

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
BILA TSERKVA NATIONAL AGRARIAN UNIVERSITY**

Faculty of Veterinary Medicine



**CATALOG OF ANNOTATIONS
OF ELECTIVE DISCIPLINES FOR FVM BNAU
STUDENTS**

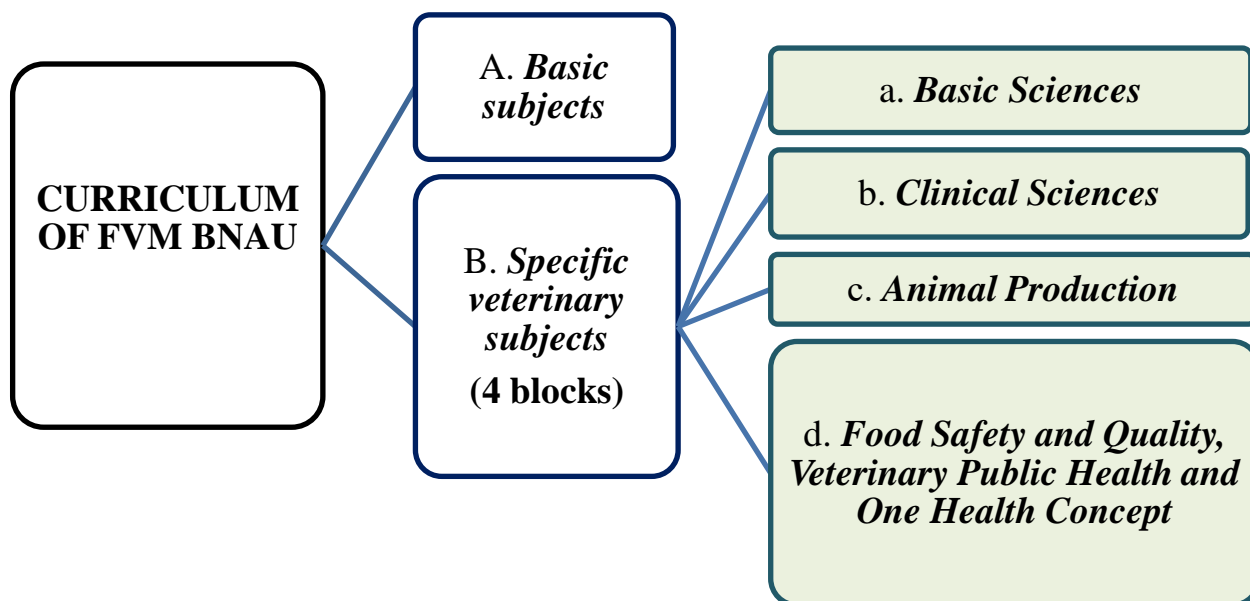
Field of knowledge: **21 "Veterinary medicine"**

Specialty: **211 "Veterinary Medicine"**

Level of higher education: **second (master's)**

Bila Tserkva
2020

The catalog contains an annotated list of disciplines for individual blocks, which are offered for selection by students of the Faculty of Veterinary Medicine of the second (master's) level of higher education in accordance with the curriculum:



The election procedure is described in the "Regulations on elective courses at Bila Tserkva National Agrarian University": <https://education.btsau.edu.ua/node/8>

A. Basic subjects

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Ecology	
Subject	LIFE SAFETY AND CIVIL PROTECTION
Teachers	Rozputny Oleksandr Ivanovych, doctor habilitated; Pertsovyi Ivan Vasilyevich, PhD; Gerasimenko Victor Yurievich, PhD.
Forms of study: Lectures / laboratory Volume of study loading: ECTS credits - 3 (90 hours); Weekly workloading: 1 semester - 3 (1/2); Student attendance: required	
Course and semester in which the discipline is planned to be studied	1 year, 1 semester
Prerequisites for studying the discipline	Does not have
Methods of knowledge control	test
Learning outcomes and competencies	<p>Students must know and be able to:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - legislative, normative-legal, technical and sanitary-hygienic bases on life safety and civil protection of the population and workers; - methods of analysis and risk assessment of hazards at workplaces and production facilities; - methods of forecasting emergencies, measures to prevent them, protect workers, the population, property, localization and elimination of their consequences. <p>Skill:</p> <ul style="list-style-type: none"> - to ensure effective management of life safety and civil protection within its competence in office; - identify harmful and dangerous factors in the environment and assess their impact on human health; - assess sanitary and hygienic conditions, risks and level of occupational safety; - choose and use means of collective and personal protection; - organize and conduct training on life safety, fire, man-made safety and civil protection; - assess the impact factors during emergencies and their impact on human health;

	<ul style="list-style-type: none"> - develop measures to prevent and reduce injuries and diseases of workers, improve working conditions and safety, accident prevention and response plans. - provide first aid to the victim.
Description of the discipline	
The base of the discipline	Auditoriums and laboratory of the department of life safety activity
Topics of classroom lessons	<ul style="list-style-type: none"> - Safety of life of the population and workers as an integral part of sustainable development of human society; - Hazards and emergencies and their assessment and forecasting; - Organization, management, legal regulation of life safety and labor protection; - Occupational hygiene and prevention of occupational diseases in veterinary medicine; - Occupational safety during the treatment of animals, laboratory tests and veterinary and sanitary measures; - Fire safety; - Civil protection as a function of protection of the population, territories, environment and property from emergencies; - Unified state system of civil protection, its components and modes of operation; - Organization of civil protection at the object of economic activity; - Protection of the population, territories, environment and property from emergencies - Providing home care to the victim
P67–69 recommended literature:	<ol style="list-style-type: none"> 1. Безпека життєдіяльності: Навчальний посібник / Зацарний В.В., Праховник Н.А., Землянська О.В., Зацарна О.В. – К.: НТУУ КПІ ІЕЕ, 2016. – електронне видання. URL: http://ela.kpi.ua/kandle/123456789/18263. 2. Цивільний захист. Навчальний посібник / Зеркалов Д.В., Міхєєв Ю. В., Праховник Н.А., Землянська О. В; під редакцією Д. В. Зеркалова. – К.: «Основа». 2014. – 234 с. 3. Охорона праці та цивільний захист: Підручник / О.Г. Левченко [та ін.] ; під ред. О. Г. Левченка. – Київ: КПІ ім. Ігоря Сікорського, 2019. – 420 с. 4. Войналович О. В. Охорона праці у ветеринарній медицині: підручник / О. В. Войналович, Т. О. Білько, Є. І. Марчишина. – К. : Центр учбової літератури, 2016. – 554 с. 5. Основи професійної безпеки та здоров'я людини : підручник / В. В. Березуцький [та ін.] ; під ред. проф. В. В. Березуцького. – Харків : НТУ ХПІ, 2018. – 553 с. 6. Березуцький В. В. Ризик орієнтований підхід в охороні праці / В. В. Березуцький. – LAP, 2019. – 108 с. 7. Безпека людини у сучасних умовах : монографія / В. В. Березуцький [та ін.] ; заг. ред. В. В. Березуцький. Нац. техн. ун-т Харківський політехн. ін-т. – Харків : ФОП Мезіна В., 2018. – 208 с.

	8. Березуцький В. В. Небезпечні виробничі ризики та надійність : навч. посібник / В. В. Березуцький, М. І. Адаменко. – Харків : ФОП Панов А., 2016. – 385 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self- education	D laboratory	E non-clinical with animals, models	F Clinical with animal models	G other	H total
16	–	42	32	–	–	–	90

Date of the last modification of the program	28.08.2019 p.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Ecology	
Subject	OCCUPATIONAL SAFETY IN VETERINARY MEDICINE
Teachers	Rozputny Oleksandr Ivanovych, doctor habilitated; Pertsovyi Ivan Vasilyevich, PhD; Gerasimenko Victor Yurievich, PhD.
Forms of study: Lectures / laboratory Volume of study loading: ECTS credits - 3 (90 hours); Weekly workloading: 1 semester - 3 (1/2); Student attendance: required	
Course and semester in which the discipline is planned to be studied	1 year 1 семестр
Prerequisites for studying the discipline	Does not have
Methods of knowledge control	test
Learning outcomes and competencies	<p>Students must know and be able to:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - legislative, normative-legal, technical and sanitary-hygienic bases of labor protection and life safety; - methods of analysis and risk assessment of hazards at workplaces and production facilities; - methods of forecasting emergencies, measures to prevent them, protect workers, the population, property, localize and eliminate their consequences. <p>Skill:</p> <ul style="list-style-type: none"> - to ensure effective management of labor protection, fire and man-made safety;

	<ul style="list-style-type: none"> - assess the sanitary and hygienic working conditions, risks and level of occupational safety; - organize and conduct training on labor protection, fire, man-made safety; - develop measures to prevent and reduce injuries and diseases of workers, improve working conditions and safety, accident prevention and response plans.
Description of the discipline	
The base of the discipline	Classrooms and laboratory of the Department of Life Safety Activity
Topics of classroom classes	<ul style="list-style-type: none"> – Organization and management of labor protection and life safety; - Legal regulation of occupational safety and health; - Occupational hygiene and prevention of occupational diseases in veterinary medicine; - Occupational safety during treatment of animals, laboratory tests and veterinary and sanitary measures; - Fire and man-made safety; - Hazards and emergencies: definition, their characteristics and classification; - Protection of the population, territories, environment and property from emergencies; - Organization of training and briefings on occupational safety and health; - Development of instructions on labor protection; - Collective agreement and development of labor protection measures; - Investigation of accidents and occupational diseases; - Determining the parameters of the microclimate and lighting of the premises; - Certification of jobs under working conditions; - Providing employees with personal protective equipment; - Occupational safety in the treatment of animals and veterinary and sanitary measures; - Occupational safety in veterinary laboratories; - Calculation of risks of danger sources; - Identification and declaration of safety of high-risk objects; - Calculation of provision of objects, premises and buildings with primary fire extinguishing means; - Organization and planning of measures to protect the population and territories in emergencies; - Providing home care to the victim in case of accidents.
recommended literature:	<ol style="list-style-type: none"> 1. Войналович О. В. Охорона праці у ветеринарній медицині: навчальний підручник / О. В. Войналович, Т. О. Білько, Є. І. Марчишина. – К. :Центр учбової літератури, 2016. – 554 с. 2. Березуцький В. В. Ризик орієнтований підхід в охороні праці / В. В. Березуцький. – Харків: LAP, 2019. – 108 с.

	<p>3. Березуцький В. В. Небезпечні виробничі ризики та надійність : навч. посібник / В. В. Березуцький, М. І. Адаменко. – Харків : ФОП Панов А. М., 2016. – 385 с.</p> <p>4. Основи професійної безпеки та здоров'я людини : підручник / В. В. Березуцький [та ін.] ; під ред. проф. В. В. Березуцького. – Харків : НТУХП, 2018. – 553 с.</p> <p>5. Охорона праці та цивільний захист: Підручник / О.Г. Левченко [та ін.] ; під ред. О. Г. Левченка. – Київ: КПІ ім. Ігоря Сікорського, 2019. – 420 с.</p> <p>6. Безпека людини у сучасних умовах : монографія / В. В. Березуцький [та ін.] ; заг. ред. В. В. Березуцький.. – Харків : ФОП Мезіна В. В., 2018. – 208 с.</p>
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self- education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	–	42	32	–	–	–	90

Date of the last modification of the program	28.08.2019 p.
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Subject	PHILOSOPHY
Teacher	Melnyk Lyudmyla Mykolayivna, Head of the Department of Theoretical-Legal and Social-Humanitarian Disciplines; Yarmola Oleksandr Volodymyrovych, Associate Professor of the Department of Theoretical-Legal and Social-Humanitarian Disciplines
Course and semester in which the discipline is planned to be studied	1 (2-semester)
Faculties whose students are invited to study the discipline	Veterinary medicine
List of competencies and relevant learning outcomes provided by the discipline	<p>As a result of studying the discipline, students must:</p> <p>Knowledge</p> <ul style="list-style-type: none"> • definition of basic philosophical categories and concepts; • the main content of the topics of all sections of the program; • to be guided in the traditions of philosophical thinking formed in the context of world, general civilizational dimensions. <p>Skills</p> <ul style="list-style-type: none"> • - to analyze the mastered material;

	<ul style="list-style-type: none"> • to defend one's own point of view on debatable problems of both domestic and foreign philosophical thought; • use the acquired philosophical knowledge in the analysis of ideological and methodological problems of modern scientific knowledge; • to form and substantiate their own position on current issues.
Description of the discipline	
Prerequisites required for the study of the discipline	History and culture of Ukraine and the world
The maximum number of students who can study at the same time	25
Topics classroom lessons	<p>Topics of practical classes:</p> <ol style="list-style-type: none"> 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. Modern 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. Philosophical doctrine of values 15. Final lesson. Modular control work. <p>Performing test tasks, writing an essay.</p>
Literature recommended	
	<ol style="list-style-type: none"> 1. Філософія історії: підручник /О.А. Габріелян., І.І. Кальной – К.: Академвидав, 2011. – 213 с. 2. Філософія: Підручник / Бичко І.В., Бойченко І.В., Табачковський В.Г. та ін. – К.: Либідь, 2010. – 408 с. Шифр Ю/Ф561 3. Філософія як історія філософії: підручник / За ред. В.І.Ярошевича. – К.: Центр учбов. л-ри, 2012 – 648 с. 4. Філософія [Текст]: підруч. для студ. вищ. навч. закл. / [Л. В. Губерський та ін.; за ред. Л.В. Губерського]. – Х.: Фоліо, 2013. – 509 с. 5. ПричепійС.М. Філософія: підручник /С.М. Причепій, А.М.Черній, Л.А.Чекаль. – 4 вид., випр. – К.: Академвидав, 2015. – 592с 6. Філософія [Текст]: підруч. для студ. вищ. навч. закл. / [Л. В. Губерський та ін.; за ред. Л.В. Губерського]. – Х.: Фоліо, 2013. – 509 с. 7. Щерба С. П. Філософія [Текст] : підруч. для студ. вищ. навч. закл. / С. П. Щерба, О. А. Заглада; за ред. д-ра філос. наук, проф. С. П. Щерби. - Житомир : Полісся, 2012. - 547 с.

