the terminology of national and international standards. • know the signs of inherited adaptation and resistance of animals to diseases. • know the underlying genetic abnormalities, and understand the mechanisms for their transmission to future generations.
Description of the discipline	
Preconditions necessary for the study of discipline	No
Maximum number of students who can study simultaneously	115 students
Lesson plans	**Lectures** 1. Subject and methods of discipline "DNA-technology in animal husbandry" 2. Molecular biology, its task in understanding the basic laws of life 3. Structure of nucleic acids 4. Genetic code and gene evolution. 5. DNA replication. Characteristics of replication processes. 6. Protein biosynthesis 7. General organization of genetic material. Genes and their structure. **Practical classes** 1. Structure and properties of DNA molecule 2. Transmission of genetic information. Mutations 3. Decryption of genetic information 4. Transcription 5.Translation 6.Technology of recombinant DNA 7. Genetic engineering enzymes 8. Construction of restriction maps 9. Determination of the nucleotide sequence of DNA 10. Methods of constructing recombinant DNA 11.Vectoral molecules 12. Introduction of DNA molecules into cells 13. Creating and screening genomic libraries
Teaching language	Ukrainian

Subjects	**Professional communication**
Teacher	Koziy Vasyl Ivanovych, Doctor of Veterinary Medicine. Sciences, Professor Yemelyanenko Alla Anatolivna, Candidate of Veterinary Sciences, Assistant Professor, Department of Normal and Pathological Animal Physiology
Course and semester in which you plan to study discipline	2B course, IV semester
Faculties that are in-	Faculty of Veterinary Medicine

vited to study discipline	
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of such knowledge and skills by students. Know morally ethical requirements for a veterinarian depending on the place of work; deontological - to the organization and carrying out of preventive, diagnostic and therapeutic measures, as well as to the prevention of zooanthroponosis and toxic infections among the population, classification of medical errors, ethics of scientific research, the basics of bioethics. Be able to take into consideration the responsibilities of the veterinary doctor, the specifics of his work to communicate with people; prevent medical errors, analyze and draw conclusions from their own calculations; self-improvement in order to improve professional performance, career advancement or professional development.
Description of the discipline	
Prerequisites for the study of the discipline	The elective course "Professional Ethics" is based on knowledge of the basics of general ethics and philosophy, and also requires familiarization with clinical veterinary disciplines (clinical diagnostics, pharmacology, parasitology, surgery, obstetrics, therapy). When studying a discipline, the student's experience in a veterinary clinic or livestock farm, zoo, etc. is desirable, where the student has been able to work with sick animals, communicate with their owners, participate in the development or implementation of treatment and preventive measures, etc.
Maximum number of students who can study	**10–13 students at a time**
Classroom topics	Lecture topics: Topic 1. Regulatory ethics and basic criteria for moral evaluation. Features of the profession of doctor of veterinary medicine Topic 2. Collegiality in the work of a veterinary doctor Topic 3. Ethics of veterinary management Theme 4. Relationship of the veterinarian doctor with the owner of the animal (client) Topic 5. Environmental issues and wildlife Topic 6. Animal welfare issues in various field of use Theme 7. National and international regulatory framework in the field of animal protection
	Practical topics: 1. Introduction. Ethical theories of moral evaluation. The golden rule. Soft and hard skills. Situational tasks. 2. Morality and the law. Regulation of the work of a veterinary doctor by moral, administrative and criminal law. Situational tasks. Protection of abstracts. 3. Veterinary medicine and business. The combination of professional and business interests. Situational tasks. Protection of abstracts. 4. The role of animals in human life. Humane and inhumane methods of using animals. 5. Well-being problems in pets and stray animals. Cosmetic surgery. Practical aspects of animal euthanasia. 6. Animal welfare as a basis for preventive veterinary medicine
Language of instruction	Ukrainian

