

ВИБІРКОВІ НАВЧАЛЬНІ ДИСЦИПЛІНИ

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	<p>Gained results of students due to discipline studying:</p> <p><i>Experience:</i></p> <ul style="list-style-type: none"> – 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. <p><i>Skills:</i></p> <ul style="list-style-type: none"> – Fluent reading; – Understanding 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	<i>None</i>
Class size	25 stuents
Topics of the practical classes	<ol style="list-style-type: none"> 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	Tsvit-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	<p>Gained results of students due to discipline studying:</p> <p><i>Experience:</i></p> <ul style="list-style-type: none"> – 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. <p><i>Skills:</i></p> <ul style="list-style-type: none"> – Fluent reading; – Understanding 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	<i>None</i>
Class size	25 students
Topics of the practical classes	<ol style="list-style-type: none"> 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 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 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.

	<p>Laboratory Work № 4. Determination of the Viscosity of Liquids by the Oswald Method.</p> <p>Laboratory work № 5. Determination of audibility by means of a sound generator by the method of stimulation thresholds.</p> <p>Laboratory work № 6. Determination of the coefficient of surface tension of liquids by the method of separation of air bubbles.</p> <p>Laboratory work № 7. Determination of specific heat of vaporization by calorimetric method.</p> <p>Laboratory work № 8. Determination of humidity.</p> <p>Laboratory work № 9. Measurement of AC power, power and resistance of an electric lamp.</p> <p>Laboratory work № 10. Determination of electrochemical equivalent of copper and magnitude of elementary charge.</p> <p>Laboratory work № 11. Determination of the self-induction coefficient.</p> <p>Laboratory work № 12. Determination of the transformation factor and the efficiency of the transformer.</p> <p>Laboratory work № 13. The device of ultra-high frequency therapy and work with it.</p> <p>Laboratory work № 14. Determination of refractive index and concentration of dry matter in solutions using a refractometer.</p> <p>Laboratory work № 15. Determination of light wavelength by means of diffraction grating.</p> <p>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.</p> <p>Laboratory work № 17. Determination of the concentration of eosin solution using a photometer.</p> <p>Laboratory work № 18. Investigation of the dependence of the photocurrent power on the illumination of the photocell.</p>
Language of instruction	Ukrainian

Academic subject	Veterinary radiobiology
Teacher	<p>Oleksandr Rozputnyi, doctor of Agricultural Sciences, professor, Head of the Department of Safety Life`s activity</p> <p>Ivan Pertsovyi, PhD, Associate Professor of the Department of Safety Life`s activity</p> <p>Viktor Herasymenko, PhD, Associate Professor of the Department of Safety Life`s activity</p>
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	<p>The result of teaching the discipline is the acquisition of such knowledge and skills by students:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - patterns of migration of radionuclides by trophic chains of ecosystems, their accumulation in feed, animal bodies, milk, meat and

	<p>other products of animal husbandry and crop production;</p> <ul style="list-style-type: none"> - 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. <p>Skills:</p> <ul style="list-style-type: none"> - 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	<p>Lecture topics:</p> <p>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.</p> <p>Practical training topics:</p> <p>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.</p>

	<p>Topic 5. Familiarization with the General characteristics, device and principle of operation of radiation monitoring devices.</p> <p>Topic 6. Determination of the dose rate of gamma radiation in the room and in the open area.</p> <p>Topic 7. Selection and preparation of samples for radiometric and spectrometric studies</p> <p>Topic 8. Determination of ¹³⁷Cs activity in food products at USK Gamma Plus.</p> <p>Topic 9. Determination of ¹³⁷Cs activity in food products by radiometers "RUB-01P6", "RUG-G".</p> <p>Topic 10. Familiarization with the method of physical concentration of samples (drying, evaporation, charring and greening).</p> <p>Topic 11. Introduction to the method of radiochemical isolation of ⁹⁰Sr from soil samples.</p> <p>Topic 12. Radiochemical isolation of ⁹⁰Sr from samples of food products and crop and livestock products.</p> <p>Topic 13. Determination of ⁹⁰Sr activity in food products and soils on USK Gamma Plus.</p> <p>Topic 14. Prediction of ¹³⁷Cs and ⁹⁰Sr activity in crop and livestock products obtained in radioactively contaminated areas.</p>
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	<p>The result of learning the discipline is the acquisition by students of such knowledge and skills:</p> <p><i>Knowledge</i></p> <ul style="list-style-type: none"> • 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. <p><i>Skills</i></p> <ul style="list-style-type: none"> • 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