	<p>8. Вовк В.М., Петрова Г.М., Черней В.В. Історія філософії: опорний конспект: К.: Атіка, 2012. – 275 с.</p> <p>9. Головащенко І. О. Філософія [Текст] : навч. посіб. / І. О. Головащенко. - Вінниця : ВНТУ, 2016. - 200 с.</p> <p>10. Губар О.М. Філософія: інтерактивний курс лекцій: навч. посібник. К.: Центр учбов. л-ри, 2012 – 416 с. Шифр Ю/Г-93</p>
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The structure of the discipline by type of occupation

A lectures	B seminars	C Self- education	D laboratory	non-clinical with animals, models	F Clinical with animals	G other	H total
16	32	42					90 (3 credits)

Date of the last modification of the program	27.08.2019 p.
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B. Specific veterinary subjects

a. Basic Sciences

Course title	THE METHODOLOGY OF RESEARCH
Teacher	Mykola Nishmenenko Doctor of Veterinary Science, Professor of the Department of Normal and Pathological Physiology of Animal
Course and semester	5 M course, 9 semester
Faculties	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 of the master students. The success of the study is largely determined by the preparation of the master's degree. This requires performing professional tasks, and the use of research methods. Research methods are a system of measures aimed at solving certain tasks in accordance with the set goal.</p> <p>That is why the students have to know:</p> <ul style="list-style-type: none"> - discipline "Research Methodology" forms the foundation of a future researcher in the system of veterinary medicine. Large masses of people, numerous scientific teams, material resources are involved in the production of the scientific product; - in the conditions of intensive growth of volumes of scientific and scientific-technical information, updating of systems of scientific knowledge there is a need for qualitatively new theoretical training of highly qualified specialists, capable of independent creative work, introduction into production of scientific-capacious technologies and adaptation to the conditions of market relations. - Veterinary medicine is a complex multifaceted science which needs are constantly growing. Each of the disciplines of the veterinary doctor's training program is specific, with its own principles and requirements for the organization of educational and scientific work. However, they are all based on a single methodology and uniform requirements. In the system of educational and scientific work of the higher school there are unified organizational approaches, common, without which it is impossible to begin neither studies nor scientific researches. It is no coincidence that the program of training of specialists in most higher education sectors includes a course "Fundamentals of Scientific Research". - the concept of "technique" has a very narrow meaning, because it solves individual fragments of the question, it provides the receipt of separate facts about a particular object (body temperature, animal weight, blood sugar content); - "method" is a fundamentally more general approach to solving the basic problems of scientific knowledge, which also includes theory and relies on a set of techniques that allow us to study the main essential aspects of the object or phenomenon under study. <p>The students have to be able:</p>

	<ul style="list-style-type: none"> - to apply theoretical studies based on axioms, laws, principles, postulates and theorems, when performing tasks, their value is that they do not require repetition, verification, confirmation; - a special place in scientific work is played by methods of analysis of the material under study, which include logical (this is hypothetical and axiomatic) and historical methods that allow to study the formation and development of processes in chronological order; - be able to use the methods of biological research, which include: observation, examination, comparison, as well as experiment; the latter is a kind of criterion for scientific truth, but for that it must be "pure" and reproducible, that is, so that it can be repeated to other researchers; - be able to use different models to facilitate the process of knowledge of the world in the early stages of research, that is, to use modeling of research, which can be physical, natural and mathematical; - to use statistical methods of evaluation of the conducted experiments, since the main part of any research is measurements. The accuracy and reliability of the case depends on them.
Description of the discipline	
Prerequisites necessary for the study	None
Maximum number of students in one group	12
Classroom topics	<p>Lecture topics:</p> <ol style="list-style-type: none"> 1. Introductory Lecture: The main stages of formation of higher education and science in Ukraine. 2. Modern education and science in Ukraine. 3. Higher education in Western Europe. Education and Science in the US and Canada. 4 Science and its role in society. 5. Principles of scientific knowledge and functions of science. 6. Ukrainian Academy of Sciences, its foundation and development. 7. Science and its problems. Science as a sphere of human activity. 9. Scientific and technological progress and its forecasting. <p>Practical topics.</p> <p>Theme 2. History of Science.</p> <p>Topic 3. Science as the subject dealing with facts.</p> <p>Theme 4. Science - the sphere of human activity.</p> <p>Theme 5. Science and its main tasks</p> <p>Topic 6. Components of the general cycle of disciplines</p> <p>Theme 7. Basic principles of conducting experiments on animals.</p> <p>Theme 8. Features of general biological, zootechnical, clinical research methods used in animal husbandry</p> <p>Topic 9. Production verification of research implications.</p> <p>Writing and defending an abstract on a selected topic.</p>
Language of instruction	Ukrainian

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	APPLIED CYTOLOGY AND HISTOLOGY
Teacher	Mykola Utechenko, PhD, DVM
Forms of study: Lectures / laboratory Volume of study loading: EKTS credits - 4 (120 hours); Weekly loading: Student attendance: required	
Course and semester in which the discipline is planned to be studied	2 year, 4 semester
Prerequisites for studying the discipline	“Animal Anatomy”, “Cytology, Histology, Embryology”, “Animal Physiology”, “Pathological Physiology”
Methods of knowledge control	Test
Learning outcomes and competencies	<p>Knowledge:</p> <ul style="list-style-type: none"> - know the structural and functional organization of living organisms at the micro- and macroscopic level - in-depth knowledge of cell biology (cytology); - in-depth knowledge of organ histology <p>Skill:</p> <ul style="list-style-type: none"> - have in-depth practical skills in working with a light microscope - be able to interpret the results of cytology, histology.
Description of the discipline	
The base of the discipline	Classrooms, histological research laboratory
Topics of classroom classes	<p>Lecture topics:</p> <p>Cell biology (cytology) as a basis of modern biological knowledge. Biosafety.</p> <p>Technique of taking cytological and histological material.</p> <ul style="list-style-type: none"> - Methods of cytological, histological examinations. - Preparation of cytological, histological preparations. - Preparation of material for cytological examinations. <p>Staining of drugs.</p> <ul style="list-style-type: none"> - Organ cytological, histological examinations. - Cytological, histological studies of individual infectious organisms. - General principles of interpretation of cytological, histological preparations. <p>Topics of laboratory classes:</p> <ul style="list-style-type: none"> - Subject and tasks of cell biology (cytology). Current issues addressed by modern cytology. Biosafety.

	<ul style="list-style-type: none"> - The structure of the light microscope. Rules for working with a light microscope. - Types of cytological drugs. - Types of material for cytological examinations. Rules for taking material. - Methods of in vivo cell research. - Technique of selection of cytological and histological material. - General principles of interpretation of cytological, histological preparations. - Cytological examination: lymphoid tissue; skin and subcutaneous injuries; respiratory system; synovial fluid; eyes and appendages; urinary tract; liver, pancreas and digestive tract; endocrine glands; reproductive system; damaged breast; assessment of effusions of body cavities; - General principles of cytological examination of individual infectious organisms. - Cytological, histological examination: bacterial infections; viral infections; fungal infections; protozoan, parasitic infections.
Literature recommended	<ol style="list-style-type: none"> 1. Держинський М.Е. та ін. Загальна цитологія і гістологія. – К., 2010. 2. Гистология. / Под ред. Афанасьева Ю.И., Юриной Н.А. – М.: Медицина, 2002. 3. Биков В. Л. Цитология и общая гистология. — СПб., 1999. – 152 с. 4. Цитологические исследования у собак и кошек. Справочное руководство / Под одщей редак. Дж. Данна / Пер. С англ. Е. Поляковой. М.: "Аквариум Принт", 2016 – 256 с. 5. Горальський Л.П. Основи гістологічної техніки і морфо-функціональні методи дослідження у нормі та при патології / Л. П. Горальський, В. Т. Хомич, О. І. Кононський. - Житомир : „Полісся”, 2005 - 288 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Applied cytology and histology	16		56	20		28	-	120 4 credits

Date of the last modification of the program	28.08.2019 p.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Ecology	
Subject	RADIOBIOLOGY
Teachers	Rozputny Oleksandr Ivanovych, doctor habilitated; Pertsyovyi Ivan Vasilyevich, PhD; Gerasimenko Victor Yurievich, PhD.
Forms of study: Lectures / laboratory Volume of study loading: ECTS credits - 3 (90 hours); Weekly workloading: 6 semester - 2 (1/1); Student attendance: required	
Course and semester in which the discipline is planned to be studied	3 year, 6 semester
Prerequisites for studying the discipline	«Biophysics "," Chemistry "," Animal Anatomy "," Cytology, Histology, Embryology "," Genetics and Molecular Biology of the Cell "," Animal Physiology "
Methods of knowledge control	test
Learning outcomes and competencies	<p>Students must know and be able to:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - patterns of migration of radionuclides through trophic chains of ecosystems, their accumulation in feed, animals, milk, meat and other livestock and crop products; - principles and measures of agricultural production in radioactively contaminated areas; - the effect of ionizing radiation on the animal's body; - legal regulation in the field of radiation safety and radioactive waste management; - normalization of the content of radionuclides in food products and other products of crop and livestock production, drinking water; - principles and measures of radiation safety when working with sources of ionizing radiation and radioactive substances. <p>Skill:</p> <ul style="list-style-type: none"> - to conduct dosimetric, radiometric and spectrometric studies of food products, crop and livestock products and environmental objects;

	<ul style="list-style-type: none"> - to assess the radioecological condition of environmental objects and the radiation situation in areas affected by radioactive contamination as a result of the Chernobyl disaster; - to carry out veterinary and sanitary assessment of livestock products during radiation exposure of animals and their affected by incorporated radionuclides; - to forecast the accumulation of radionuclides in crop and livestock products and to develop measures for agricultural production in radioactively contaminated areas.
Description of the discipline	
The base of the discipline	Classrooms and laboratory of the Department of Life Safety Activity
Topics of classroom lessons	<p>The concept of radiobiology and its tasks;</p> <ul style="list-style-type: none"> - Basic laws of radioactive transformations of atomic nuclei; - Methods of registration of ionizing radiation; - Biological action of ionizing radiation; - Migration of radioactive elements in the biosphere and their metabolism in animals; - Conducting agricultural production in areas affected by radioactive contamination as a result of the Chernobyl disaster; - Radiological control of food products and environmental objects; - The use of sources of ionizing radiation in veterinary medicine and animal husbandry; - Familiarization with the equipment, safety rules and handling of sources of ionizing radiation in radiological laboratories; - Calculation of radionuclide activity and doses of ionizing radiation; - Familiarization with the general characteristics, structure and principle of operation of radiation monitoring devices; - Determination of the dose rate of gamma radiation indoors and outdoors; - Selection and preparation of samples for radiometric and spectrometric studies; - Determination of ¹³⁷Cs activity in food products, soils on "USC Gamma Plus", "RUB-01P6", "RUG-R". - Determination of ⁹⁰Sr activity in food products and soils at USC Gamma Plus. - Prediction of ¹³⁷Cs and ⁹⁰Sr activity in crop and livestock products obtained in radioactively contaminated areas.
recommended literature:	<ol style="list-style-type: none"> 1. Гудков І.М. Радіобіологія: Підручник – К.: НУБіПУ – 2016. – 485 с. 2. Гудков І.М. Сільськогосподарська радіоекологія: підручник / Гудков І.М., Гайченко В.А., Кашпаров В.О. –К.: Ліра-К, 2017. –268 с. 3. Практикум з радіобіології та радіоекології / Гайченко В.А., Гудков І.М., Кашпаров В.О., Лазарєв М.М., Кіцно В.О. К.: Кондор, 2010 р. – 282 с.

	4. Natural and induced radioactivity in food. International Atomic Energy Agency, VIENNA, 2002, 136p. 5. Radiation biology: a handbook for teachers and students. International Atomic Energy Agency, VIENNA, 2010, 150 p. 6. Chernobyl: 30 Years of Radioactive Contamination Legacy. Report. Lead writer and coordination of report: Prof. Valerii Kashparov, Kyiv, 2016, 59 p.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self- education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	–	58	16	–	–	–	90

Date of the last modification of the program	28.08.2019 p.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Назва дисципліни	RADIOGRAPHIC ANATOMY
Teachers:	Mykola Ilnitsky, doctor habilitated DVM (guarantor).
Forms of study: Lectures / practical Study load: EKTS credits - 3 (90 hours) Weekly load: Student attendance: required	
Course and semester in which it is planned to study the discipline	3rd year - VI semester
Prerequisites for studying the discipline.	To study the discipline "Animal Anatomy" students must have basic training in zoology and general biology, based on secondary education
Methods of knowledge control	Credit
Learning outcomes and competencies	Students should know: features of the structure of all organs and their systems and devices of domestic animals; regularities of X-ray diagnostics of organs, their systems and devices in onto and phylogeny; areas of the body of animals, topography and relationship of organs in these areas. and be able to: determine the species of individual organs of domestic animals; determine the location of individual organs in different parts of the body of animals.

Description of the discipline	
Knowledge base in the discipline	Auditoriums, prosectories, anatomical museum, X-ray room
Topics of classrooms	<p>Topics of lectures:</p> <ol style="list-style-type: none"> 1. Physical and technological bases of radiological methods of diagnostics with use of ionizing radiation. 2. Physical and technological bases of radiological methods of diagnostics with use of non-ionizing radiation. 3. Radiation diagnostics of diseases of the musculoskeletal system. 4. Radiation diagnosis of respiratory diseases. 5. Radiation diagnosis of diseases of the cardiovascular system. 6. Radiation diagnosis of diseases of the gastrointestinal tract. 7. Radiation diagnosis of diseases of the gastrointestinal tract. 8. Radiation diagnosis of diseases of the urinary system.
	<p>Topics of practical classes:</p> <ol style="list-style-type: none"> 1. Organization of work and equipment of the department (office) of X-ray diagnostics. Technological bases of X-ray diagnostics. 2. Organization of work and equipment of the department (office) of ultrasound diagnostics. Technological bases of ultrasonic diagnostics. 3. Final lesson from the section "Physical and technological bases of radio diagnostics". 4. Radiation diagnosis of traumatic injuries of the musculoskeletal system. 5. Radiation diagnosis of inflammatory diseases and tumors of the musculoskeletal system. 6. Radiation diagnosis of diseases of the skull and brain. 7. Radiation diagnosis of the spine and spinal cord. 8. Radiation diagnostics of respiratory organs. Radiation of lung tumors.
Recommended Books:	<ol style="list-style-type: none"> 1. РЕНТГЕНОДІАГНОСТИКА [Text]: навч. way. for students. higher honey. textbook закл / За заг. ed. VI Milka.- Vinnytsia: New book, 2005. - 352 p. 2. I. Pulyuy. Collection of works. - К.: Рада, 1996. - 712 с. 3. Rafael Gualla / «Pulujisieren» statt «Röntgenisieren» // Wochenendbeilage der «Oberösterreichischen Nachrichten», 3. Februar 1962. 4. Small mining encyclopedia: in 3 volumes / ed. VS Biletsky. - D.: Eastern Publishing House, 2004-2013.
Language of instruction	Ukrainian

Структура дисципліни за видами занять

A Lectures	B Seminars	C Independent	D Practical	E Non-clinical	F Clinical	H
16	4	58	12			90 годин (3 кредити)

University Name: Bila Tserkva National Agrarian University	
The name of the faculty: Faculty of Veterinary Medicine	
Subjects	VETERINARY MANAGEMENT
Lecturer	Taras Tsarenko, PhD, DVM, SergiyBilyk, PhD, DVM
Forms of study: Lectures / practical / seminars Volume of study load: ECTS credits -3 (90 hours); Weekly workload: 5th semester - for two weeks 6 hours (2 lectures / 4 practical or seminars) Student attendance: required	
A course and semester in which the study of discipline is planned	3 course, 5 semester
Prerequisites for studying discipline	"Introduction to the specialty", "Ukrainian language (for professional direction)", "Foreign language (for professional direction)", "History and culture of Ukraine", "Philosophy", "Professional ethics with the basics of biosafety and bioethics"
Methods of knowledge control	Test
List of competences and relevant learning outcomes provided by the discipline	<p>Students must know and be able to:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - know the methods of analysis, synthesis and further modern training in entrepreneurship and management of enterprises and business. Know how to search, process and analyze information. - have deep knowledge in the field of information and communication technologies used in professions. Know the computer systems of accounting and management of veterinary institutions. - know the basic methods of scientific research. Have a deep knowledge of the specifics of their profession in the field of veterinary entrepreneurship. Know the methods of assessing the quality of commercial activities of veterinary entrepreneurship. - knowledge of job responsibilities of heads of veterinary enterprises and ways to perform the tasks. <p>Skill:</p> <ul style="list-style-type: none"> - be able to draw up contracts, draw up primary accounting documents and administrative documents; - be able to organize financing in the field of veterinary business taking into account the risks; - be able to organize the management of the organization at the structural, functional and personal levels; - be able to manage the movement of information and its use in veterinary institutions; - be able to organize the marketing activities of a veterinary enterprise on the basis of marketing research; - be able to apply techniques and methods of advertising and sales promotion; - be able to make a business plan;