Subjects	**Professional communication**
Teacher	Koziy Vasyl Ivanovych, Doctor of Veterinary Medicine. Sciences, Professor Yemelyanenko Alla Anatolivna, Candidate of Veterinary Sciences, Assistant Professor, Department of Normal and Pathological Animal Physiology
Course and semester in which you plan to study discipline	2b course IV semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	In the process of mastering the discipline the student should know: - peculiarities of academic style (academic titles, posts, citation rules, bibliography, etc.); - Features of academic texts (abstract, thesis, abstract, article); - professional, traditional and legislative aspects of the profession of veterinary doctor in different countries; - Features of finding career and career paths (realization of acquired knowledge and experience) in the professional environment - resumes, biographies, letters of intent, letters of recommendation, business cards, etc .; - the main principles of search, translation and systematization of professional medical veterinary information; be able to: - to use the Internet to establish professional contacts, search and summarize the necessary information, participate in international professional associations; - maintain a high level of professionalism and professional development in the professional field; - to constantly monitor a specific identified problem in the information space; - Use appropriate academic style and tact when communicating with colleagues, non-professionals and clients - summarize the information received in the form of abstracts, scientific review and popular articles; - Promote your own professional knowledge and experience
Description of the discipline	
Prerequisites for the study of the discipline	The elective course "Professional Communications" is based on the knowledge of the basics of general ethics and philosophy, and also requires familiarization with modern means of communication - the Internet, social networks, specialized scientific veterinary medical sites, etc. During the study of the students will have to independently find materials on the given topics, design them in the form of abstracts, abstracts, reports ets.
Maximum number of students who can study	**10–13 students at a time**
Classroom topics	Lecture topics: Theme 1: Basic historical aspects and current state of development of communication technologies and their role in the fulfillment of professional duties by veterinary specialists Topic 2. Bibliography and citation rules for veterinary medical texts. Features of academic texts (abstract, thesis, abstract, scientif-

	ic article) Topic 3. Preparation of a professional presentation, presentation of a material, preparation for public speaking in a professional environment Topic 4. Summary, biography, letter of intent, letters of recommendation as important components of professional communication Topic 5. International professional veterinary organizations, associations and unions Topic 6. Social networks, chats and online communication tools in the professional activity (facebook, youtube, twitter, linkedith). Scientific Search Engines (WoS, Scopus, PubMed, ScienceDirect)
	Practical topics: 1. Introduction. The subject, content and methods of studying the discipline, its structural and logical scheme, the value in the formation of a veterinary medicine doctor. Soft and hard skills. Situational tasks. 2. Importance of a foreign language in ensuring efficiency Among other priority areas for the development of veterinary medicine is the study of foreign languages and familiarization with the possibilities of their effective use in educational and professional activities. Knowledge of foreign languages is now an indispensable component of ensuring that veterinary professionals perform their duties properly. Situational tasks. Protection of abstracts. 3. Veterinary medicine and business. The combination of professional and business interests. Situational tasks. Protection of abstracts. 4. OIE is a reputable international organization that plays an important role in ensuring veterinary well-being. The OIE's historic mission is to improve animal health around the world. Cooperation of the OIE with other world organizations. According to the WTO mandate, the OIE is responsible for developing and promoting animal health standards for the safety of international trade in animals and livestock products. 5. Use of information and communication technologies in professional activity. Foreign language in professional activity. 6. Communication with specialists, industry workers and the population under different conditions and circumstances.
Language of instruction	Ukrainian

Subjects	**Fundamentals of biosafety and bioethics**
Teacher	Shulko Olha Candidat of Egricultural Sciences, Associate Professor of the Department of Ecology and biotechnology
Course and semester in which you plan to study discipline	2B course, II semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning	The result of the discipline is the acquisition of such knowledge and skills by the students.

outcomes provided by the discipline	Knowledge: – major sources of biological hazards; – conceptual approaches to ensuring biosafety and bioethics in the field of veterinary medicine; – environmental legal framework. Skill: – identify sources of biological hazard; – to use conceptual approaches in professional activity to ensure biosecurity and bioethics; – to apply the environmental legal framework in professional activity.
Description of the discipline	
Prerequisites for the study of the discipline	Guidelines, presentations, practical skills and knowledge.
Maximum number of students who can study	20–30 applicants at a time
Classroom topics	Lecture topics: Topic1: Fundamentals of biosafety and bioethics. Topic2: Structure of the natural environment. Biosphere, composition, functions, restoration. Topic3: Ecological bases of animal biogeocenotic pathology. Topic4: Animal autecology and pathology. Animal organism and environmental factors. Topic5: Obtaining livestock products that meet safety quality requirements. Topic6: Impact of waste on the environment Topic7: Human health as an indicator of environmental quality Topic8: Scientific basics of rational use and environmental management. Topic 1. Basic environmental terms, concepts and laws Topic 2. Ecological research methods Work 1. Study the general rules of taking, packing, shipment of the material under study and the general scheme and procedure for conducting it ecological and toxicological studies Topic 3. Impact of environmental factors on animal health Work 2. To study the main negative effects of environmental impacts factors for a living organism in the environment-health system animals ”in the conditions of the BNAU vivarium Topic 4. The main ways to adapt organisms to the unfavorable environmental conditions Topic 5. Microorganisms in the environment Topic 6. Ecological importance of water Work 3. Determination of smell and taste of water by organoleptic methods Work 4. Determination of free residual chlorine in water by titration with methyl orange Topic 7. Determination of ecological status of air Work 5. Determination of relative air dustiness Theme 8. Production of ecologically safe crop production and animal husbandry Topic 9. Environmental problems of waste storage and disposal Theme 10. Biological threats of anthropogenic origin