	<p>resistance to diseases of animals and treatment of animal diseases;</p> <ul style="list-style-type: none"> • 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 production of products from animals.
Description of the discipline	
<p>Preconditions necessary for the study of discipline</p> <p>Maximum number of students who can study simultaneously</p> <p>Lesson plans</p>	<p>No</p> <p>115 students</p> <p>Lectures</p> <ol style="list-style-type: none"> 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 <p>Practical classes</p> <ol style="list-style-type: none"> 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	The result of learning the discipline is the acquisition by students of such knowledge and skills:

<p>outcomes that discipline provides</p>	<p><i>Knowledge</i></p> <ul style="list-style-type: none"> • 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; <p><i>Skills</i></p> <ul style="list-style-type: none"> • 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;
<p>Description of the discipline</p>	
<p>Preconditions necessary for the study of discipline Maximum number of students who can study simultaneously Lesson plans</p>	<p>No</p> <p>15 students</p> <p>Lectures</p> <p>Patterns of inheritance of traits in sexual reproduction. Inheritance of gender-related traits</p> <ol style="list-style-type: none"> 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. <p>Practical classes</p> <ol style="list-style-type: none"> 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.

Teaching language	<p>6. The phenomenon of dominance of signs. Analyzing the crossing. Reciprocal crossing.</p> <p>7. Determination of the origin of the offspring on the basis of immunogenic test.</p> <p>8. Inheritance of features in the hybrid hybrid crossing.</p> <p>Types of interaction of non-gene genes.</p> <p>9. Complementarity. Neoplasm. Epistasis. Polymerism. Modifier genes.</p> <p>10. Inheritance of gender-related traits. Coupled trait inheritance.</p> <p>11. Study of the nature of inheritance of anomalies.</p> <p>12. Mutational variability. The concept of mutations and mutagenesis, their place in the general scheme of modern classification of variability.</p> <p>13. Genomic mutations - polyploidy, heteroploidy (trisomy and monosomy), autosomal and genosomal autopolyploidy, allopolyploidy.</p> <p>14. Structural mutations of chromosomes (aberrations) - defects, deletions, duplications, inversions, translocations (reciprocal, tandem, Robertsonian), fragmentation.</p> <p>15. Gene mutations, their mechanism of origin and varieties: amorphous, hypomorphic, neomorphic. Mutations of mitochondrial DNA, plastids and plasmids.</p> <p>Ukrainian</p>
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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	<p>The result of teaching the discipline is the acquisition by students of such knowledge and skills.</p> <p>Knowledge: Have specialized knowledge of various systems and methods of keeping farm animals and the parameters of the microclimate of the technological premises.</p> <p>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.</p>

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	<p>Lecture topics:</p> <ol style="list-style-type: none"> 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. <p>Practical topics:</p> <ol style="list-style-type: none"> 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	<p>The result of teaching the discipline is the acquisition by students of such knowledge and skills.</p> <p>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 Directives EU on the welfare of farm animals.</p> <p>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.</p>
The discipline description	
Prerequisites necessary for the study of the discipline	None
Maximum number of students who	10-13 applicants

can study simultaneously	
Classroom topics	<p>Lecture topics:</p> <ol style="list-style-type: none"> 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. <p>Practical topics:</p> <ol style="list-style-type: none"> 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	<p>The result of teaching the discipline is the acquisition by students of such knowledge and skills.</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - 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. <p>Skill:</p> <ul style="list-style-type: none"> - 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	<p>Topic of lectures</p> <ol style="list-style-type: none"> 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