	- in compliance with legal norms, be responsible for making informed decisions and actions regarding the correct use of production capacity in the field of veterinary medicine.
Description of discipline	
Base holding classes from discipline	Classrooms, computer classes.
Themes of classroom classes	<p style="text-align: center;">Lectures.</p> <p style="text-align: center;">Module I.</p> <p style="text-align: center;">ENTERPRISE IN VETERINARY MEDICINE</p> <p>Topic 1. Entrepreneurial idea in veterinary activities. The mechanism of creating your own business.</p> <p>Topic 2. Legal basis of veterinary entrepreneurship. Organizational and legal forms of veterinary business. Risks of veterinary entrepreneurship.</p> <p style="text-align: center;">Module II.</p> <p style="text-align: center;">MANAGEMENT IN VETERINARY MEDICINE</p> <p>Topic 3. The subject and evolution of management. The concept of organization Information and communication.</p> <p>Topic 4. Management functions. Manpower and conflict management.</p> <p style="text-align: center;">Module III.</p> <p style="text-align: center;">MARKETING IN VETERINARY MEDICINE</p> <p>Topic 5. Subject of marketing. Study of the market of veterinary goods and services.</p> <p>Topic 6. Veterinary goods and services. Formation of demand and sales promotion.</p> <p>Topic 7. Business planning in veterinary business.</p>
	<p style="text-align: center;">Practical training:</p> <p style="text-align: center;">Module I.</p> <p style="text-align: center;">ENTERPRISE IN VETERINARY MEDICINE</p> <p>Topic 1. Entrepreneurial idea in veterinary activities. Assessment of a person's ability to engage in entrepreneurial activity. The mechanism of creating your own business. Legal bases of veterinary business. Civil legislation of Ukraine. Economic legislation of Ukraine. Veterinary legislation of Ukraine. Procedure for licensing veterinary activities. The procedure for state registration of business activities. Rights and responsibilities of a veterinary entrepreneur.</p> <p>Topic 2. Organizational and legal forms of veterinary business. Types of business veterinary institutions. Constituent documents of various veterinary institutions of various organizational and legal forms. Association of legal entities. Sources of financing of entrepreneurial veterinary activity. Banking services. Lending. Accounting in business veterinary institutions. Economic activity. Areas of economic activity of a doctor-entrepreneur. Contracts and contractual relations in entrepreneurial veterinary activity. Contract of sale. Service agreement. Subscription for guaranteed veterinary care.</p> <p>Topic 3. Risks of veterinary entrepreneurship. Sources of risks for the veterinary entrepreneur. Classification of losses. Risk classification. Methods to prevent losses and reduce risks.</p> <p>Topic 4. Seminar</p> <p style="text-align: center;">Module II.</p>

MANAGEMENT IN VETERINARY MEDICINE

Topic 5. The subject and evolution of management.

Categories of management. Management and its components. Management levels. Types of management. Production and financial management. Historical development of management. Classical and neoclassical management theory. Scientific schools and management concepts. Modern management concepts. Features of American, European and Japanese management. Features of management in government agencies. The concept of organization. Organization as an object of management. Organizational structure of the institution. Organization as a process. Components of the organizational process. Classical, behavioral and modern theory of organization. Fundamentals of organizational design. Types of organizational structures.

Topic 6. Management functions.

General concept of management functions. The main functions of management and their relationship. Functions of management: goal setting, planning, development and management decisions, organization of implementation, operational influence, motivation, control. Manager in the management system of a veterinary enterprise. Content, purpose, subject, means and product of managerial work. The place of the manager in the organization. The role of the manager in the organization. The environment of the manager. Professional and personal qualities of a manager. Training of managers for veterinary institutions.

Topic 7. Information and communication.

The concept of information and its movement. Classification of types of information. Communication process. Types of communications. Communication management in the organization.

Topic 8. Human resource management and conflict.

Human resource planning. Recruitment. The concept of labor collective. The content of the people management process. Methods of labor collective management. Management styles. Conflicts and their types. Conflict management.

Topic 9. Seminar.

Module III.

MARKETING IN VETERINARY MEDICINE

Topic 10. The subject of marketing.

Subject, goals, objectives of marketing in veterinary business. The evolution of marketing. Marketing categories. Marketing concept. Types of marketing depending on demand. Marketing environment of a business veterinary institution. 4P and 4C marketing complexes.

Topic 11. Market research of veterinary goods and services.

The current state of the market of veterinary drugs in Ukraine. Veterinary services market. The essence, tasks and role of marketing research of the market of veterinary goods and services. Organization of marketing research. Marketing research technologies. Marketing information system. Market segmentation. Ways to reach the market. determination of market capacity. Veterinary goods and services. Categories of goods and services. Market attributes of the product. Product competitiveness. Product positioning. Product life cycle.

	<p>Break-even point calculation. Creation and introduction to the market of a new veterinary drug. Wholesale and retail trade. Competitive veterinary service.</p> <p>Topic 12. Demand formation and sales promotion. The essence of the concept of "advertising" and its significance in veterinary business. The task of advertising. The advertising process and its elements. Principles of creating an advertising appeal. Organization of an advertising campaign. Classification of advertising. Propaganda and PR. The task of sales promotion. Methods of sales promotion. Pricing for veterinary goods and services. Pricing as a marketing factor. State regulation of prices. Cost and marketing methods of pricing. Price elasticity of demand. Features of marketing in the fields of veterinary entrepreneurship. Marketing in the work of a veterinary clinic for small animals. Marketing in the activities of a veterinarian-entrepreneur in rural areas. marketing in veterinary pharmacies. Marketing in the wholesale trade of veterinary drugs, feeds, equipment, etc. Marketing activities for the organization of veterinary consulting.</p> <p>Topic 13. Business planning in veterinary business. The essence and objectives of the business plan. Business plan functions. General rules of business planning. Business planning information field. Technology of drawing up and structure of the business plan.</p> <p>Topic 14. Seminar.</p>
<p>Рекомендована література:</p>	<ol style="list-style-type: none"> 1. Menedzhment ta marketynh u veterynarniy medytsyni: [Management and marketing in veterinary medicine] navch. posib. / L.YE. Korniyenko, B.M. Yarchuk, R.V. Tyrsin, T.M. Tsarenko, T.V. Sokol's'ka. – K.: Ahrarna osvita, 2013. – 349 s. 2. Fylyp Kotler. Marketynh menedzhment. [Marketing management] Ékspres–kurs / SPb.: Pyter, 2004.– 496 s. 3. Busol V.O. Pryvatna praktyka. Pershi kroky [Private practice. The first steps] / Busol V.O., V.V. Vlasenko, V.T. Lisovenko, A.M. Trokhymchuk / Naukovo–praktychne vydannya. – Vinnytsya, 2004. – 179s. 4. Panasova T.H. Rozrobka ta marketynh konkurentospromozhnykh veterynar–nykh posluh. [Development and marketing of competitive veterinary services.] Metodychni rekomendatsiyi. – Poltava, 2009.–34 s. 5. Levkivs'kyy D.M. Mekhanizm stvorennya vlasnoho biznesu u veterynarniy medytsyni. [The mechanism of creating your own business in veterinary medicine.] Metodychni vkazivky.–L'viv, 2008.–24 s. 6. Paskov P.P. Menedzhment veterynarnoho byznesa. [Veterinary business management] Chast' 1–M.: Mis·hoUet, 2004.– 301 s. 7. Paskov P.P. Menedzhment veterynarnoho byznesa. [Veterinary business management] Chast' 2–M.: Mis·hoVet, 2004.– 286 s 8. The BusinessSide of VeterinaryMedicine: WhatVeterinarySchoolsDon'tTeachYou / M DuffyJones, TomHarbin., MillCityPress, 2017.– 178 p.
<p>Teaching language</p>	<p>Ukrainian</p>

Structure of discipline by types of classes

Subject	A	B	C	D	E	F	G	H
Veterinary management	14	6	48	22	-	-	-	90 (3 ECTS)

A - lectures; B - seminars; C - controlled self-study; D - laboratory and descriptive work; E - non-clinical work on animals; F - Clinical work on animals; G - others (specify); H - together.

The date of the latest program modification	Developed for the first time in 2020-2021
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University Name: Bila Tserkva National Agrarian University	
The name of the faculty: Faculty of Veterinary Medicine	
Subjects	ORGANIZATION AND MANAGEMENT OF THE VETERINARY CLINIC
Lecturer	Taras Tsarenko, PhD, DVM, Sergiy Bilyk, PhD, DVM
Forms of study: Lectures / practical Number of hours of study: ECTS – 3 (90 год.); number of hours per week: 5 semester – for two weeks 6 hours (2 lectures / 4 practical or seminars) Student's presence: mandatory	
A course and semester in which the study of discipline is planned	3 course, 5 semester
Prerequisites for studying discipline	"Introduction to the specialty", "Ukrainian language (for professional direction)", "Foreign language (for professional direction)", "History and culture of Ukraine", "Philosophy", "Professional ethics with the basics of biosafety and bioethics"
Methods of knowledge control	Test
List of competences and relevant learning outcomes provided by the discipline	Students must know and be able to: Knowledge: - know the methods of analysis, synthesis and further modern training in veterinary clinic management. Know the methods of search, processing and analysis of information; \ know the regulations and procedures for the establishment and operation of a veterinary clinic; - know the basics of business planning, budgeting, accounting and economics of veterinary clinics; - know computer systems for veterinary clinics; - knowledge of job responsibilities and functions of the staff of the veterinary clinic; - know the requirements for storage and use of medicines in veterinary clinics; - know the main types of veterinary equipment and its use in veterinary clinics. Skill:

	<ul style="list-style-type: none"> - be able to create private practice and legal entities for the veterinary business; - be able to analyze and use in the activities of the veterinary clinic the results of marketing research; - be able to manage the staff of the veterinary clinic; - be able to organize the storage and use of veterinary drugs in the clinic; - be able to select and use veterinary equipment according to the profile of the clinic; - be able to make a business plan of a veterinary clinic;
Description of discipline	
Base holding classes from discipline	Classrooms, computer classes.
Themes of classroom classes	<p style="text-align: center;">Lectures.</p> <p>Topic 1. Creating a clinic - the beginning of practice. Types and organizational and legal forms of veterinary business.</p> <p>Topic 2. Assessment of the client base, involvement in the local community. The image of the clinic. Communication and customer training. Security of customers and staff.</p> <p>Topic 3. Clinic staff: doctors, laboratory assistants, assistants, administrators, management. Selection, training, motivation, dismissal of staff.</p> <p>Topic 4. Types of clinics. Space organization, work schedules, warehouse accounting, computer systems. Effective clinic management.</p> <p>Topic 5. Pharmacy in the clinic, licensing, supply, movement accounting and write-off of drugs.</p> <p>Topic 6. Veterinary equipment. Selection and use of equipment. Creating a clinic profile.</p> <p>Topic 7. Business planning, marketing, financing, budget, pricing, taxes, insurance in the clinic.</p>
	<p style="text-align: center;">Practical training:</p> <p>Topic 1. Entrepreneurial idea in veterinary activities. Creating a clinic is the beginning of practice. The mechanism of creating your own business. Legal bases of veterinary business. Civil legislation of Ukraine. Economic legislation of Ukraine. Veterinary legislation of Ukraine. Procedure for licensing veterinary activities. The procedure for state registration of business activities. Rights and responsibilities of a veterinary entrepreneur.</p> <p>Topic 2. Types and organizational and legal forms of veterinary business. Partnership. Constituent documents of various organizational and legal forms. Registration of a private entrepreneur or legal entity.</p> <p>Topic 3. Evaluation of the client base, involvement in the local community. The image of the clinic. Communication and customer training. Security of customers and staff.</p> <p>Topic 4. Seminar</p> <p>Topic 5. Clinic staff: doctors, laboratory assistants, assistants, administrators, management. Their role and responsibilities.</p>

	<p>Topic 6. Selection, training, motivation, dismissal of staff. Labor relations. Specialization. European Veterinary Specialization System (EBVS).</p> <p>Topic 7. Types of clinics. Space organization, work schedules, warehouse accounting, computer systems. Range of services. Animal Health Center is a comprehensive veterinary business.</p> <p>Topic 8. Effective management of the clinic. Structural, functional and personal component of management.</p> <p>Topic 9. Pharmacy in the clinic, requirements for the pharmacy, supply, storage, effective use of medicines. Traffic accounting and medication write-off. Computer composition accounting systems. License for precursors and narcotics.</p> <p>Topic 10. Equipment in the clinic. Opportunities and organization of effective use. Clinic profile.</p> <p>Topic 11. Seminar.</p> <p>Topic 12. Marketing of veterinary services. Pricing. Budget. Financing. Taxes. Insurance. Advertising and promotion.</p> <p>Topic 13. Business planning in a veterinary clinic. Functions of the business plan, rules of drawing up and use.</p> <p>Topic 14. Seminar.</p>
Recommended Books:	<ol style="list-style-type: none"> 1. Veterinary Practice Management. 2nd Edition: A Practical Guide / Maggie Shilcock, Georgina Stutchfield, Saunders Ltd., 2008.– 256 p. 2. Veterinary Practice Management, Third Edition / Dixon Gunn, John Bower, John Gripper, Peter Gripper, Blackwell Science Ltd, 2001.– 254 p. 3. Opperman Mark. The Art of Veterinary Practice Management, Advanstar Communications, 1999.– 240 c. 4. The Business Side of Veterinary Medicine: What Veterinary Schools Don't Teach You / M Duffy Jones, Tom Harbin., Mill City Press, 2017.– 178 p. 5. Ackerman Lowell. Blackwell's Five-Minute Veterinary Practice Management Consult: 2nd Edition, John Wiley & Sons Inc, 2013. – 808 p. 6. Prendergast Heather. Front Office Management for the Veterinary Team, 2nd Edition, Elsevier - Health Sciences Division, 2014. – 483 p. 7. Donnelly Amanda L. 101 Veterinary Practice Management Questions Answered, AAHA Press. –2010. – 204 p. 8. Heinke Marsha L., Practice Made Perfect: A Complete Guide to Veterinary Practice Management, 2nd Edition, AAHA Press, 2012 – 584 p. 9. Panasova T.H. Rozrobka ta marketynh konkurentospromozhnykh veterynar-nykh posluh. Metodychni rekomendatsiyi. [Development and marketing of competitive veterinary services. Guidelines] – Poltava, 2009.–34 s. 10. Paskov P.P. Menedzhment veterynarnoho byznesa. [Veterinary business management.] Chast' 1–M.: Mis·hoUet, 2004.– 301 s. 11. Paskov P.P. Menedzhment veterynarnoho byznesa. [Veterinary business management.] Chast' 2–M.: Mis·hoVet, 2004.– 286 s.

Teaching language	Ukrainian
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Structure of discipline by types of classes

Subject	A	B	C	D	E	F	G	H
Organization and management of veterinary clinics	14	6	48	22	-	-	-	90 (3 ECTS)

A - lectures; **B** - seminars; **C** - controlled self-study; **D** - laboratory and descriptive work; **E** - non-clinical work on animals; **F** - Clinical work on animals; **G** - others (specify); **H** - together.