	Topic 11. Legal principles of biosafety and bioethics
Language of instruction	Ukrainian

Subjects	**Fundamentals of biosafety and veterinary ecology**
Teacher	Shulko Olha Candidat of Egricultural Sciences, Associate Professor of the Department of Ecology and biotechnology
Course and semester in which you plan to study discipline	2B course, II semester
Faculties that are invited to study discipline	Faculty of Veterinary Medicine
List of competences and relevant learning outcomes provided by the discipline	The result of the discipline is the acquisition of such knowledge and skills by the students. Knowledge: - major sources of biological hazards; - conceptual approaches to ensuring biosafety in the field of veterinary medicine; - environmental legal framework. Skill: - identify sources of biological hazard; - use conceptual approaches to biosecurity in professional activity; - to apply the environmental legal framework in professional activity.
Description of the discipline	
Prerequisites for the study of the discipline	Guidelines, presentations, practical skills and knowledge.
Maximum number of students who can study	**20–30 applicants at a time**
Classroom topics	Lecture topics: Topic 1: Fundamentals of biosafety and veterinary ecology. Topic 2: Structure of the natural environment. Biosphere, composition, functions, restoration. Topic 3: Ecological bases of animal biogeocenotic pathology. Topic 4: Animal autecology and pathology. Animal organism and environmental factors. Topic 5: Obtaining livestock products that meet safety quality requirements. Topic 6: Impact of waste on the environment. Topic 7: Human health as an indicator of environmental quality. Topic 8: Scientific basics of rational use and environmental management. Topic 1. Basic environmental terms, concepts and laws. Topic 2. Ecological research methods. Work 1. Study the general rules of taking, packing, shipment of the material under study and the general scheme and procedure for conducting it ecological and toxicological studies. Topic 3. Impact of environmental factors on animal health. Work 2. To study the main negative effects of environmental

	impacts factors for a living organism in the environment-health system. animals ”in the conditions of the BNAU vivarium. Topic 4. The main ways to adapt organisms to the unfavorable environmental conditions. Topic 5. Microorganisms in the environment. Topic 6. Ecological importance of water. Work 3. Determination of smell and taste of water by organoleptic methods. Work 4. Determination of free residual chlorine in water by. titration with methyl orange. Topic 7. Determination of ecological status of air. Work 5. Determination of relative air dustiness. Theme 8. Production of ecologically safe crop production and animal husbandry Topic 9. Environmental problems of waste storage and disposal. Theme 10. Biological threats of anthropogenic origin. Topic 11. Legal principles of biosafety.
Language of instruction	Ukrainian

Academic discipline	**Animal husbandry**
Tutor	Babenko Olena Ivanivna, PhD agricultural sciences, associate professor, department of genetics, breeding and selection of animals
Courses and semesters, when the discipline is planning to study	2B course, 3 semester
Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competencies and learning-related outcomes that discipline provides	The result of learning the discipline is the acquisition by students of such knowledge and skills: *Knowledge* • biological features of farm animals • evaluate the exterior and types of animal constitution; • breed characteristics of animals of different directions of productivity; • organization of cattle breeding and rearing; • methods of breeding work on modern farms; • ensure that highly productive. Effective individuals are stocked with herds. *Skills* •Organize zoo technical and breeding records; • monitor the performance of animals and poultry; • calculate the efficiency of breeding work carried out in the herd; • assess the reproductive capacity of livestock; • determine the age and live weight of the animals during the first pairing; • determine the structure of the herd depending on the direction of the animal's productivity
Description of the discipline	