	<p>8. Pharmacotherapeutic justification for the use of herbal remedies for surgical pathology and parasitology</p> <p>9. Poisonous and harmful plants of the flora of Ukraine</p>
	<p>1. Vegetative organs of plants. Classification and characteristics</p> <p>2. Determination of botanical characteristics of herbarium plants.</p> <p>3. Drawing up a description of an individual plant. Testing "Question: Botanical Characterization of Plants"</p> <p>4. Rational use of plants. Resources of medicinal plants of Ukraine and their protection.</p> <p>5. Medicinal plant raw materials - characteristics, harvesting, storage, use. Dosage forms containing substances of plant origin.</p> <p>6. Biologically active substances, characteristics, pharmacological effects.</p> <p>7. Alkaloids. Classification, biological and pharmacotoxicological properties of alkaloid-containing plants</p> <p>8. Glycosides. Classification, biological and pharmacotoxicological properties of glycosidic plants.</p> <p>9. Phenolic compounds of plant origin Testing "Question: biologically active substances of plants"</p> <p>10. Phytotherapy as a direction of pharmacotherapy</p> <p>11. Plants used to influence the function of the nervous system</p> <p>12. Plants used to influence the function of the cardiovascular system</p> <p>13. Plants used to influence the function of the digestive system</p> <p>14. Plants used to influence the function of the genitourinary system</p> <p>15. Plants used to influence liver function</p> <p>16. Plants used to influence respiratory function</p> <p>17. Plants used in surgical pathology</p> <p>18. Plants used for parasitic pathology</p> <p>19. Common plants that have a toxic effect on the body. Factors that contribute to the manifestation of the toxic effects of plants</p> <p>20. Plants as a factor in the negative impact on the quality of animal products</p> <p>21. Testing "Therapeutic and toxicological properties of individual plants"</p>
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	<p>The result of the courses is the acquisition of such knowledge and skills by students.</p> <p>Knowledge:</p> <p>- current state of biotechnology</p>

	<ul style="list-style-type: none"> - 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. <p>Skill:</p> <ul style="list-style-type: none"> - 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	<p>Lecture topics:</p> <p>Topic 1: Introduction. The value of biotechnology</p> <p>Topic 2: Fundamentals of Genetic Engineering and Molecular Biology</p> <p>Topic 3: Organic and inorganic polymeric media</p> <p>Topic 4: Physical and chemical immobilization methods</p> <p>Topic 5: Protein production biotechnology.</p> <p>Topic 6: Industrial biotechnologies based on the use of immobilized enzymes in the food industry</p> <p>Topic 7: Biotechnology of biofuel production by anaerobic digestion</p> <p>Topic 8: Biotechnology of vermiculture.</p> <p>Practical topics:</p> <p>Topic 1: Classification of organic and inorganic polymeric carriers for enzyme immobilization.</p> <p>Topic 2: Urease adsorption on zeolite and activity study. immobilized and free enzyme</p> <p>Topic 3. Immobilization of glucoamylase and activity study of immobilized and free enzymes.</p> <p>Topic 4: Study of the properties of glucoamylase.</p>

	<p>Topic 5: Preservation of enzymatic activity of different forms of enzyme under the action of denaturing factors - heavy metal ions.</p> <p>Topic 6: Study of the influence on the activity of free and immobilized glucoamylase enzyme denaturing factor - reaction (pH) of the medium.</p> <p>Topic 7: Immobilization of protosubtilin and comparison of the activity of free and immobilized enzyme.</p> <p>Topic 8: The study of the resistance of protosubtilin (preservation of enzymatic activity) to the action of denaturing factor - heavy metal ions.</p> <p>Topic 9: Study of the influence on the activity of free and immobilized protosubtillin enzyme denaturing factor (pH) of the environment.</p> <p>Topic 10: Effect of protosubtilin on the activity of free and immobilized glucoamylase enzyme.</p> <p>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.</p> <p>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.</p> <p>Topic 13: Biomethanogenesis and its stages</p> <p>Topic 14: The negative impact of waste on the environment.</p>
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	<p>The result of learning the discipline is the acquisition by students of such knowledge and skills:</p> <p><i>Knowledge</i></p> <ul style="list-style-type: none"> • breeding highly productive animals, their resistance to various diseases; • diagnostics, prevention and treatment of hereditary and congenital malformations and genetically caused diseases. <p><i>Skills</i></p> <ul style="list-style-type: none"> • 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	
<p>Preconditions necessary for the study of discipline</p> <p>Maximum number of students who can study simultaneously</p> <p>Lesson plans</p>	<p>No</p> <p>115 students</p> <p>Lectures</p> <ol style="list-style-type: none"> 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. <p>Practical classes</p> <ol style="list-style-type: none"> 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 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. Know morally ethical requirements for a veterinarian depending on the place of work; deontological - to the organization and carrying