The date of the latest program modification	Developed for the first time in 2020-2021
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	FOOD CHEMISTRY
Teachers	Alina Vovkogon, PhD, DAg Roll Natalia, PhD
Forms of study: Lectures / practical Volume of study loading: ECTS-3 credits (90 hours); Weekly workloading: 3rd semester - 4 (1/1); Student attendance: required	
Course and semester in which the discipline is planned to be studied	2 year, 3 semester
Prerequisites for studying the discipline	Chemistry, Physics, Microbiology
Methods of knowledge control	Exam
Learning outcomes and competencies	<p>The result of teaching the discipline is the acquisition by students of the following knowledge and skills:</p> <ul style="list-style-type: none"> - Knowledge: - Know the structure, properties and biological significance of macronutrients and micronutrients. - Features of chemical transformations of proteins, carbohydrates, lipids and mineral elements that occur during the technological process of production, storage and use of food. Skill: - Determine the content of raw materials and food nutrients by qualitative reactions; - Have the skills of systematic analysis of the quality of raw materials and products in order to predict changes in the set of properties in the process of processing, storage and preparation of products with appropriate properties analysis of vitamins.
Description of the discipline	

The base of the discipline	Classrooms, and laboratory of the department, interdepartmental clinics
Topics of classroom classes	<p>Lecture topics</p> <ol style="list-style-type: none"> 1. Food chemistry as a science. Basic concepts. 2. Amino acids, peptides and proteins in food and raw materials. 3. Lipids: values, oxidation reactions. Lipids of various foods. 4. Carbohydrates: chemical reactions of carbohydrates, altered food processing. Maillard's reaction. 5. Water in food. 6. Minerals, trace elements, toxic elements. 7. Vitamins and their changes during cooking. Antivitamins. 8. Enzymes in the food industry <p>Topics of practical classes</p> <ol style="list-style-type: none"> 1. Safety rules in the laboratory. Collection, processing, storage and processing of samples. 2. Proteins: isolation and determination of proteins from different types of food. 3. Lipids: types of fatty reactions. 4. Carbohydrates: differentiation of carbohydrates by functional group. Hydrolysis of sucrose and starch. 5. Determination of calcium and magnesium concentration in mineral waters by complexometry. Determination of water hardness. 6. Determination of salt content in food by the Mohr method. 7. Qualitative analysis of provitamin A in carrots. <p>Determination of vitamin C concentration.</p> <ol style="list-style-type: none"> 8. Processes of lactic acid fermentation.
recommended literature:	<ol style="list-style-type: none"> 1. Євлаш В. В. Харчова хімія : Навчальний посібник / В. В. Євлаш, О. І. Торяник, В. О. Коваленко, О. Ф. Аксьонова, Н. О. Отрошко, Т. О. Кузнецова, Л. Ф. Павлоцька, Д. О. Торяник. - Х. : Світ книг, 2012. – 504 с. 2. Пілюгіна І.С. та ін. Хімія та методи дослідження сировини та матеріалів. Загальні основи аналітичної хімії: Лабораторний практикум. Навч. посібник / І.С. Пілюгіна, О.В. Добровольська, Н.В. Мурликіна. – Х. : ХДУХТ, 2008. - 354 с. 3. Пищевая химия / А.П. Нечаев, С.Е. Траубенберг, А.А.Кочеткова и др./ Под ред. А.П. Нечаева; издание 4-е, испр. и доп. – СПб.: ГИРД, 2007. – 640 с. 4. Павлоцька Л.Ф. Основи фізіології гігієни харчування та проблеми безпеки харчових продуктів / Л.Ф. Павлоцька, Н.В. Дуденко, Л.Р. Дмитрієвич. – Суми: ВТД «Університетська книга», 2007. – 441 с. 5. Пасальський Б.К. Хімія харчових продуктів: Навч. пос. / Б.К. Пасальський. – К.: Київ. Держ.торг.-екон.ун-т, 2000. – 196 с. 6. Позняковский В.М. Гигиенические основы питания, безопасность и экспертиза продовольственных товаров: Учебник; 2-е изд. доп. / В.М. Позняковский. – Новосибирск: Сибирское университетское издательство, 2007. – 448 с.

	<p>7. Токсичні речовини у харчових продуктах та методи їх визначення: Підручник / А.А. Дубиніна, Л.П. Малюк, Г.А. Селютіна та ін. – К.: ВД «Професіонал», 2007. – 384 с.</p> <p>8. Донченко Л.В. Безопасность пищевого сырья и продуктов питания / Л.В. Донченко, В.Д. Надтыка. – М.: Пищевая пром-сть, 1999. – 352 с.</p> <p>9. Пищевая химия: Лабораторный практикум. Пособие для вузов / А.П. Нечаев., С.Е. Траубенберг, А.А. Кочеткова и др.– СПб.: ГИРД, 2006. – 304 с.</p>
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self- education	D laboratory	E non-clinical with animals, models	F Clinical with animals	G other	H total
16	6	58	10	-	-	-	90

Date of the last modification of the program	28.08.2019 p.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	FOOD MICROBIOLOGY
Teachers	Iryna Rublenko, doctor habilitated, DVM (guarantor); Andriy Andriychuk, PhD, DVM; Vladimir Zotsenko, PhD, DVM, Svetlana Taranukha, master, DVM; Denis Ostrovsky, master, DVM.
Forms of study: Lectures / practical Volume of study load: ECTS credits - 3 (90 hours); Weekly workload: 8 semester - 2 (1/1) Student presence: selective	
Course and semester in which the subject is planned to be studied	4th year, 8th semester
Conditions for taking the course	Pregnant students may not attend this course
Prerequisites for studying the discipline	"Animal Anatomy", "Cytology, Histology, Embryology", "Animal Physiology", "Cell Genetics and Molecular Biology", "Veterinary Microbiology", "Animal Physiology", "Veterinary Microbiology and Immunology", "Food Safety, Food Quality and feed "" epizootology, infectious diseases and preventive medicine "," veterinary toxicology ""
Methods of knowledge control	Test
Conditions for taking the course	Pregnant students may not attend this course

Learning outcomes and competencies	<p>The result of teaching the discipline is that students receive the following knowledge and skills:</p> <p>Knowledge: Standards for microbiological research of food; standards for microbiological research of animal feed; food legislation to ensure bacterial safety.</p> <p>Skills: microbiological research of food products; microbiological research of animal feed; interpret the results of food research; interpret the results of animal feed research</p>
Description of the subjects	
The base of the discipline	Auditorium and laboratory of the department
Topics of classroom lessons	<p>Topics of lecture: microbiology of milk, milk products, cheeses, meat and meat products, fish, eggs, vegetables and fruits, canning and production of canned food, animal feed; research of quality of disinfection at the industrial enterprises.</p> <p>Topics of practical classes: rules of work, safety at work in the sanitary-bacteriological laboratory, acquaintance with the equipment of the laboratory. Risk factors in the laboratory of veterinary medicine. Sanitary and microbiological research of milk and dairy products. Preparation of samples for research. Determination of QMAFAnM, the degree of microbial contamination of milk breakdown by reductase. Determination of antibiotics and sulfonamide substances in milk. Determination of BGEC, Staphylococcus aureus, presence of listeria, bacteria of the genus Salmonella, bacteria, genus Proteus, presence of spores of anaerobic bacteria in milk and cheese. Sanitary and microbiological examination of meat and meat products. Sampling, preparation of samples for research. Determination of QMAFAnM and BGEC, Staphylococcus aureus, pathogenic streptococci, Listeria monocytogenes, Proteus, Salmonella, Clostridium, Bac. anthracis. Sanitary and microbiological examination of fish. Identification of Clostridium perfringens and Clostridium botulinum toxins. Research of animal feed.</p>
P67–69 recommended literature:	<ol style="list-style-type: none"> 1. Головка А.М. Ветеринарна санітарна мікробіологія Навчальний посібник // А.М. Головка, І.О. Рубленко. – Київ: Аграрна освіта, 2010. – 284 с. 2. Рубленко І.О. Мікробіологія молока і молочних продуктів / Методичні рекомендації для забезпечення самостійної роботи студентів ветеринарного та біолого-технологічного факультетів, слухачів ПНКСВМ. Освітньо-кваліфікаційний рівень – бакалаврів, магістрів, напрям – санітарна мікробіологія / І.О. Рубленко. – Біла Церква, 2009. – 43 с. 3. Мікробіологія молока і молочних продуктів з основами ветеринарно-санітарної експертизи / [С.М. Бергілевич, В.В. Касянчук, В.З. Салата та ін.]. – Суми, Університетська книга, 2010. – 320 с. 4. Скрипник В.Г. Лабораторна діагностика сибірки тварин, індикація збудника з патологічного та біологічного матеріалу, сировини тваринного походження та об'єктів навколишнього середовища / В.Г. Скрипник, І.О. Рубленко, Т.О. Гаркавенко – Київ, 2015. – 78с.

	<p>5. Tackling drug-resistant infections globally: final report and recommendations. 2016. – 84p. https://amr-review.org/sites/default/files/160518_Final%20paper_with%20cover.pdf.</p> <p>6. Пількевич Н.Б., Боярчук О.Д. Мікробіологія харчових продуктів: Навчальний посібник для студентів вищих навчальних закладів. – Луганськ: Альма-матер, 2008. – 152 с http://anatomy.luguniv.edu.ua/ukr_studies/food_microbiology.pdf</p> <p>7. Мікробіологія харчових виробництв: навчальний посібник / Капрельянц Л. В., Пилипенко Л. М., Єгорова А. В., Пауліна Я. Б., Труфкаті Л. В., Кананихіна О. М., Величко Т. О., Килименчук О. О., Кручек О. А., Шпирко Т. В., Охотська М. І. – Херсон: ОЛДІ-ПЛЮС, 2017. – 478 с. https://oldiplus.ua/downloads/244.pdf</p>
Language	Ukrainian

The structure of the subject

A lectures	B seminars	C independent	D laboratory	E non- clinical with animals, models	F clinical with animals	G other	H together
16	2	58	2	10			90

Date of the last modification of the curriculum	Developed for the first time for 2020-2021 academic year.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	VETERINARY PHARMACY
Teachers	Rublenko Serhiy Vasyliovych Doctor of Veterinary Sciences, Professor of the Department of Parasitology and Pharmacology Avramenko Natalia Vladimirovna, Koziy Natalia Vladimirovna, Shaganenko Raisa Vladimirovna Candidates of Veterinary Sciences, Associate Professors of the Department of Parasitology and Pharmacology
Forms of study: Lectures / practical Volume of study load: ECTS credits - 3 (90 hours); Weekly load: Student attendance: required	
Course and semester in which the discipline is planned to be studied	6 M course
Prerequisites for studying the discipline	Pharmacology and pharmacotherapy, Prescription. Botany. Math. Biochemistry. Biophysics.
	Learning outcomes defined by the Standard of Higher Education of Ukraine for the specialty 211 "Veterinary Medicine": PH15, PH16.

Learning outcomes and competencies	
List of competencies and relevant learning outcomes provided by the discipline	<p>Students must know and be able to:</p> <p>Knowledge Pharmacy as a branch of veterinary science and its components Modern methods of pharmaceutical analysis. Pharmaceutical terminology. Fundamentals of technology for the manufacture of common dosage forms in veterinary medicine.</p> <p>Skill Use special terminology. Determine the quality of manufactured drugs. Communicate with manufacturers, wholesalers, retailers and pet owners about veterinary drugs. Analyze the need of the pharmacy for veterinary drugs and hygiene items for different species of animals.</p>
Description of the discipline	
The base of the discipline	Audiences. Pharmacy of the interdepartmental veterinary clinic and local pharmaceutical enterprises.
Topics of classroom classes	<p>Lecture topics</p> <ol style="list-style-type: none"> 1. Development, formation. The main aspects of veterinary pharmacy. 2. Pharmaceutical chemistry - a component of pharmacy. Her task. Methods and principles of work. 3. Basics of pharmacognosy. Medicinal components of plants and their connection with the life of the animal. 4. Technology of manufacturing dosage forms. 5. Evaluation of the effectiveness, safety and stability of veterinary drugs. 6. Organization and economics of pharmacy. 7. Basics of marketing of veterinary drugs. <p>Topics of laboratory classes</p> <ol style="list-style-type: none"> 1. Subject and objectives of pharmaceutical chemistry. State Pharmacopoeia of Ukraine. 2. Methods of pharmaceutical analysis. 3. Classification of biologically active compounds of plants, components of drugs. 4. Alkaloid-containing plants, their role in pharmacy and pharmacotherapy. 5. Glycoside-containing plants, their role in pharmacy and pharmacotherapy. 6. Essential oils and essential oil plants. 7. Vegetable raw materials. Standardization. Reality and good quality. 8. Technology of manufacturing solid dosage forms. 9. Technology of making soft dosage forms 10. Technology of production of liquid dosage forms 11. Standardization of drugs.

	<p>12. Veterinary pharmacy. Work planning and accounting.</p> <p>13. Pharmaceutical enterprises of Ukraine. From drug manufacturing to implementation.</p> <p>14. Marketing management in pharmacy.</p>
Recommended Books	<p>1. Pharmaceutical Encyclopedia / ed. Chernykh VP - K .: «MORION», 2005. - 848 p.</p> <p>2. Khmelnytsky G.O. Pharmaceutical chemistry / G.O. Khmelnytsky, M.F. Povhan. Kyiv. - 2003. - 255 p.</p> <p>3. Tikhonov O.I. Pharmacy technology of drugs / O.I. Tikhonov, T.Г. Bright. - Vinnytsia: New book, 2007. - 632 p.</p> <p>4. Technology of drugs: a textbook (University I-III years.) / O.S. Marchuk, N.B. Androschuk. - VSV "Medicine", 2014. - 576 p.</p> <p>5. Pharmaceutical marketing: a method. rivers to practice. zan. / I.V. Pestun, I.V. Bondareva, S.V. Zhadko. - H.: NFaU, 2015. - 88 p.</p> <p>6. Kobzar A.Y. Pharmacognosy in medicine: Textbook. manual. - K .: Medicine, 2007. - 544 c.</p>
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Veterinary pharmacy	14	10	48	10	8	-	-	90 (3 credit)

Date of the last modification of the program	28.08.2019.
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b. Clinical Sciences

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	CLINICAL MICROBIOLOGY
Teachers	Iryna Rublenko, doctor habilitated, DVM (guarantor); Andriy Andriychuk, PhD, DVM; Vladimir Zotsenko, PhD, DVM
Forms of study: Lectures / laboratory Volume of study load: ECTS credits -3 (90 hours); Weekly workload: 5th semester - 2 (1/1); Student presence: selective	
Course and semester in which the subject is planned to be studied	3rd year, 5th semester
Conditions for taking the course	Pregnant students may not attend this course
Prerequisites for studying the discipline	“Animal Anatomy”, “Cytology, Histology, Embryology”, “Animal Physiology”, “Pathological Physiology”, “Animal Feeding”, “Clinical Diagnosis and Diagnostic”, “Veterinary Clinical Biochemistry”
Methods of knowledge control	Test
Learning outcomes and competencies	The result of teaching the discipline is that students receive the following knowledge and skills: Know: methods of identification of clinical strains, the main representatives of the biocenosis of animals, methods of their microbiological diagnosis, microbiological diagnosis of bacteremia and sepsis, urinary tract infections, respiratory system, intestinal and food poisoning, wound infection. Be able to: interpret the biological properties of pathogenic and opportunistic microorganisms, determine the methods of microbiological, virological, epitropic therapy and prevention of opportunistic infections.
Description of the subjects	
The base of the discipline	Auditorium and laboratory of the department
Topics of classroom lessons	Lecture topics: Objects and induced infectious processes in a non-infectious clinic. Opportunistic infections in clinics. Free-standing and obligate-pathogenic infections. Diagnosis of purulent-septic processes. Assistance is aimed at providing clinicians in the diagnosis, treatment and prevention of infectious complications. Microbial diseases in the departments of therapy, surgery, obstetrics, urology, traumatology, orthopedics, ophthalmology, dermatology. Microbiological diagnosis of urinary tract infections, respiratory system, intestinal infections. Microbiological diagnosis of food poisoning and wound infection.