Preconditions necessary for the study of discipline	No
Maximum number of students who can study simultaneously	115 students
Lesson plans	**Lectures** 1.Subject and methods of discipline "Livestock" History of animal husbandry. animals. Time, place, sequence of domestication and domestication of different species of animals. 2. Biological and economic features of cattle. Features of constitution and exterior of cattle of various directions of productivity. 3. Biological and economic features of pigs. 4. Biological and economic features of DRC. Economic importance, biological features, constitution and exterior of sheep and goats. 5. Biological and economic features of farmland. birds. Breeds and crosses of farm poultry. 6. Technology of production of milk, beef and pork. 7. Technology of goat and sheep production. 8. Breeding and use of horses. Technology of production of poultry products. 9. Beekeeping production technology. 10. Technology of production of rabbit breeding and animal husbandry. **Practical classes** 1. Methods for assessing the growth and development of animals. 2. Evaluation of animals by exterior and constitution. Defects and defects of the exterior of the body. 3. Exterior assessment methods; taking measurements in cattle. 4. Methods of control and evaluation of different types of productivity. 5. Dairy performance, methods of accounting and evaluation. 6. Meat performance of animals and methods of its evaluation. 7. Evaluation of the egg productivity of the bird. 8. Assessment of sheep wool productivity. 9. Assessment of the reproductive qualities of sows. 10. Assessment of reproductive capacity of dairy cattle. 11. Methods of identification of animals. 12. Compilation of pedigrees of breeding animals. 13. Developing a plan for tribal selection. 14. Methods of farming animals. 15. Crossing and hybridization of animals
Teaching language	Ukrainian

Academic discipline	**Animal breeding**
Tutor	Babenko Olena Ivanivna, PhD agricultural sciences, associate professor, department of genetics, breeding and selection of animals
Courses and semesters, when the discipline is planning to study	2B course, 3 semester

Faculties whose students are invited to study discipline	Faculty of Veterinary Medicine
List of competencies and learning-related outcomes that discipline provides	The result of learning the discipline is the acquisition by students of such knowledge and skills: *Knowledge* • to evaluate the animals exterior and types of constitution; • to organize targeted growth of young animals; • to determine the breeding value of animals using different methods; • to use inbreeding and outbreeding; • to conduct an effective assessment of animals by origin (pedigrees); • to use methods of purebred selection, various types of cross-breeding and hybridization; • to have the skills to plan and organize of breeding; • to create of highly productive herd and economically profitable animals. *Skills* • to organize zootechnical and pedigree records; • to monitor the productivity of animals and poultry; • to calculate the efficiency of breeding in the herd; • to determine the genetic identification of animals, the coefficient of inbreeding and forms of heterosis; • to create individual and group pedigrees; • to conduct effective selection, to make breeding plans; • find the best genotypes among the phenotypes in herds, lines / families or breeds; to evaluate young animals, males and females of different species of farm animals and poultry.
Description of the discipline	
Preconditions necessary for the study of discipline	No
Maximum number of students who can study simultaneously	115 students
Lesson plans	**Lectures** 1. The definition and meaning of animal breeding and selection, their connection with other disciplines. The main stages of formation and development of the theory and practice of farm animal breeding. 2. Classification of farm animals. Time, place, sequence of taming and domestication of different species of animals. 3. Breed definition and meaning. Breed as a result of evolutionary process and human activities. 4. Ontogeny. 5. Constitution, the definition and meaning. 6. Exterior, the definition and meaning. 7. Interior, the definition and meaning. 8. Productivity of agricultural animals. 9. Assessment of agricultural animals' productivity. 10. Selection of agricultural animals. Theoretical and general se-

	lection. Definition and meaning of natural selection. Forms of artificial selection. The organization of animals' selection. 11. Animals mating. Theoretical bases, basic principles and tasks of mating. Forms of mating. 12. Methods of animal breeding. Classification of breeding methods of farm animals. Purebred selection: tasks, main methods; the ways to achieve progress in purebred selection. **Practical classes** 1. Methods of estimation of animal growth and development. 2. Estimation of animal exterior and constitution. Defects of animal exterior. 3. Methods of estimation of exterior parameters; farm animal measurement. 4. Dairy production, registration techniques and evaluation. 5. Meat production, registration techniques and evaluation. 6. Assessment of poultry egg production. 7. Assessment of wool production. 8. Assessment of the reproductive performance of sows. 9.Assessment of reproductive performance of dairy cattle. 10.Estimation of the breeding value. Calculating of the selection effect in the herd. 11. Creation of animal pedigree. 12. Methods of animal identification. 13. Mating schemes. 14. Crossbreeding. Practical examples of crossbreeding systems. 15. Interspecies hybridization of animals.
Teaching language	Ukrainian