	<p>out of preventive, diagnostic and therapeutic measures, as well as to the prevention of zoonoses and toxic infections among the population, classification of medical errors, ethics of scientific research, the basics of bioethics.</p> <p>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.</p>
Description of the discipline	
Prerequisites for the study of the discipline	<p>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.</p>
Maximum number of students who can study	10–13 students at a time
Classroom topics	<p>Lecture topics:</p> <p>Topic 1. Regulatory ethics and basic criteria for moral evaluation. Features of the profession of doctor of veterinary medicine</p> <p>Topic 2. Collegiality in the work of a veterinary doctor</p> <p>Topic 3. Ethics of veterinary management</p> <p>Theme 4. Relationship of the veterinarian doctor with the owner of the animal (client)</p> <p>Topic 5. Environmental issues and wildlife</p> <p>Topic 6. Animal welfare issues in various field of use</p> <p>Theme 7. National and international regulatory framework in the field of animal protection</p>
	<p>Practical topics:</p> <p>1. Introduction. Ethical theories of moral evaluation. The golden rule. Soft and hard skills. Situational tasks.</p> <p>2. Morality and the law. Regulation of the work of a veterinary doctor by moral, administrative and criminal law. Situational tasks. Protection of abstracts.</p> <p>3. Veterinary medicine and business. The combination of professional and business interests. Situational tasks. Protection of abstracts.</p> <p>4. The role of animals in human life. Humane and inhumane methods of using animals.</p> <p>5. Well-being problems in pets and stray animals. Cosmetic surgery. Practical aspects of animal euthanasia.</p> <p>6. Animal welfare as a basis for preventive veterinary medicine</p>
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	<p>In the process of mastering the discipline the student should know:</p> <ul style="list-style-type: none"> - 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; <p>be able to:</p> <ul style="list-style-type: none"> - 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	<p>Lecture topics:</p> <p>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</p> <p>Topic 2. Bibliography and citation rules for veterinary medical texts. Features of academic texts (abstract, thesis, abstract, sci-</p>

	<p>tific article)</p> <p>Topic 3. Preparation of a professional presentation, presentation of a material, preparation for public speaking in a professional environment</p> <p>Topic 4. Summary, biography, letter of intent, letters of recommendation as important components of professional communication</p> <p>Topic 5. International professional veterinary organizations, associations and unions</p> <p>Topic 6. Social networks, chats and online communication tools in the professional activity (facebook, youtube, twitter, linkedith). Scientific Search Engines (WoS, Scopus, PubMed, ScienceDirect)</p>
	<p>Practical topics:</p> <p>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.</p> <p>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.</p> <p>3. Veterinary medicine and business. The combination of professional and business interests. Situational tasks. Protection of abstracts.</p> <p>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.</p> <p>5. Use of information and communication technologies in professional activity. Foreign language in professional activity.</p> <p>6. Communication with specialists, industry workers and the population under different conditions and circumstances.</p>
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	Faculty of Veterinary Medicine

discipline	
List of competences and relevant learning outcomes provided by the discipline	<p>The result of the discipline is the acquisition of such knowledge and skills by the students.</p> <p>Knowledge:</p> <ul style="list-style-type: none"> – major sources of biological hazards; – conceptual approaches to ensuring biosafety and bioethics in the field of veterinary medicine; – environmental legal framework. <p>Skill:</p> <ul style="list-style-type: none"> – 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	<p>Lecture topics:</p> <p>Topic1: Fundamentals of biosafety and bioethics.</p> <p>Topic2: Structure of the natural environment. Biosphere, composition, functions, restoration.</p> <p>Topic3: Ecological bases of animal biogeocenotic pathology.</p> <p>Topic4: Animal autecology and pathology. Animal organism and environmental factors.</p> <p>Topic5: Obtaining livestock products that meet safety quality requirements.</p> <p>Topic6: Impact of waste on the environment</p> <p>Topic7: Human health as an indicator of environmental quality</p> <p>Topic8: Scientific basics of rational use and environmental management.</p> <p>Topic 1. Basic environmental terms, concepts and laws</p> <p>Topic 2. Ecological research methods</p> <p>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</p> <p>Topic 3. Impact of environmental factors on animal health</p> <p>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</p> <p>Topic 4. The main ways to adapt organisms to the unfavorable environmental conditions</p> <p>Topic 5. Microorganisms in the environment</p> <p>Topic 6. Ecological importance of water</p> <p>Work 3. Determination of smell and taste of water by organoleptic methods</p> <p>Work 4. Determination of free residual chlorine in water by</p>

	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 Agricultural 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.