	<p>Prevalence of methicillin-resistant variants among <i>Staphylococcus aureus</i>. Clinical guidelines for the determination of antibiotic susceptibility EUCAST-2015. The use of immunological methods - the study, development and assimilation of methods and principles of clinical diagnosis of animal diseases using serological reactions, the use of the latest methods using technology.</p> <p>Topics of practical classes. Safety precautions. General information about clinical microbiology. Features of opportunistic pathogens and infections. Features of microbiological diagnosis of clinical infections. Methods of identification of clinical strains. Systems for rapid identification of microorganisms, viruses. Mushrooms. WEB API - fast identification of pathogens. The main representatives of the biocenosis of birds and animals. Sowing of poultry material (meat, heart, liver, poultry heads). Microbiological diagnosis of bacteremia and sepsis. Blood culture, the presence of growth, the scheme of further research. Microbiological diagnosis of wound infection in animals. Microbiological diagnosis of inflammatory processes in the eyes and ears of animals. Microbiological diagnosis of the oral cavity of the animal.</p>
P67–69 recommended literature:	<ol style="list-style-type: none"> 1. Назарова Л.С. Клиническая микробиология с основами иммунологии. - Саратов – 2011. - 282 с. file:///C:/Users/%D0%90%D0%B4%D0%BC%D0%B8%D0%BD/Downloads/%D0%9A%D0%BB%D0%B8%D0%BD%D0%B8%D1%87%D0%B5%D1%81%D0%BA%D0%B0%D1%8F_%D0%BC%D0%B8%D0%BA%D1%80%D0%BE%D0%B1%D0%B8%D0%BE%D0%BB%D0%BE%D0%B3%D0%B8%D1%8F_%D1%81_%D0%BE%D1%81%D0%BD%D0%BE%D0%B2%D0%B0%D0%BC%D0%B8_%D0%B8%D0%BC%D0%BC%D1%83%D0%BD%D0%BE%D0%BB%D0%BE%D0%B3%D0%B8%D0%B8.pdf 2. Clinical microbiology. U.Waheed. Attiq Ullah. - 2011. - 162 p. file:///C:/Users/%D0%90%D0%B4%D0%BC%D0%B8%D0%BD/Downloads/MicrobiologyOct2520131%20(1).pdf 3. Клиническая микробиология. Донецкая Э.Г. 2011. http://kingmed.info/download.php?book_id=1186
Language	Ukrainian

The structure of the subject

A lectures	B seminars	C independent	D laboratory	E non-clinical with animals, models	F clinical with animals	G other	H together
14	2	62	4	8	-		90

Date of the last modification of the curriculum	Developed for the first time for 2020-2021 academic year.
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Name of the university: Bila Tserkva National Agrarian University

Name of the faculty: Faculty of Veterinary Medicine

Subjects	CLINICAL IMMUNOLOGY
Teachers	Iryna Rublenko, doctor habilitated, DVM (guarantor); Andriy Andriychuk, PhD, DVM; Vladimir Zotsenko, PhD, DVM
Forms of study: Lectures / laboratory Volume of study load: ECTS credits -3 (90 hours); Weekly workload: 5th semester - 2 (1/1); Student presence: selective	
Course and semester in which the subject is planned to be studied	3rd year, 5th semester
Conditions for taking the course	Pregnant students may not attend this course
Prerequisites for studying the discipline	“Animal Anatomy”, “Cytology, Histology, Embryology”, “Animal Physiology”, “Pathological Physiology”, “Veterinary Microbiology”
Methods of knowledge control	Test
Learning outcomes and competencies	Students must know and be able to: <i>Knowledge:</i> the main factors of humoral and cellular immunity - mechanisms to protect the body from infectious agents and their functioning; anti-infective, antitumor, transplant, autoimmunity, immunity of tissue incompatibility; development and substantiation of rational prevention of infections on the basis of old and new recombinant, genetically engineered vaccines; immunosuppressive therapy, elucidated mechanisms of autoimmune diseases; laboratory diagnosis of animal diseases using immunological methods; development of methods of diagnosis and pathogenetic therapy of allergic diseases, identification of allergens; immunodeficiencies: diagnosis of immunodeficiencies and methods of their treatment; immunology of reproductions and the mother-fetus relationship: elucidation of the mechanisms of the mother-fetus relationship, the concept of immunogenetic development of the fetus. <i>Skills:</i> to make conclusions about the state of functioning of the immune system according to laboratory tests; to analyze indicators of immune status, bases of immunological researches; to investigate and establish the causes of diseases of the immune system of animals, using the latest methods; to determine the features of the development of antibacterial, antiviral, antifungal immune protection.
Description of the subjects	
The base of the discipline	Auditorium and laboratory of the department
Topics of classroom lessons	Lecture topics: The structure and principles of the immune system. Immune inflammation. Age immunology. Organization of clinical immunological studies of animals with infectious pathology (safety procedures, biosafety when working with sick animals). Clinical immunodiagnostic methods of examination of a sick animal. Development of systems for specific prevention of infectious and non-infectious animal diseases. Assessment of the immune system of animals of different species and birds. Basic principles of therapy of immune-dependent diseases. Nominal deficits.

	<p>Atopic diseases. Assessment of the state of antibacterial, antifungal, antiparasitic immunity in animals and birds. Investigation of biological material of animals using the phenomenon of agglutination. Theoretical study of individual diseases.</p> <p>Topics of practical classes: Safety in the study of clinical immunology. Diagnostic algorithms and protocols for immunoprophylaxis of animals with infectious diseases of bacteriological, viral and mycological etiology. Situational tasks; Features of serological reactions for the study of virus-containing material. Hemadsorption retention reaction and neutralization reaction; Features of serological reactions for the study of virus-containing material. Diffuse precipitation reaction in agar gel. Hemagglutination retention reaction; Clinical immunodiagnostics and immunoprophylaxis of digestive and respiratory organs and diseases of young animals; Enzyme-linked immunosorbent assay and polymerase chain reaction; Diagnostic algorithms and protocols for immunoprophylaxis in gastrointestinal diseases of newborn young. Organizational and special methods of immunoprophylaxis.</p>
<p>recommended literature:</p>	<p>Immynology. Richard Coico Sunshine. – 433 p. https://issuu.com/ozielleather/docs/coico_immunology_richard_coico</p> <p>2. Клиническая микробиология с основами иммунологии. Л.С. Назарова. – 2011. – 282 с.</p> <p>3. О.М. Біловол, П.Г. Кравчун, В.Д. Бабаджан та ін. Клінічна імунологія та алергологія. – 2011. http://repo.knmu.edu.ua/bitstream/123456789/660/1/%D0%9D%D0%B0%D0%B2%D1%87%D0%B0%D0%BB%D1%8C%D0%BD%D0%B8%D0%B9%20%D0%BF%D0%BE%D1%81%D1%96%D0%B1%D0%BD%D0%B8%D0%BA%20%D0%9A%D0%BB%D1%96%D0%BD%D1%96%D1%87%D0%BD%D0%B0%20%D1%96%D0%BC%D1%83%D0%BD%D0%BE%D0%BB%D0%BE%D0%B3%D1%96%D1%8F%20%D1%82%D0%B0%20%D0%B0%D0%BB%D0%B5%D1%80%D0%B3%D0%BE%D0%BB%D0%BE%D0%B3%D1%96%D1%8F.pdf</p> <p>4. Клінічна імунологія та алергологія. О.М. Біловол, П.Г. Кравчун, В.Д. Бабаджан та ін. – Харків. 2011. – 550 с. http://repo.knmu.edu.ua/bitstream/123456789/660/1/%D0%9D%D0%B0%D0%B2%D1%87%D0%B0%D0%BB%D1%8C%D0%BD%D0%B8%D0%B9%20%D0%BF%D0%BE%D1%81%D1%96%D0%B1%D0%BD%D0%B8%D0%BA%20%D0%9A%D0%BB%D1%96%D0%BD%D1%96%D1%87%D0%BD%D0%B0%20%D1%96%D0%BC%D1%83%D0%BD%D0%BE%D0%BB%D0%BE%D0%B3%D1%96%D1%8F%20%D1%82%D0%B0%20%D0%B0%D0%BB%D0%B5%D1%80%D0%B3%D0%BE%D0%BB%D0%BE%D0%B3%D1%96%D1%8F.pdf</p> <p>5. Manual clinical immunology. – 2014. https://www.researchgate.net/publication/26184182_Manual_of_Clinical_Immunology.</p> <p>6. Анохина Н.В. – 2013. – 19 с. Общая и клиническая иммунология https://booksonline.com.ua/view.php?book=130406</p> <p>7. Клиническая иммунология. Л.В. Ковальчук, Л.В. Ганковская, Р.Я. Мешкова http://kingmed.info/knigi/Immynologia_i_allergologia/book_695/Klinicheska_ia_immunologiya_i_allergologiya_s_osnovami_obshchey_immunologii-Kovalchuk_LV_Gankovskaya_LV_Meshkova_RYa-2011-djvu</p>

	8. Клінічна та лабораторна імунологія. Національний підручник. За загальною редакцією Кузнецової Л.В.; Фролова В.М.; Бабаджана В.Д. – К. ООО «Полиграф плюс», 2012. – 922 с. https://nmapo.edu.ua/images/FakTer/KafKlimAle/KlinihLaborImunolog.pdf
Language	Ukrainian

The structure of the subject

A lectures	B seminars	C independent	D laboratory	E non-clinical with animals, models	F clinical with animals	G other	H together
14	2	62	4	8	-		90

Date of the last modification of the curriculum	Developed for the first time for 2020-2021 academic year.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	REPRODUCTIVE ENDOCRINOLOGY
Teachers	Svitlana Vlasenko, doctor habilitated, DVM (guarantor); Alexander Eroshenko PhD, DVM.
Forms of study: lectures / laboratory Volume of study loading: ECTS credits - 3 (90 hours); Weekly loading: 3 (1/2); Student presence: selective	
Course and semester in which the discipline is planned to be studied	5 year; 10 semester
Prerequisites for studying the discipline	“ Animal Anatomy ”;“ Cytology, Histology, Embryology ”;“ Animal Physiology ”;“ Pathological Physiology ”;“ Clinical Diagnostics and Diagnostic Imaging ”;“ Pharmacology and Pharmacotherapy ”;“ Obstetrics and Biotechnology of Reproduction with Fundamentals of Andrology ”.
Methods of knowledge control	Test
Learning outcomes and competencies	Students must know: - endocrine system of regulation of reproductive function in females; patterns of hormone-dependent processes in the ovaries and uterus during the reproductive cycle; hormonal drugs, their action, indications and side effects, schemes of their use; - pathogenetic role of endocrine disorders in the development of obstetric, gynecological and andrological diseases; be able:

	<ul style="list-style-type: none"> - apply hormonal therapy taking into account the indications and contraindications, as well as its pharmacovigilance; - use hormonal methods to control reproductive processes and contraception.
Description of the discipline	
The base of the discipline	Classrooms of the department, clinics of ruminants, pigs, horses, small animals and exotic animals, farms of the research center of the university, public and private clinics for companion animals, farms of agricultural enterprises.
Topics of classroom classes	<p>Lecture topics:</p> <ul style="list-style-type: none"> - Endocrine glands, hormones and mechanisms of their action; - Neurohumoral system of regulation of reproductive function and mechanisms of interaction with endocrine glands and other functional systems and organs; - Methods of hormonal research; - Environmental requirements and biosafety of hormonal drugs. <p>Topics of laboratory classes:</p> <ul style="list-style-type: none"> - Dynamics of hormone-dependent intra-ovarian and intrauterine processes during the reproductive cycle; - Hormonal drugs used in veterinary reproductive medicine; - Endocrinopathy in the genesis of the arousal stage of the sexual cycle; - Endocrine disorders of pregnancy and childbirth; - Endocrine mechanisms in the pathogenesis of postpartum diseases; - Disorders of steroidogenesis in gynecological diseases; - The use of hormone therapy in reproductive medicine; - Hormonal methods of contraception; – - Hormonal disorders in males.
Literature recommended	<ol style="list-style-type: none"> 1. Ветеринарне акушерство, гінекологія та біотехнологія відтворення тварин з основами андрології / В.А. Яблонський, С.П. Хомин, Г.М. Калиновський та ін.: За ред. В.А. Яблонського, С.П. Хомина: Підручник. – Вінниця: Нова Книга, 2006. – 592 с. 2. Акушерство, гінекологія та штучне осіменіння сільськогосподарських тварин: навчальний посібник / Г.Г. Харута, С.С. Волков, І.М. Плахотнюк та ін. – К.: Аграрна освіта, 2013. – 445 с. 3. Эндокринология и репродукция собак и кошек / Э. Фелдмен, Р.Нелсон. – М., 2014. 688 с. 4. Clinical Canine and Feline Reproduction: Evidence – Based Answers / M.V. Root Kustritz. – Wiley–Blackwell, 2011. – 332 pp. 5. Clinical Endocrinology of Companion Animals / Rand Jacquie. – Wiley-Blackwell, 2013. – 538 p.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A	B	C	D	E	F	G	H
lectures	seminars	Self-education	laboratory	non-clinical with animals,	Clinical with animals	other	total

				models			
16	6	42	12	6	8		90

Date of the last modification of the program	28.08.2019 p.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	VETERINARY ENDOCRINOLOGY
Teachers	Volodymyr Sakhnyuk, Dr. hab., DVM (guarantor); Volodymyr Golovakha, Dr. hab., DVM; Leonid Bogatko, PhD, DVM
Forms of study: Lectures / practical Volume of study load: ECTS credits - 3 (90 hours) Form of study: full-time Weekly loading: 4 (2/2) Student attendance: obligatory	
Course and semester in which the discipline is planned to be studied	5 year, 10 semester
Prerequisites for studying the discipline	Animal anatomy, Cytology, histology, embryology, Veterinary clinical biochemistry, Animal nutrition, Animal physiology, Pathological physiology, Pharmacology and Pharmacotherapy, Propaedeutics and diagnostic imaging
Methods of knowledge control	Test
Learning outcomes and competencies	<p>Students <i>must know</i>: the importance of endocrine organs for animals; the main causes of endocrinopathies etiology and mechanisms of endocrine diseases, methods of clinical laboratory and diagnostic imaging; analysis and interpretation of laboratory results; pharmacological agents and pathogenetic bases of treatment of endocrine pathology in animals taking into account species, age and physiological features of its course.</p> <p><i>Be able to</i>: have techniques and means of emergency medical care and intensive care for endocrine diseases in animals; have methods of treating animals with endocrine pathology; apply diagnostic algorithms and treatment protocols for endocrine diseases</p>
Description of the discipline	
The base of the discipline	Classrooms, Laboratory of Clinical Biochemistry of the Department of Therapy and Clinical Diagnostics, interdepartmental laboratory of the Faculty of Veterinary Medicine, educational veterinary clinic (VTH), public and private clinics and farms.
Topics of classroom lessons	Topic 1. The main causes and mechanisms of endocrine diseases.