Discipline	**Fish diseases**
Lecturer	Dzhmil Volodymyr Ivanovych Candidate of Veterinary sciences, Associate professor Department of veterinary and sanitary examination, livestock products hygiene and pathoanatomy named after I.S. Zahayevskyi
Course and semester the study of discipline is planned in that	3B course, 5 semester
Faculties it is suggested to study discipline the students of that	Faculty of Veterinary Medicine
List of skills and corresponding study results the discipline provides fish	Studying the discipline results in gaining the following knowledge and abilities: **Knowledge of**: - causes of disesases and water organisms poisoning and general principles of their elimination consequences; - methods of realization of diagnostic researches on fish and other water organisms; - general rules of epizootic and sanitary state control in fish farms reservoirs; - bases of veterinary and sanitary prophylactic and health rules in fish farms;

	- bases of veterinary and sanitary rules in fish farms planning construction; - general rules and procedure for veterinary supervision at fish transportation within the ountry, at fish breeding and acclimatization after export and import and its use for feed and food; - bases of control of sanitary quality of the raised and fished aquatic lives; - the requirements and rules for registration and delivery of documents on fish and other water living organisms distribution. **Ability:** - to plan prophylactic and health measures in fish industries; - to conduct epizootic examination of fish breeding farm and clinical research; - to conduct clinical research of fish; - to ccarry out the pathoanatomical autopsy of fish; - make a previous diagnosis on fish illness; - to take blood and other pathological material for research; - to define invasion extensiveness and intensity at parasitogenic diseases of fishes; - to apply medicines at fish individual and group treatment; – провести диференційну діагностику отруєнь риб від інших хвороб; – проводити органолептичне дослідження риби з метою визначення її якості. - to carry out differential diagnostics of fish poisoning from other illnesses; - to conduct organoleptic examination of fish to determine its quality.
Description of the discipline	
Prerequisites for mastering the discipline	Anatomy, zoophysiology, veterinary microbiology, veterinary virology, animals feeding.
Students number (max) at class	10-13 students
Class themes	**Lecture themes:** 1: Introduction, aim and task of the fish diseases course. History of ichtio pathology, a sience of fish diseases. 2. Description of fish breeding farms. 3. Description of pond fish-farming objects. 4. Fish productivity of fish breeding reservoirs, intensification of fish-farming and factors that influence on the origin of fish diseases. 5. Classification of fish diseases. 6. Activities on fish diseases prophylaxis and treatment. Features of fish-farming on radionuclides polluted territories. 7. Veterinary-sanitary examination of fish and fish products under their pollution with zoonosiss causative agents **Themes of practical classes:** 1. A veterinary registration and accounting in a fish-farming. 2. Fish description and its anatomic structure. 3. General methods of fish diseases diagnostics. 4. Pathological anatomical autopsy of fish as a method of disease diagnostics.

	5. Methods of diagnostics, treatment and prophylaxis of fish infectious diseases. Vial diseases of fish (are a spring virosis of carp, viral hemorragic septycemy of trout. 6. Methods of diagnostics, treatment and prophylaxis of fish infectious diseases. Bacterial diseases (aeromonosis of carp, pseudomonosis of Chineeses carp, aeromonosis of salmon (furunculosis of salmon). 7. Methods of diagnostics, treatment and prophylaxis of fish infectious diseases. Mycotic diseases (branchiomicosis, saprolegniosis). 8. Methods of diagnostics, treatment and prophylaxis of fish parasitosis diseases. Protozoal infections (chilodenelosis, trichodinosis, ichthio phtiriosis, ichtiobodosis (costiosis). 9. Methods of diagnostics, treatment and prophylaxis of fish parasitosis diseases. Crustaceosis (argulocis, lerniosis, ergasilosis). 10. Methods of diagnostics, treatment and prophylaxis of fish parasitosis diseases. Helminthosis. Monohenoidosis (dactylogirosis, hirodactylosis). 11. Methods of diagnostics, treatment and prophylaxis of fish parasitosis diseases. Helminthosis. Trematodosis (diplostomosis, postodiplostomosis, sanguinikolosis). 14. Методи діагностики, лікування та профілактики інвазійних хвороби риб. Гельмінтози. Нематодози (філометроїдоз). 12. Methods of diagnostics, treatment and prophylaxis of fish parasitosis diseases. Helminthosis. Intestinal cestodosiss (botriocefallosis, caviosis). 13. Methods of diagnostics, treatment and prophylaxis of fish parasitosis diseases. Helminthosis. Visceral cestodosiss (ligulosis, digramosis). 14. Methods of diagnostics, treatment and prophylaxis of fish parasitosis diseases. Helminthosis. Nematodosis (phylometroidosis).
Teaching languages	Ukrainian, English.