	<p>Topic 7: Human health as an indicator of environmental quality.</p> <p>Topic 8: Scientific basics of rational use and environmental management.</p> <p>Topic 1. Basic environmental terms, concepts and laws.</p> <p>Topic 2. Ecological research methods.</p> <p>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.</p> <p>Topic 3. Impact of environmental factors on animal health.</p> <p>Work 2. To study the main negative effects of environmental impacts factors for a living organism in the environment-health system.</p> <p>animals ”in the conditions of the BNAU vivarium.</p> <p>Topic 4. The main ways to adapt organisms to the unfavorable environmental conditions.</p> <p>Topic 5. Microorganisms in the environment.</p> <p>Topic 6. Ecological importance of water.</p> <p>Work 3. Determination of smell and taste of water by organoleptic methods.</p> <p>Work 4. Determination of free residual chlorine in water by titration with methyl orange.</p> <p>Topic 7. Determination of ecological status of air.</p> <p>Work 5. Determination of relative air dustiness.</p> <p>Theme 8. Production of ecologically safe crop production and animal husbandry Topic 9. Environmental problems of waste storage and disposal.</p> <p>Theme 10. Biological threats of anthropogenic origin.</p> <p>Topic 11. Legal principles of biosafety.</p>
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	<p>The result of learning the discipline is the acquisition by students of such knowledge and skills:</p> <p><i>Knowledge</i></p> <ul style="list-style-type: none"> • 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;

	<ul style="list-style-type: none"> • ensure that highly productive. Effective individuals are stocked with herds. <p><i>Skills</i></p> <ul style="list-style-type: none"> • 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	
<p>Preconditions necessary for the study of discipline</p> <p>Maximum number of students who can study simultaneously</p> <p>Lesson plans</p>	<p>No</p> <p>115 students</p> <p>Lectures</p> <ol style="list-style-type: none"> 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. <p>Practical classes</p> <ol style="list-style-type: none"> 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.

Teaching language	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 Ukrainian
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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	<p>The result of learning the discipline is the acquisition by students of such knowledge and skills:</p> <p><i>Knowledge</i></p> <ul style="list-style-type: none"> • 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. <p><i>Skills</i></p> <ul style="list-style-type: none"> • 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; <p>to evaluate young animals, males and females of different species of farm animals and poultry.</p>
Description of the discipline	
Preconditions necessary for the study of disci-	

<p>pline Maximum number of students who can study simultaneously Lesson plans</p>	<p>No 115 students</p> <p>Lectures</p> <ol style="list-style-type: none"> 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 selection. 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. <p>Practical classes</p> <ol style="list-style-type: none"> 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. <p>Teaching language Ukrainian</p>
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Discipline	Fish diseases
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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. Zahayevskiy
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	<p>Studying the discipline results in gaining the following knowledge and abilities:</p> <p>Knowledge of:</p> <ul style="list-style-type: none"> - causes of diseases 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 country, 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. <p>Ability:</p> <ul style="list-style-type: none"> - 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 carry 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	<p>Lecture themes:</p> <ol style="list-style-type: none"> 1: Introduction, aim and task of the fish diseases course. History of ichtio pathology, a science 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 zoonosis causative agents <p>Themes of practical classes:</p> <ol style="list-style-type: none"> 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. Viral diseases of fish (are a spring virosis of carp, viral hemorrhagic septicemia of trout). 6. Methods of diagnostics, treatment and prophylaxis of fish infectious diseases. Bacterial diseases (aeromonosis of carp, pseudomonosis of Chinesees carp, aeromonosis of salmon (furunculosis of salmon). 7. Methods of diagnostics, treatment and prophylaxis of fish infectious diseases. Mycotic diseases (branchiomycosis, saprolegniosis). 8. Methods of diagnostics, treatment and prophylaxis of fish parasitosis diseases. Protozoal infections (chilodnelosis, trichodinosis, ichtio phtiriosis, ichtiobodosis (costiosis). 9. Methods of diagnostics, treatment and prophylaxis of fish parasitosis diseases. Crustaceosis (argulosis, 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