	<p>Topic 2. Clinical and visual methods of examination of a sick animal with endocrine pathology.</p> <p>Topic 3. Research and treatment of animals with endocrine diseases. Theoretical study the same diseases.</p> <p>Topic 4. Diagnostic algorithms and treatment protocols for animals with thyroid pathology.</p> <p>Topic 5. Rationale for the use of etiotropic and pathogenetic therapy for diabetes.</p> <p>Topic 6. Diagnosis and treatment the diseases of the endocrine pancreas part. Treatment protocols.</p> <p>Topic 7. Diagnostic algorithms and treatment of adrenal diseases.</p> <p>Topic 8. Diagnostic algorithms and methods of treatment of thyroid diseases.</p>
Recommended literature:	<ol style="list-style-type: none"> 1. Vnutrishni khvoroby tvaryn: pidruchnyk / [Levchenko V.I., Kondrakhin I.P., Vlizlo V.V. ta in.]; za red. V.I.Levchenka. – Bila Tserkva, 2012. – Ch. 1. – 528 s. 2. Vnutrishni khvoroby tvaryn: pidruchnyk / [Levchenko V.I., Kondrakhin I.P., Vlizlo V.V. ta in.]; za red. V.I.Levchenka. – Bila Tserkva, 2015. – Ch. 2. – 610 s. 3. Hodivlia silskohospodarskykh tvaryn: pidruchnyk / [Ibatullin I.I., Melnychuk D.O., Bohdanov H.O. ta in.]; za red. akademika NAAN Ukrainy I.I. Ibatullina. – Vinnytsia: Nova knyha, 2007. – 616 s. 4. Veterynarna klinichna biokhimiia: pidruchnyk / V.I. Levchenko ta in.; za red. V.I. Levchenka i V.V. Vlizla. 2-he vyd., pererob ta dop. Bila Tserkva, 2019. – 416 s. 5. Klinichna diahnozyka vnutrishnikh khvorob tvaryn / V.I. Levchenko, V.V. Vlizlo, I.P. Kondrakhin [ta in.]; Za red. V.I. Levchenka ta V.M. Bezukha – Bila Tserkva, 2017. – 544 s. 6. Veterinary medicine. A textbook diseases cattle, sheep, pigs, goats and horses/ Gts edition / Smit B.P. – 2002 7. Textbook of internal medicine. / Stefen J. Etinger, Edvard C. Feldman. – 2005.
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self- education	D laboratory	E non- clinical with animals, models	F Clinical with animals	G other	H total
16	3	42	-	18	11	-	90

Date of the last modification of the program	28.08.2020
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Name of the university: Bila Tserkva National Agrarian University

Name of the faculty: Faculty of Veterinary Medicine	
Subject	CLINICAL AND ECOLOGICAL TOXICOLOGY
Teachers	Nataliia Vovkotrub, PhD, DVM; Olexander Chub, PhD, DVM; Vasyl Bezukh, PhD, DVM
Forms of study: Lectures / practical Volume of study load: ECTS credits - 3 (90 hours) Form of study: full-time Weekly loading: 3 (1/2) Student attendance: obligatory	
Course and semester in which the discipline is planned to be studied	5 year, 10 semester
Prerequisites for studying the discipline	Veterinary clinical biochemistry, Animal nutrition, Animal physiology, Pathological physiology, Pharmacology and Pharmacotherapy, Propaedeutics and diagnostic imaging, Radiobiology, Veterinary toxicology
Methods of knowledge control	Test
Learning outcomes and competencies	<p>Learning outcomes defined by the Standard of Higher Education in Ukraine for the specialty 211 "Veterinary Medicine": 1, 2, 7.</p> <p>Students <i>must know</i>: the main ecotoxins and mechanisms of their influence on animals and poultry; basic diagnostic, therapeutic and prophylactic algorithms for serotoxins poisoning, their role according to the "One Health" concept.</p> <p><i>Be able to</i>: sampling, preserving, packaging and forwarding the samples for chemical and toxicological research; organize and conduct laboratory and special diagnostic tests and analyze their results; use information and communication technologies in professional activities; develop toxicological protocols and apply different treatment regimens for animals with various origins poisoning; to develop and organize measures for the prevention of animals and poultry toxicities with ecotoxins in accordance with "One Health" concept and in the case of poisoning - to make a qualified diagnosis using modern research methods.</p>
Description of the discipline	
The base of the discipline	Classrooms, Laboratory of Clinical Biochemistry of the Department of Therapy and Clinical Diagnostics, interdepartmental laboratory of the Faculty of Veterinary Medicine, educational veterinary clinic (VTH), public and private clinics and farms.
Topics of classroom lessons	<p>Topic 1. Subject, definition and objectives of clinical and environmental toxicology. Introduction of ecotoxicology.</p> <p>Topic 2. Organ and system Toxicity in domestic animals and poultry.</p> <p>Topic 3. Toxicology of insecticides.</p> <p>Topic 4. Toxicology of fungicides and herbicides.</p>

	<p>Topic 5. Biotoxins. Topic 6. Toxicology of metals. Topic 7. Toxicology of drugs. Topic 8. Household and industrial products poisoning. Topic 9. Food poisoning in small domestic animals. Topic 10. General characteristics, diagnostic principles, treatment and prevention of mycotoxicosis in animals and poultry.</p>
Recommended literature:	<p>1. Malinin O.A. Veterynarnaia toksykologhiya: Ucheb. posobyie / Malinin O.A., Khmelnytskyi H.A., Kutsan A.T. – Korsun-Shevchenkovskiy, 2002. – 464 s. 2. Berny P. Guide pratique de toxicologie clinique veterinaire / P. Berny, S. Queffelec // Medcom. – Paris, 2014. – 351 p. 3. Plumlee K. Clinical veterinary toxicology / K. Plumlee // Mosby, 2004. – 477 p. 4. Veterynarna mikotoksykologhiia: navchalnyi posibnyk / V.B. Dukhnitskyi, H.O. Khmelnytskyi, H.V. Boiko, V.D. Ishchenko. – Kyiv, 2010. – 203 s. 5. Laboratorna veterynarna toksykologhiia: Navch. posibnyk / [V.I. Levchenko, A.V. Rozumniuk, Yu.M. Novozhytska ta in.]. – Bila Tserkva, 2012. – 216 s.</p>
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self- education	D laboratory	E non- clinical with animals, models	F Clinical with animals	G other	H total
16	6	42	12	6	8	-	90

Date of the last modification of the program	28.08.2020
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	DISEASES OF BEES
Teacher	Alexander Dovgal, PhD
Forms of study: Lectures / practical Volume of study loading: ECTS-3.0 credits (90 hours); Weekly loading: Student attendance: required	
Course and semester in which the discipline is planned to be studied	5 year, semester - 10

Prerequisites for studying the discipline	“ Zoology ”;“ Veterinary epidemiology ”;“ Pharmacology and pharmacotherapy ”;“ Veterinary microbiology and immunology ”;“ Veterinary parasitology and invasive diseases ”.
Methods of knowledge control	Test
Learning outcomes and competencies	<p>Students must know and be able to:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - rules and features of work with infectious bees; - methods of diagnosis of infectious diseases of bees; - methods of epizootological inspection of the farm apiary, selection and shipment of material, conducting diagnostic tests; - methods of planning and conducting anti-epizootic measures in beekeeping. <p>Skill:</p> <ul style="list-style-type: none"> - to carry out epizootological inspection of the farm apiary, modern methods and preparations for veterinary and sanitary treatments (disinfection, deratization, disinsection); - apply methods of diagnosis of infectious diseases of bees; - based on the results of diagnostic studies to develop anti-epizootic measures.
Discipline description	
The base of the discipline	Classrooms, laboratory of the department, Interdepartmental clinics and apiary of the research farm of the university, public and private apiaries, beekeeping associations for the production of beekeeping products.
Topics of classroom classes	<p>Lecture topics:</p> <p>Beekeeping - a branch of agricultural production</p> <p>2. Biology of honey bees. The origin of the bee family. Caring for bees. Biological features of wintering bees.</p> <p>3. Classification of bee diseases. Infectious and non-communicable diseases of bees.</p> <p>4. Bacterioses: European, American rot, paragnitis, septicemia, hafniosis. Viral diseases of bees: saccular brood, acute viral paralysis, chronic viral paralysis, filomentovirus. Mycoses of bees: aspergillosis of bees, ascospherosis of bees, melanosis.</p> <p>5. Invasive diseases of bees: protozoa (nosematosis), arachnosis (acarapidosis, varroasis). Invasive diseases of bees: entomoses (braulosis, senothianosis, physocephaly). Helminthiasis of bees.</p> <p>6. Veterinary and sanitary measures in apiaries. Veterinary care of apiaries. Veterinary and sanitary requirements for apiaries, winter quarters, cellars and other facilities.</p> <p>7. Certification of apiaries. Accounting documents in apiaries. Disinfection, disinsection, deratization in apiaries.</p> <p>8. Veterinary and sanitary supervision during the procurement and storage of beekeeping products. State control of honey and other beekeeping products in the food market.</p> <p>Topics of practical classes:</p>

1. Anatomy and biology of the honey bee. Biology of the honey bee. Anatomical structure of various individuals of the bee family. The structure of the external organs of the bee body (organs of movement, vision, taste analyzers, smell, etc.). IN
2. Honey bee immune system. External and internal mechanisms of immune defense, their structure and significance. Features of age-related immunity. The order of selection and transfer of pathological material for laboratory research of diseases of bees.
3. Beehives, buildings and beekeeping equipment. Feeding bees. Different types of hives, the main requirements for them. Inventory, beekeeping buildings. Rules for feeding bees. Carbohydrate-protein, vitamin, mineral fertilizers
4. Toxicosis of bees. Diagnosis, prevention, treatment of chemical toxicosis. Phytotoxicosis. Non-communicable diseases of bees.E
5. Bacteriosis, viruses, mycoses of bees.F
6. Invasive diseases of bees.F
7. Bee products, their use and importance in medicine
8. Rules for selection and transfer pathological material. IS

Self-education work:

9. Diseases of bees that occur as a result of violations of housing conditions.
10. Pests and enemies of bees.
11. Determination of economic losses in bee poisoning.
12. Abnormal phenomena in the bee family (raid, flight, bee wandering, etc.).
13. Putrefactive diseases of bee brood: European, American rot, paraglynitic.
14. Bacteriosis of worker bees: salmonellosis, colibacillosis, hafniosis and others.
15. Viral diseases of bees: saccular brood, acute viral paralysis, chronic viral paralysis, filamentovirus (diagnosis, prevention and control measures).
16. Mycoses of bees: aspergillosis of bees, ascospores of bees, melanosis (diagnosis, prevention and control measures).
17. Little-studied viral diseases of bees.
18. Exotic diseases of bees.
19. Protozoa (nosematosis, amebiasis).
20. Arachnoses (acarapidosis, varroasis), diagnosis, prevention and control measures).
21. Diagnosis, prevention and control of bee pests (insects, birds and animals, pests and enemies of bees).
22. Carrying out disinfection, deratization and disinsection in apiaries.
23. Veterinary and sanitary rules for nomadic beehives.
24. Requirements for labor protection and safety in apiaries.
25. Rules of registration apiaries.
26. Special veterinary and sanitary measures in apiaries.

	<p>27. Veterinary and sanitary requirements for apiaries, winter quarters and honeycombs.</p> <p>29. The procedure for filling in the veterinary-sanitary passport of the apiary.</p> <p>30. Protection of apiaries from pathogens.</p> <p>31. Processing of wax raw materials in apiaries.</p> <p>32. Determination of losses and economic efficiency of measures in bee diseases.</p> <p>33. Instructions for the prevention and elimination of diseases and poisonings of bees.</p> <p>34. Veterinary requirements for import to Ukraine of honey bees, bumblebees, and alfalfa leaf bees.</p> <p>35. Rules of import to Ukraine and export of bees and beekeeping products.</p> <p>36. Veterinary support of beekeeping.</p> <p>37. Law of Ukraine "On Beekeeping"</p>
Literature recommended:	<p>1. Інструкція щодо попередження та ліквідації хвороб і отруєнь бджіл.</p> <p>2. Біологія медоносної бджоли. Вулики, пасічний інвентар і документи обліку на пасіці. (Білоцерків. с.-г. ін-т); Скл.: О.Б. Домбровський, П.Г. Шульга, Д.І. Бондаренко, Г.Г. Сорокун. – Біла Церква, 1993. – 54 с.</p> <p>3. Галатюк О.Є. Хвороби бджіл. // О. Є. Галатюк. - Київ : [б. в.], 2012. - 92 с. - (Бібліотека "Пасіка"; № 1-4, 2012).</p> <p>4. Галатюк О. Є. Хвороби бджіл та основи бджільництва : навч. посіб. // О. Є. Галатюк. - 2-ге вид., виправл. і доповн. - Житомир : Полісся, 2010. - 342 с.</p> <p>5. Достоевський П.П., Нікітін П. Комплекс заходів боротьби з хворобами бджіл. // Ветеринарна медицина України. – 1996. – № 6. – С. 24 – 25.</p> <p>6. Практикум з питань бджільництва та хвороб бджіл/ [Домбровський О.Б., Ярчук Б.М., Тирсін Р.В., та ін.] // Біла Церква, 2002. – 248с.</p> <p>7. Рекомендації з діагностики заразних захворювань бджіл (для спеціалістів ветеринарної медицини, пасічників та студентів факультету ветеринарної медицини)./ Білоцерків. держ. аграр. ун-т. Укл.: І.Ю. Бісюк, Б.М. Ярчук, О.Б. Домбровський та ін. – Біла Церква, 1999. – 28 с.</p>
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self- education	D laboratory	nonclinical with animals F	clinical with animals	G other	H total
16	8	58		4	4		90

Date of the last modification of the program	29.08.2019 р.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	DISEASES OF FUR-BEARING ANIMALS
Teacher	Alexander Dovgal PhD, DVM
Forms of study: Lectures / practical Volume of study loading: EKTS credits - 3 (90 hours) Weekly loading: 2 hours Student attendance: required	
Course and semester in which the discipline is planned to be studied	5 M year, 10 semester
Prerequisites for studying disciplines	Animal anatomy; Cytology, histology, embryology; Animal physiology; Pathological physiology; Veterinary microbiology; Clinical diagnosis and diagnostic imaging, pharmacology and pharmacotherapy; General and special epizootology.
Methods of knowledge control	Modular control, test
Learning outcomes and competencies	<p>The result of teaching the discipline is the acquisition by students of the following knowledge and skills:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - know the etiology, pathogenesis and epizootology of infectious diseases of fur animals, including cross-border in accordance with the requirements of the OIE, the basics of keeping and exploitation of animals; - have professional knowledge and understanding of the main provisions of international and European legislation on the welfare of fur animals; - know the features of the biology of fur animals; - know the epizootology, treatment and prevention of infectious diseases of fur animals <p>Skill:</p> <ul style="list-style-type: none"> - have methods of clinical and laboratory research to monitor the health of animals and control the implementation of measures for the treatment of sick animals and prevention of animal diseases of various etiologies; - be able to take, preserve, package and send samples of animal, plant and biotechnological origin for research, to conduct veterinary accounting, to prepare reporting documentation; - be able to identify the sources of the pathogen, determine the factors and mechanism of their transmission; to provide isolated keeping of sick and suspected animals with infectious diseases; carry out forced vaccinations of animals in disadvantaged and endangered service areas; take measures aimed at preventing the spread of the infectious agent outside the epizootic outbreak and the elimination of the outbreak itself; not to allow people with zoonoses to take care of animals; - have a methodology for conducting epizootological, parasitological, chemical-toxicological, radiological, sanitary