Name of the discipline	**Zoology**
Lecturer	Oleksandr Khomiak, candidate of agricultural sciences, associate professor
Year of study, semester	3B, 5 semester
Faculties where the students are offered to study the discipline	Faculty of Veterinary Medicine
List of competencies and learning outcomes provided by the discipline	**Learning outcomes** *Knowledges* - patterns of structure, life, reproduction and development of wild animals, which is the basis for the study of production technologies in fisheries; - the main systematic groups of animals of the world, as well as the evolutionary relationships between them; - the animal system and principles of modern classification and the historical origin of the major subtypes and classes of animals.

	Skills: - apply zoological knowledge in the development of biological measures for the control of parasites and vectors of pathogens; - use zoological knowledge about wild hydrobionts in breeding work; - use knowledge in the protection of wildlife and the biosphere as a whole.
Discipline description	
Prerequisites needed for studing the discipline	No
Students' limit in a group	25
Topics of in-class activity	**Lecture topics:** 1. Unicellular and intestinal cavity 2. Worms. 3. Shellfish or molluscs. 4. Arthropods 5. Primary, fish class 6. Classes amphibians (amphibians), reptiles 7. Classes of birds, mammals **Topics of practical classes:** 1. The simplest. 2. Intestinal cavity. 3. Flat worms. 4. Round worms. 5. Ringworms. 6. Shellfish (Toothless). 7. Arthropods (river cancer, spider, ticks, insects). 8. Fish. 9. Amphibians. 10. Reptiles. 11. Birds. 12. Mammal.
Language of teaching	Ukrainian

Subjects	**Diseases of bees**
Teacher	Shulga Petro candidate of veterinary science, associate professor, department of epizootology and infectious diseases Yarchuk Bronislav Myronovych, candidate of veterinary sciences, professor of the department of epizootology and infectious diseases.
Course and semester in which you plan to study the discipline	3B course5 semester
Faculties whose students are	Faculty of veterinary medicine

invited to study discipline	
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of the following knowledge and skills by students: **Knowledge:** - have professional and specialized knowledge and practical skills in the etiology, pathogenesis and epizootiology of infectious animal diseases, in particular transboundary bases of epidemiology according to OIE requirements; keeping and operating animals; - describe the nature and dynamics of physicochemical and biological processes that occur in the body of animals in normal and pathological conditions under the influence of environmental factors, the action of infectious agents, surgical and obstetric-gynecological interventions; - have professional-profile knowledge and understanding of the basic provisions of international and European animal welfare legislation; possess clinical and laboratory research techniques to monitor animal health and control the treatment of diseased animals and the prevention of animal diseases of different etiologies; - to understand the essence of the processes of production, storage and processing of biological raw materials. **Skill:** - be able to carry out sampling, canning, packaging and forwarding of samples of animal, plant and biotechnological origin for research, to carry out veterinary records, to draw up accounting documentation; - be able to identify the sources of the causative agent of infections, invasions, to determine the factors and mechanism of their transmission; ensure the isolated maintenance of sick and suspected animals of infectious or invasive animal disease; to carry out forced vaccinations of animals in disadvantaged and threatened service areas; to take measures aimed at preventing the spread of the pathogen and infestation beyond the epizootic hearth and eliminating the hearth itself; not allow the care of animals with zoonotic diseases; - have a methodology for conducting, epizootic, parasitological, chemical-toxicological, radiological, sanitary-hygienic studies for the diagnosis of animal diseases of non-infectious, infectious and invasive etiology using instrumental and laboratory methods; analyze the results of the study of biological material; to interpret the results of research in the light of the achievements of science and practice; - have common clinical and laboratory research techniques to monitor the health of animals and to maintain the production and circulation of food derived from animals treated and prophylactically, in accordance with the Single Health concept; - be able to organize the rehabilitation of livestock premises by chemical, biological and physical methods and to control it; - be able to operate the basic concepts of biosafety, biosecurity, to have the basics of bioethics; to analyze current and newest ethical problems of biotechnology and