	(botriocefalosis, 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. Nematodosiss (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	<p>Learning outcomes</p> <p><i>Knowledges</i></p> <ul style="list-style-type: none"> - 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. <p><i>Skills:</i></p> <ul style="list-style-type: none"> - 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	<p>Lecture topics:</p> <ol style="list-style-type: none"> 1. Unicellular and intestinal cavity 2. Worms. 3. Shellfish or molluscs. 4. Arthropods

	<p>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.</p>
Language of teaching	Ukrainian

Subjects	Diseases of bees
Teacher	<p>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.</p>
Course and semester in which you plan to study the discipline	3B course5 semester
Faculties whose students are invited to study discipline	Faculty of veterinary medicine
List of competences and relevant learning outcomes provided by the discipline	<p>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</p>

	<p>different etiologies;</p> <ul style="list-style-type: none"> - to understand the essence of the processes of production, storage and processing of biological raw materials. <p>Skill:</p> <ul style="list-style-type: none"> - 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	<p>Lecture topics:</p> <p>Topic 1. Beekeeping is an agricultural sector.</p> <p>Topic 2. The biology of the honey bee. The origin of the bee family.</p> <p>Theme 3. Bee Care. Biological features of wintering bees.</p> <p>Topic 4. Classification of bee diseases. Infectious and non-</p>

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 Theme 11. 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).

	<p>Theme 14. Lesser viral diseases of bees.</p> <p>Theme 15 Exotic diseases of bees.</p> <p>Topic 16. Protozooses (nosematosis, amoebiasis).</p> <p>Topic 17. Arachnosis (acarapidosis, varroosis), diagnosis, prevention and control measures).</p> <p>Theme 18. Diagnosis, prevention and control measures of bee pests (insects, birds and animals pests and enemies of bees).</p> <p>Theme 19. Bees pests and enemies (insects, birds and animals pests and bees enemies).</p> <p>Topic 20. Conducting disinfection, deratization and disinsection on apiaries.</p> <p>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.</p>
Language of instruction	Ukrainian

Subjects	Diseases of fur animals
Teacher	<p>Dovgal Alexander Vladimirovich candidate of veterinary sciences, associate professor, department of epizootology and infectious diseases</p> <p>Yarchuk Bronislav Myronovych, candidate of veterinary sciences, professor of the department of epizootology and infectious diseases.</p>
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	<p>The result of teaching the discipline is the acquisition of the following knowledge and skills by students:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - 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;

	<ul style="list-style-type: none"> - 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. <p>Skill:</p> <ul style="list-style-type: none"> - 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	<p>Lecture topics: Topic 1. Veterinary and sanitary requirements for fur farms.</p>

	<p>Topic 2. Biological features of fur animals</p> <p>Topic 3. Carnivorous Plague.</p> <p>Topic 4. Myxomatosis.</p> <p>Topic 5. Aujeszky's disease.</p> <p>Topic 6. Botulism.</p> <p>Topic 7. Salmonellosis</p> <p>Practical topics:</p> <p>Topic 1. Common problems of fur farming. The subject and objectives of the course. Fur farming as an industry.</p> <p>Topic 2. The main types of fur animals bred in animal husbandry. Neuroleptanalgesia, local anesthesia, euthanasia) after surgery.</p> <p>Topic 3. Biological features of fur animals of the canine family.</p> <p>Topic 4. Biological features of fur animals of the marten family</p> <p>Topic 5. Biological features of fur animals of the rodent family.</p> <p>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.</p> <p>Topic 7. Carnivorous Plague.</p> <p>Topic 8. Infectious carnivorous hepatitis</p> <p>Topic 9. Enzootic encephalomyelitis</p> <p>Theme 10. Myxomatosis.</p> <p>Topic 11. Aleutian mink disease</p> <p>Topic 12. Epizootic catarrhal gastroenteritis mink.</p> <p>Topic 13. Viral haemorrhagic disease of rabbits</p> <p>Topic 14. Infectious rhinotracheitis.</p> <p>Topic 15. Aujeszky's disease.</p> <p>Topic 16. Botulism.</p> <p>Topic 17. Enterotoxemia</p> <p>Topic 18. Tuberculosis.</p> <p>Topic 19. Listeriosis.</p> <p>Topic 20. Diplocosis.</p> <p>Topic 21. Streptococcosis.</p>
Language of instruction	Ukrainian