	<p>and hygienic studies to diagnose animal diseases of non-communicable, infectious and invasive etiology using instrumental and laboratory methods; analyze the results of the study of biological material; interpret the results of research taking into account the achievements of science and practice;</p> <ul style="list-style-type: none"> - have generally accepted methods of clinical and laboratory research to control the health of animals and compliance with the order of production and circulation of food products from animals treated and preventive treatments, in accordance with the concept of "Single Health"; - be able to organize the rehabilitation of livestock facilities by chemical, biological and physical methods and control it; - be able to operate with the basic concepts of biosafety, biosecurity, have the basics of bioethics; analyze current and current ethical issues in the biotechnology and pharmaceutical industries; analyze the causes of epizootic situations and infectious diseases that appear in recent years.
Description of the discipline	
The base of the discipline	Classrooms, laboratory of the department, interdepartmental clinics and farms of the research farm of the university, farms of agricultural enterprises.
Topics of classroom lessons	<p>Lecture topics:</p> <p>Topic 1. Veterinary and sanitary requirements for animal farms.</p> <p>Topic 2. Biological features of fur animals.</p> <p>Topic 3. Carnivorous plague.</p> <p>Topic 4. Infectious carnivorous hepatitis</p> <p>Topic 5. Myxomatosis.</p> <p>Topic 6. Botulism.</p> <p>Topic 7. Salmonellosis</p> <p>Topic 8. Leptospirosis.</p> <p>Topics of practical classes:</p> <p>Topic 1. The main species of fur-bearing animals bred in animal farms.</p> <p>Topic 2. Biological features of fur animals of the canine family.</p> <p>Topic 3. Infectious hepatitis of carnivores</p> <p>Topic 4. Aleutian mink disease</p> <p>Topic 5. Viral hemorrhagic disease of rabbits</p> <p>Topic 6. Enterotoxemia</p> <p>Topic 7. Colibacillosis.</p> <p>Topic 8. Listeriosis.</p> <p>Topics of self-education classes:</p> <p>Topic 1. General problems of fur animal husbandry. Subject and objectives of the course. Fur farming as an industry.</p> <p>Topic 2. The main species of fur-bearing animals bred in animal farms.</p> <p>Topic 3. Veterinary and sanitary requirements for animal farms.</p> <p>Topic 4. Biological features of fur animals of the canine family.</p>

	<p>Topic 5. Species of foxes. Basic breeding and cultivation of foxes. Features feeding of young animals. Origin and breed of polar fox and raccoon dog.</p> <p>Topic 6. Biological features of fur animals of the marten family</p> <p>Topic 7. Breeding, keeping and growing young. Breeding, keeping and growing mink and polar fox.</p> <p>Topic 8. Biological features of fur animals of the rodent family.</p> <p>Topic 9. Growing rabbits and awl tires. Disease prevention measures on rabbit farms. The main diseases of rabbits and chinchillas</p> <p>Topic 10. Slaughter of fur-bearing animals. Methods of slaughter fur animals. Primary processing of skins. Ways to remove skins from different species of fur animals.</p> <p>Topic 11. Carnivorous plague.</p> <p>Topic 12. Infectious hepatitis of carnivores</p> <p>Topic 13. Enzootic encephalomyelitis</p> <p>Topic 14. Myxomatosis.</p> <p>Topic 15. Encephalopathy of mink</p> <p>Topic 16. Aleutian mink disease</p> <p>Topic 17. Viral hemorrhagic disease of rabbits</p> <p>Topic 18. Smallpox.</p> <p>Topic 19. Infectious rhinotracheitis.</p> <p>Topic 20. Epizootic catarrhal gastroenteritis of mink.</p> <p>Topic 21. Aujeszky's disease.</p> <p>Topic 22. Botulism.</p> <p>Topic 22. Botulism.</p> <p>Topic 23. Enterotoxemia</p> <p>Topic 24. Colibacillosis.</p> <p>Topic 25. Salmonellosis</p> <p>Topic 26. Pseudomonas</p> <p>Topic 27. Brucellosis.</p> <p>Topic 28. Tuberculosis.</p> <p>Topic 29. Leptospirosis.</p> <p>Topic 30. Listeriosis.</p> <p>Topic 31. Tularemia.</p> <p>Topic 32. Pasteurellosis.</p> <p>Topic 33. Diplococosis.</p> <p>Topic 34. Staphylococcus.</p> <p>Topic 35. Streptococcosis.</p> <p>Topic 36. Pseudotuberculosis.</p>
Language of instruction	Ukrainian.
Literature recommended	<ol style="list-style-type: none"> 1. Сімоненко М.В., Ярчук Б.М. Хворобихутровихзвірів (діагностика, профілактика, заходи боротьби): Навчальний посібник. – Біла Церква, 4006.– 160 с. 2. Інфекційні та інвазійні хвороби кролів / Л.Є. Корнієнко, О.Б. Домбровський, С.І. Пономар, А.А. Антіпов.– Біла Церква, 4003.– 488 с. 3. Хворобихутровихзвірів: Методичні вказівки для забезпечення самоїї роботи студентів з модуля

	<p>«Профілактика хвороб хутровихзвірів» /М.В. Сімоненко, П.Г. Шульга, О.В. Довгаль.–БілаЦерква, 2004.– 14 с.</p> <p>4. Біологія та основніхворобинутрій і ондатр: Методичнірекомендації для студентів факультету ветеринарноїмедицини та слухачівІнститутупіслядипломногонавчання / Білоцерків. держ. аграр. ун-т; Скл.: М.В. Сімоненко, Б.М. Ярчук.– БілаЦерква, 2000.– 44 с.</p> <p>5. Профілактика хвороб нутрій та ондатр: Методичнірекомендації для студентів факультету ветеринарноїмедицини та слухачівІнститутупіслядипломногонавчання / М.В. Сімоненко, Б.М. Ярчук, М.М. Сімоненко.–БілаЦерква, 2004.–55 с.</p>
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The structure of the discipline by type of occupation

A lectures	B seminars	C Self- education	D laboratory	E non- clinical with animals	F Clinical with animals	G other	H total
16	8	58		4	4		90

Date of last modification of the program	18.06.2020 p.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subjects	DISEASES OF FISH
Teachers	Vladimir Dzhmil, PhD, DVM;
Forms of study: Lectures / practical Volume of study load: ECTS credits - 3 (90 hours); Weekly workload: 10 semester - 2 (1/1) Student attendance: required	
Course and semester in which the discipline is planned to be studied	5 course, 10 semester
Prerequisites for studying the discipline	"Animal Anatomy", "Animal Hygiene", "Veterinary Microbiology", "Veterinary Toxicology", "Epizootology, Infectious Diseases and Preventive Medicine", "Parasitology and Invasive Diseases"
Methods of knowledge control	Test
Learning outcomes and competencies	Learning outcomes defined by the Standard of Higher Education of Ukraine for the specialty 211 "Veterinary Medicine": PH1, PH4, PH6, PH17, PH18.

	<p>Students must know and be able to: Knowledge:</p> <ul style="list-style-type: none"> • causes of diseases and poisonings of aquatic organisms and general principles of their prevention and elimination; • methods of conducting diagnostic tests of fish and other aquatic organisms; • general rules of control over the epizootic and sanitary condition of fishery reservoirs; • basics of planning preventive and health-improving measures in fisheries; • basics of veterinary and sanitary rules of design and construction of fisheries; • general rules and procedures for veterinary supervision of the transportation of fish within the country, the export and import of fish for breeding and acclimatization, as well as use for food or feed purposes; • basics of sanitary quality control of cultivated and caught aquatic organisms; • requirements and rules for registration and issuance of relevant documents for the sale of fish and other aquatic organisms. <p>Skill:</p> <ul style="list-style-type: none"> • plan preventive and health measures in fisheries; • to conduct epizootological research of fish farming; and clinical trial • conduct a clinical study of fish; • conduct parasitological examination of fish; • perform pathological autopsy of fish; • make a preliminary diagnosis of fish disease; • take blood and other pathological material for examination; • determine the extent and intensity of invasion in parasitic diseases of fish; • use drugs in individual and group treatment of fish; • to carry out differential diagnosis of fish poisoning from other diseases; • to conduct organoleptic research of fish with the aim of determining its quality.
Description of the discipline	
The base of the discipline	Auditoriums, Research Laboratory of Veterinary Sanitary Examination and Hygiene of Livestock Products of BNAU, rates of NVC BNAU, state laboratories of veterinary and sanitary examination in the markets
Topics of classes	<ol style="list-style-type: none"> 1. Introduction. History of formation, current state and prospects of ichthyopathology as a science, its role and place in the fish industry. The contribution of domestic scientists in the development of ichthyopathological research. Tasks and content of the discipline. 2. Characteristics of pond fish farms 3. Growing carp and herbivorous fish by artificial method. 4. Characteristics of fish farms. Types, systems, revolutions. 5. Ways to intensify fish farming. 6. General information about fish diseases. Classification of fish diseases. 7. Prevention of nutritional diseases of fish and poisoning. 8. Enemies, fish pests and ways to control them.

	<ol style="list-style-type: none"> 1. Anatomy of fish. Anatomical structure of predatory and peaceful fish, methods of complete parasitological dissection of fish. 2. Methods of diagnosing fish diseases. 3. Preventive and veterinary-sanitary measures in fish farms. 4. General measures to combat fish diseases and rehabilitation of fish farms. 5. Infectious diseases of fish. 6. Invasive fish diseases. 7. Non-communicable diseases of fish. 8. Toxicosis of fish.
Recommended Books:	<ol style="list-style-type: none"> 1. Микитюк П.В., Якубчак О.М. Хвороби прісноводних риб. - К.: Урожай, 1992.-160 с. 2. Справочник по болезням прудовых рыб / П.В. Микитюк, Е.Ф. Осадчая, Т.П. Погорельцева и др.; Под ред. П.В. Микитюка. - К.: Урожай, 1984.-248 с. 3. Лабораторний практикум з біології, патології та ветсанекспертизи прісноводних риб // П.В. Микитюк, В.В. Просяна, П.В. Букалова; Під ред. П.В. Микитюка. - Біла Церква, 1994- 121 с (Учбовий посібник). 4. Ветеринарно-санитарная экспертиза пресноводной рыбы: Справочник / П.В. Микитюк. П.В Житенко- В.С. Осетров и др.; Пол ред. П.В. Микитюка. - М.: Агропромиздат, 1989. 207 с. 5. Атлас промислових риб України / М.В. Гринжевський, С.І. Алимов, М.С.Ківа, П.В. Микитюк, В.І. Джміль та ін. – К.: КВЦ, 2005. – 95 с. 6. Практикум з ветеринарно-санітарної експертизи з основами технології та стандартизації продуктів тваринництва і рослинництва. – Київ: «Ветінформ», 1998. – 240 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Diseases of fish	16	16	58			-	-	270 (Зкредити)

A: lectures; B: seminars; C: controlled self-study; D: laboratory and descriptive work, E: non-clinical work on animals; F: clinical work on animals; G: others (specify); H: together

Date of the last modification of the program	26.03.2021 p.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Name of the faculty: Faculty of Veterinary Medicine	CLINICAL VETERINARY PHARMACOLOGY

Teachers	Rublenko Serhiy Vasyliovych Doctor of Veterinary Sciences, Professor of the Department of Parasitology and Pharmacology Avramenko Natalia Vladimirovna, Koziy Natalia Vladimirovna, Shaganenko Raisa Vladimirovna Candidates of Veterinary Sciences, Associate Professors of the Department of Parasitology and Pharmacology
Forms of study: Lectures / practical Volume of study load: EKTS credits - 3 (90 hours); Weekly load: Student attendance: required	
Course and semester in which the discipline is planned to be studied	6M course
Prerequisites for studying the discipline	Pharmacology and pharmacotherapy, Internal non-communicable diseases, Surgery, Epizootology, Parasitology
Learning outcomes and competencies	Learning outcomes defined by the Standard of Higher Education of Ukraine for the specialty 211 "Veterinary Medicine": PH4, PH7, PH15.
List of competencies and relevant learning outcomes provided by the discipline	Students must know and be able to: Knowledge nomenclature of modern drugs for veterinary medicine; ways of introduction into an organism and features of absorption, biotransformation and allocation from an organism of medicinal substances at various pathology; the mechanism of local, reflex and resorptive action of drugs on the body of animals, pathogens of parasitic and infectious diseases; indications and contraindications to the use of drugs, taking into account the type, age, sex of the animal and the specific pathology; methods of prescribing, toxic and adverse side effects in each case; treatment for poisoning in case of overdose; Skill calculate the dose and determine the frequency of drug administration to a sick animal; determine the therapeutic efficacy of drugs combining drugs of different groups for a specific pathology use etiologic, pathogenetic and symptomatic therapy
Description of the discipline	
The base of the discipline	Audiences. Interdepartmental clinics and farms of the research farm of the university.
Topics of classroom classes	Lecture topics 1. Clinical pharmacology. Subject and tasks of clinical pharmacology. Pharmacodynamics and pharmacokinetics of drugs. Interaction of drugs. Side effects of drugs. 2. Pharmacokinetics of drugs depending on their properties, method of drug use, physiological features of the organism and its functional state.

	<p>3-5. Rational use of chemotherapeutic substances for certain diseases</p> <p>6-7. Characteristics of medicinal substances by action on various organs and systems and justification for their use in certain pathologies</p> <p>Topics of laboratory classes</p> <p>1-2. Types of action of medicinal substances. Factors influencing the manifestation of the pharmacological effect of drugs.</p> <p>3. Fundamentals of pharmacokinetics of drugs in different species of animals depending on the physiological and pathological condition</p> <p>4-6. Chemotherapeutic agents - classification of properties, features of use in veterinary medicine.</p> <p>7. Pharmacotherapy for disorders of the central nervous system.</p> <p>8. Clinical pharmacology of drugs for respiratory diseases.</p> <p>9. Clinical pharmacology of drugs for diseases of the digestive system</p> <p>10. Clinical pharmacology of drugs for diseases of the uterus, ovaries and breast.</p> <p>11. Clinical pharmacology for diseases of the urinary system</p> <p>12. Clinical pharmacology for surgical pathology</p> <p>13. Pharmacotherapy for parasitic diseases</p> <p>14. Treatment of drug poisoning</p>
Recommended Books	<p>1. Veterinary drugs. Directory. / Kanyuka O.I., Khariv I.I., Gunchak V.M., Gufriy D.F. – Lviv. - Publishing House PE "Bodlak", 2005. - 642 p.</p> <p>2. Clinical veterinary pharmacology / ed. O.I. Buzzards. - O . Astroprint, 2011. - 296 p.</p> <p>3. Veterinary Pharmacology and Therapeutics, 10th Edition / Jim E. Riviere (Editor), Mark G. Papich (Editor). - 2017, Wiley-Blackwell. - 1552 p.</p> <p>4. Khmelnytsky G.O., Dukhnitsky V.B. . Veterinary pharmacology. □ Kyiv, 2017. - 571p</p> <p>5. Modern course of veterinary medicine Kirk / trans. with eng. - M .: OOO «Aquarium Print», 2005. - 1376 p .: il</p>
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Clinical pharmacology	14	10	48	10	8	-	-	90 (3 credit)

Date of the last modification of the program	28.08.2019.
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Name of the university: Bila Tserkva National Agrarian University