	pharmaceutical industries; analyze the causes of epizootic situations and infectious diseases that have emerged in recent years.
Description of the discipline	
Prerequisites necessary for the study of the discipline	None
Maximum number of students who can study simultaneously	12 students
Classroom topics	**Lecture topics:** Topic 1. Beekeeping is an agricultural sector. Topic 2. The biology of the honey bee. The origin of the bee family. Theme 3. Bee Care. Biological features of wintering bees. Topic 4. Classification of bee diseases. Infectious and non-communicable diseases of bees. Theme 5. Bacteriosis: European, American rot, paragnulus, septicemia, hafniasis. Topic 6. Bee viral diseases: sac-like brood, acute viral paralysis, chronic viral paralysis, filamentovirus. Mycoses of bees: aspergillosis of bees, ascospherosis of bees, melanosis. Theme 7. Invasive diseases of bees: protozooses (nosematosis), arachnosis (acarapidosis, varroosis). Invasive diseases of bees: entomoses (broose, senothianosis, physocephalosis). Helminthoses of bees.Veterinary measures on apiaries. Veterinary maintenance of apiaries. Veterinary and sanitary requirements for apiaries, wintering quarters, storage facilities and other facilities. Certification of apiaries. Carrying out disinfection, disinsection, deratization on apiaries. Veterinary and sanitary supervision during and procurement and storage of bee products. State control of honey and other bee products in the food market. **Practical topics:** Topic 1. Anatomy and biology of honey bee. Honey bee biology. Anatomical structure of different individuals of the bee family. The structure of the external organs of the body of the bee (organs of motion, vision, analyzers of taste, smell, etc.). Theme 2. Bee products their use and value in medicine. Topic 3. Honey bee immune system. External and internal mechanisms of immune defense, their structure and significance. Features of age-old immunity of bees. Procedure for selection and forwarding of pathological material for laboratory study of bee diseases. Theme 4. Beehives, buildings and apiary. Feeding bees. Different types of beehives, basic requirements for them. Inventory, beekeeping buildings. Rules of feeding bees. Carbohydrate protein, vitamin, mineral bee feeding. Theme 5. Bee toxicosis. Diagnosis, prevention, treatment of chemical toxicosis. Topic 6. Phytotoxicosis. Theme 7. Diseases of bees arising from violations of conditions of confinement.

	Topic 8. Rules for the selection and transfer of pathological material. Topic 9. Anomalous phenomena in the bee family (raid, flight, bee walking, etc.). Theme 10. Bacteriosis: Rotten diseases of bee breeding: European, American rot, paragliding Theme11. Bacteriosis of working bees: salmonellosis, colibacteriosis, hafniiosis and others. Theme 12. Bee viral diseases: sac-like brood, acute viral paralysis, chronic viral paralysis, filamentovirus (diagnosis, prevention and control measures). Theme 13. Bee mycoses: bee aspergillosis, bee ascospherosis, melanosis (diagnosis, prevention and control measures). Theme 14. Lesser viral diseases of bees. Theme 15 Exotic diseases of bees. Topic 16. Protozooses (nosematosis, amoebiasis). Topic 17. Arachnosis (acarapidosis, varroosis), diagnosis, prevention and control measures). Theme 18. Diagnosis, prevention and control measures of bee pests (insects, birds and animals pests and enemies of bees). Theme 19. Bees pests and enemies (insects, birds and animals pests and bees enemies). Topic 20. Conducting disinfection, deratization and disinsection on apiaries. Topic 21. Veterinary and sanitary rules for apiary swaying. Occupational Health and Safety Requirements.Non-communicable diseases as factors contributing to the development of infectious diseases. Diseases of the uterus. Drone diseases. Veterinary Requirements for Importing Honey Bees, Bumble Bees, Beekeepers to Ukraine.Checking rules for apiaries. Special a-c measures on apiaries.Veterinary and sanitary requirements for apiaries, wintering grounds and co-storage facilities.Procedure for filling in apiary's veterinary-sanitary passport.Protection of apiaries against skidding by pathogens.
Language of instruction	Ukrainian

Subjects	**Diseases of fur animals**
Teacher	Dovgal Alexander Vladimirovich candidate of veterinary sciences, associate professor, department of epizootology and infectious diseases Yarchuk Bronislav Myronovych, candidate of veterinary sciences, professor of the department of epizootology and infectious diseases.
Course and semester in which you plan to study the discipline	3B course 5 semester
Faculties whose students are invited to study discipline	Faculty of veterinary medicine
List of competences and relevant learning outcomes provided by the discipline	The result of teaching the discipline is the acquisition of the following knowledge and skills by students: **Knowledge:**

	- have professional and specialized knowledge and practical skills in the etiology, pathogenesis and epizootiology of infectious animal diseases, in particular transboundary bases of epidemiology according to OIE requirements; keeping and operating animals; - describe the nature and dynamics of physicochemical and biological processes that occur in the body of animals in normal and pathological conditions under the influence of environmental factors, the action of infectious agents, surgical and obstetric-gynecological interventions; - have professional-profile knowledge and understanding of the basic provisions of international and European animal welfare legislation; possess clinical and laboratory research techniques to monitor animal health and control the treatment of diseased animals and the prevention of animal diseases of different etiologies; - to understand the essence of the processes of production, storage and processing of biological raw materials. **Skill:** - be able to carry out sampling, canning, packaging and forwarding of samples of animal, plant and biotechnological origin for research, to carry out veterinary records, to draw up accounting documentation; - be able to identify the sources of the causative agent of infections, invasions, to determine the factors and mechanism of their transmission; ensure the isolated maintenance of sick and suspected animals of infectious or invasive animal disease; to carry out forced vaccinations of animals in disadvantaged and threatened service areas; to take measures aimed at preventing the spread of the pathogen and infestation beyond the epizootic hearth and eliminating the hearth itself; not allow the care of animals with zoonotic diseases; - have a methodology for conducting, epizootic, parasitological, chemical-toxicological, radiological, sanitary-hygienic studies for the diagnosis of animal diseases of non-infectious, infectious and invasive etiology using instrumental and laboratory methods; analyze the results of the study of biological material; to interpret the results of research in the light of the achievements of science and practice; - have common clinical and laboratory research techniques to monitor the health of animals and to maintain the production and circulation of food derived from animals treated and prophylactically, in accordance with the Single Health concept; - be able to organize the rehabilitation of livestock premises by chemical, biological and physical methods and to control it; - be able to operate the basic concepts of biosafety, biosecurity, to have the basics of bioethics; to analyze current and newest ethical problems of biotechnology and pharmaceutical industries; analyze the causes of epizootic situations and infectious diseases that have emerged in recent years.
Description of the discipline	

Prerequisites necessary for the study of the discipline	None
Maximum number of students who can study simultaneously	12 students
Classroom topics	**Lecture topics:** Topic 1. Veterinary and sanitary requirements for fur farms. Topic 2. Biological features of fur animals Topic 3. Carnivorous Plague. Topic 4. Myxomatosis. Topic 5. Aujeszky's disease. Topic 6. Botulism. Topic 7. Salmonellosis **Practical topics:** Topic 1. Common problems of fur farming. The subject and objectives of the course. Fur farming as an industry. Topic 2. The main types of fur animals bred in animal husbandry. Neuroleptanalgesia, local anesthesia, euthanasia) after surgery. Topic 3. Biological features of fur animals of the canine family. Topic 4. Biological features of fur animals of the marten family Topic 5. Biological features of fur animals of the rodent family. Topic 6. The slaughter of fur animals. Methods of slaughtering fur animals. Primary processing of skins. Methods for removing skins in different types of fur animals. Topic 7. Carnivorous Plague. Topic 8. Infectious carnivorous hepatitis Topic 9. Enzootic encephalomyelitis Theme 10. Myxomatosis. Topic 11. Aleutian mink disease Topic 12. Epizootic catarrhal gastroenteritis mink. Topic 13. Viral haemorrhagic disease of rabbits Topic 14. Infectious rhinotracheitis. Topic 15. Aujeszky's disease. Topic 16. Botulism. Topic 17. Enterotoxemia Topic 18. Tuberculosis. Topic 19. Listeriosis. Topic 20. Diplocosis. Topic 21. Streptococcosis.
Language of instruction	Ukrainian