Name of the faculty: Faculty of Veterinary Medicine	
Subjects	LABORATORY DIAGNOSTICS
Teachers	Iryna Rublenko, doctor habilitated, DVM (guarantor); Andriy Andriychuk, PhD, DVM; Vladimir Zotsenko, PhD, DVM, Vovkotrub Natalia, PhD, DVM (laboratory diagnostics (chemical and toxicological research methods), Volodymyr Shaganenko PhD, DVM (laboratory diagnostics of parasitic diseases); Natalia Tyshkivska and Oksana Khitska PhD, DVM (laboratory research in food hygiene); Taras Tsarenko Ph DVM (epizootology and system of diagnostic procedures)
Forms of study: Lectures / practical Volume of study load: ECTS credits - 7 (210 hours); Weekly workload: 11.12 semester - 4 (1/3) Student presence: selective	
Course and semester in which the subject is planned to be studied	6 course, 11.12 semester
Prerequisites for studying the discipline	"Animal Anatomy", "Cytology, Histology, Embryology", "Animal Physiology", "Cell Genetics and Molecular Biology", "Veterinary Microbiology", "Animal Physiology", "Veterinary Microbiology and Immunology", "Food Safety, Food Quality and feed "" epizootology, infectious diseases and preventive medicine ", "veterinary toxicology ", " food hygiene and state control ", " organization of veterinary service and public health ", " zoonoses and the concept of single health "
Methods of knowledge control	Test, exam
Conditions for taking the course	Pregnant students may not attend this course
Learning outcomes and competencies	The result of teaching the discipline is that students receive the following knowledge and skills: Students knowledge and skills: Knowledge: Organization and activity of laboratories. The structure of the laboratory service of Ukraine. Interlaboratory comparative tests. Study of biosafety issues, biorisks, SOPs. The use of laboratory animals in experiments. Programs, regulations and laws of laboratory work in the study of microbiological indicators. Laboratory equipment for safety. Knowledge and application of rules on laboratory biosafety. International standards of bacteriological research methods. Methods of bacterial storage. Chromatogenic media. Preparation of chromogenic nutrient media for cultivation of microorganisms of different nosological groups, their sterilization and determination of pH. Skills: to prepare, process samples of biological and pathological material of animals, products of animal origin, fodder, soil, water, plants; dispose of waste, spent samples, materials and reagents. Disinfect laboratory utensils, tools, overalls, biological material, laboratory equipment. Determine the quality of disinfection and sterilization. to determine the sanitary condition of laboratory premises. to carry out ELISA staging. Conduct diagnostic studies of environmental objects and in the diagnosis of infectious animal diseases.
Description of the subjects	
The base of the discipline	Auditorium and laboratory of the department, research laboratories of BNAU, public and private laboratories of Kyiv region, museum and laboratory of the Department of Parasitology and Pharmacology, Interdepartmental clinics and farms of the research farm of the university, public and private clinics for companion animals, farms of agricultural enterprises

<p>Topics of classroom lessons</p>	<p>Lecture topics: Module 1. Organization of laboratories (I. Rublenko, V. Zotsenko, A. Andriychuk)</p> <p>1. Laboratory pathogenicity groups, structure, rules of operation, safety in different groups and personal prevention, classification. Knowledge and application of rules on laboratory biosafety, risk management. Workplace equipment. Determining the rules of utilization of waste, spent samples, materials and reagents.</p> <p>Module 2. General issues of microbiology in the laboratory (I. Rublenko, V. Zotsenko, A. Andriychuk).</p> <p>1. Programs, regulations and laws of laboratory work in the study of microbiological indicators and especially dangerous pathogens.</p> <p>Module 3. Laboratory diagnostics of bacteriological and viral research methods (I. Rublenko, V. Zotsenko, A. Andriychuk)</p> <p>1. Code of ethics for employees of diagnostic laboratories. Use of electronic (computer) laboratory information systems.</p> <p>2. Acquaintance and use of rapid tests for isolation and identification of pathogens.</p> <p>Module 4. Use of diagnostic tests in the system of anti-epizootic measures (T. Tsarenko)</p> <p>1. Selection and interpretation of diagnostic tests in epizootological research.</p> <p>2. The system of diagnostics of infectious diseases of animals in ensuring epizootic well-being.</p> <p>4. Module 5. Laboratory research in food hygiene (O. Khitska, N. Tyshkivska).</p> <p>1. Organization of activities and operation of laboratories. International standard ISO 17025. Management of laboratory work. Technical requirements for the laboratory.</p> <p>2. Procedures for confirming the effectiveness (quality) of laboratory diagnostics: internal and cross-audit; verification (verification), validation (confirmation); providing a system of quality control of research (intra-laboratory and inter-laboratory control). MPV (interlaboratory comparative tests).</p> <p>Module 6. Chemical and toxicological methods of disease diagnosis (N. Vovkotrub)</p> <p>1. Organization of work of chemical and toxicological departments of veterinary medicine laboratories (according to the requirements of DSTU: ISO 17025).</p> <p>2. Objects of toxicological and biochemical research. Methods of isolation of toxic substances from various objects of veterinary control (pathological material).</p> <p>Module 7. Diagnosis of parasitic diseases (V. Shaganenko)</p> <p>1. Introduction. Special helminthological researches in practice of the veterinarian. Lesions of organs and systems in parasitic diseases. Diagnostic signs of helminth eggs, joints and helminth larvae.</p> <p>2. Diagnostic signs of causative agents of acarosis and entomoses of animals. Diagnostic signs of pathogens of protozoa in animals and birds, informativeness of microscopic research methods.</p> <p>Topics of practical classes:</p> <p>Module 1. Organization of laboratory activities (I. Rublenko, V. Zotsenko, A. Andriychuk)</p> <p>1. Interlaboratory comparative tests. Study of biosafety issues, biorisks, SOPs. (E)</p> <p>2. Microscopy of bacteria of different nosological groups. Production of smear preparations, imprint preparations from cultures of microorganisms and test material. Preparation of dyes, features of staining of different nosological groups. (IS)</p>
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	<p>3. Preparation and principles of processing samples of biological and pathological material of animals, products of animal origin, feed, soil, water, plants. Sanitary condition of laboratory premises. (IS)</p> <p>4. Methods of studying the mobility of different taxonomic groups of microorganisms. Quality control of disinfection and sterilization of boxes, equipment, etc. (IS)</p> <p>5. Workshop (B)</p> <p>Module 2. General issues of microbiology in the laboratory (I. Rublenko, V. Zotsenko, A. Andriychuk).</p> <p>6. Devices for ELISA. Measuring and auxiliary equipment for ELISA. Classification of ELISA methods. The main stages of ELISA. Possible errors during ELISA. Evaluation of ELISA results. The principle of implementation, advantages, disadvantages, analytical characteristics. (E, D)</p> <p>7. Methods of detection and identification of infectious agents (fungal bacteria, viruses) in the air. (IS)</p> <p>8. Methods of detection and identification of infectious agents (fungal bacteria, viruses) in water. (IS)</p> <p>9. Methods of detection and identification of infectious agents (bacteria, fungi) in the soil. (IS)</p> <p>10. Workshop (B)</p> <p>Module 3. Laboratory diagnostics of bacteriological and viral research methods (I. Rublenko, V. Zotsenko, A. Andriychuk)</p> <p>11. Laboratory research methods in the diagnosis of infectious diseases of cattle. (ED)</p> <p>12. Laboratory research methods in the diagnosis of infectious diseases of pigs. (ED)</p> <p>13. Laboratory methods for diagnosing infectious diseases of birds. (ED)</p> <p>14. Laboratory research methods in the diagnosis of infectious diseases of horses. (E)</p> <p>15. Laboratory research methods in the diagnosis of infectious diseases of sheep. (E)</p> <p>16. Laboratory methods for diagnosing infectious diseases of dogs. Laboratory methods for diagnosing infectious diseases of cats. (E)</p> <p>17. Laboratory methods for diagnosing infectious diseases of laboratory animals. (E)</p> <p>18. Laboratory methods for diagnosing infectious diseases of exotic animals. (E)</p> <p>19. Laboratory methods for diagnosing infectious diseases of fish. Laboratory methods for diagnosing infectious diseases of insects. Determination of the quality of veterinary immunological agents (vaccines, sera)</p> <p>20. Workshop (B)</p> <p>Module 4. Use of diagnostic tests in the system of anti-epizootic measures (T. Tsarenko)</p> <p>1. Regulating the use of research methods in epidemiological studies at the international and national levels (D).</p> <p>2. The choice of research methods to ensure epizootic well-being, calculation of the effectiveness of diagnostic tests (D).</p> <p>3. Diagnostic procedures during the epizootic investigation (D).</p> <p>4. Seminar (B).</p> <p>5. Module 5. Laboratory research in food hygiene (O. Hitska, N. Tyshkivska)</p> <p>1. Laboratory methods of control of residues of contaminants, toxicants and veterinary drugs in food (D).</p> <p>2. Use of ELISA to control hazardous factors and food adulteration. Determination of residual amount of antibiotics and antibacterial substances in food (E).</p>
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	<p>3. Control of food safety and naturalness by molecular genetic research (PCR) (D).</p> <p>4. Seminar (B).</p> <p>Module 6. Chemical and toxicological methods of disease diagnosis (N. Vovkotrub)</p> <p>1. Monitoring of laboratory research methods. Material selection procedures for chemical and toxicological research. Influence of drugs on the results of biochemical studies.</p> <p>2. Physical and physico-chemical principles of equipment use in clinical laboratory practice.</p> <p>3. Development of methods for bioassays to determine the toxicity of substances of animal and plant origin.</p> <p>4. Seminar (B).</p> <p>Module 7. Diagnosis of parasitic diseases (V. Shaganenko)</p> <p>1. Laboratory diagnosis of helminthiasis. Faecal sampling and delivery to the laboratory. Methods of native smear, sedimentation, flotation.</p> <p>2. Methods of helmintholaryoscopy. Staining and identification of larvae of helminthic pathogens Laboratory diagnosis of pulmonary helminthiasis</p> <p>3. Vital and mortal methods of diagnosis of animal acarosis. Laboratory diagnostic tests for protozoa of animals.</p> <p>4. Seminar (B).</p>
<p>recommended literature:</p>	<ol style="list-style-type: none"> 1. Головка А.М. Ветеринарна санітарна мікробіологія Навчальний посібник // А.М. Головка, І.О. Рубленко. – Київ: Аграрна освіта, 2010. – 284 с. 2. Tackling drug-resistant infections globally: final report and recommendations. 2016. – 84p. https://amr-review.org/sites/default/files/160518_Final%20paper_with%20cover.pdf 3. Лабораторна ветеринарна токсикологія: Навч. посібник / [В.І. Левченко, А.В. Розумнюк, Ю.М. Новожицька та ін.]. – Біла Церква, 2012. – 216 с. 4. Лабораторне дослідження крові тварин та інтерпретація його результатів / [Левченко В.І, Головаха В.і., Сахнюк В.В та ін.]; За ред. В.І. Левченка і В.М. Безуха. – Біла Церква, 2015. – 136 с. 5. Уиллард Майкл Д. Лабораторная диагностика в клинике мелких домашних животных / Майкл Д. Уиллард, Гарольд Тверден, Торнвальд Грант Г. – М.: ООО "Аквариум Бук", 2004. – 432 с. 6. Методи лабораторної клінічної діагностики хвороб тварин / [Левченко В.І., Головаха В.І., Кондрахін І.П. та ін.]; За ред. В.І. Левченка. – К.: Урожай, 2010. – 470 с. 7. Veterinary clinical parasitology / Anne M. Zajac, Gary A. Conboy. – Blackwell Publishing, 2011. – 8th ed. – 368 p. 8. Veterinary parasitology / M.A. Taylor, R.L. Coop, R.L. Wall // Blackwell Publishing. – Carlton, 2015. – 4th ed. – 1029 p. 9. Довідник з диференціювання збудників інвазійних хвороб / Пономар С.І., Гончаренко В.П., Соловійова Л.М. ; за ред. С.І. Пономаря. – К.: Аграрна освіта, 2010. – 237 с. 10. Veterinary Epidemiology 4th ed. Michael Thrusfield. John Wiley & Sons, 19 лют. 2018 р. - 888 стор. 11. Epidemiology for Field Veterinarians: An Introduction. Evan Sergeant, Nigel Perkins. CABI, 28 лип. 2015 р. - 319 стор. 12. Animal Disease Surveillance and Survey Systems: Methods and Applications. by Mo Salman. November 2003. 13. ДСТУ ISO/IEC 17025:2017 Загальні вимоги до компетентності випробувальних та калібрувальних лабораторій

	<p>14. ДСТУ ISO 19011:2012 Настанова щодо здійснення аудитів систем управління — міжнародний стандарт, котрий має настанови з аудиту системи управління підприємства.</p> <p>15. ДСТУ ISO 10012: 2005 “Вимоги до процесів вимірювання та вимірювального обладнання”</p> <p>16. ДСТУ 2708 «Метрологія. Повірка засобів вимірювальної техніки. Організація і порядок проведення»</p>
Language	Ukrainian

The structure of the subject

Subjects	A	B	C	D	E	FX	G	H
	26	14	106	31	33	-	-	210 (7 cr.)
Laboratory diagnostics	4	2	18	2	4	-	-	Epizootol. 30 (1 cr)
	4	2	18	2		4	-	Parasitology 30 (1 cr)
	8	6	42	17	17	-	-	Microbiol. 30 (1 cr)
	4	2	18	2	4	-	-	VSE
	4	2	18	6		-	-	THERAPY30 (1cr)

Date of the last modification of the curriculum	Developed for the first time for 2020-2021 academic year.
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The university name: Belotserkovsky national agrarian university	
The faculty name: Faculty of veterinary medicine	
The discipline name	ILLNESSES OF LABORATORY ANIMALS
Teachers	Shaganenko V. S PhD, DVM; Tsarenko T. M PhD, DVM; Новік О, DVM; Miller A.Ю. PhD, DVM; Сакара В, the master, DVM; Vlasenko S. A, the doctor габілітований, DVM; Єрошенко Island B PhD, DVM; Андр і є ць Century Г PhD, DVM; Utechenko M. V PhD, DVM.
Study forms: Lectures / Practical	
About ' єм an academic load: credits ECTS - 7 (210 year.);	
Week loading: 4 (1/3)	
Presence of the student: the selective	
Course and semestre in which discipline studying is planned	6M a course, 11-12 semestre
Preconditions of studying of discipline	"" Anatomy of animals "," Cytology, histology, эмбриология "," Animal physiology "," Genetics and molecular cytobiology "," Veterinary microbiology "," Animal physiology "," Veterinary microbiology and immunology "," Carelessness, quality of foodstuff and forages "" Epizootologija, infectious diseases and preventive medicine "," Veterinary toxicology "," the Organization of veterinary service and public health services

	public "," Zoonozy and the concept of unique health "," Veterinary clinical biochemistry "," Propaedeutics and diagnostic visualisation "," Veterinary toxicology "Pharmacology and pharmacotherapy", "Parasitology and інвазійні illnesses"
Quality monitoring of knowledge	Offset, examination
Results of study and competence	<p>The results of study defined by the Standard of higher education of Ukraine for a speciality 211 "Veterinary medicine": PH1, PH9, PH10, PH11, PH12.</p> <p>Students owe to the nobility and be able:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> – The nobility of feature of a structure of an organism for norms and possible changes of the form and a structure of bodies for pathologies, and also morfo - physiologic features of reproductive function of laboratory animals; – The nobility of feature of the maintenance, methods of clinical research, treatment and preventive maintenance of internal noncontagious illnesses of laboratory animals; – The knowledge of an aetiology, патогенеза, эпизоотологии infectious and інвазійних diseases of laboratory animals, in particular the transboundary agrees requirements OEI and principles ерадикации flashes of infectious diseases among laboratory animals. <p>Ability:</p> <ul style="list-style-type: none"> – To lead selection, conservation, packing and transfer of samples of an animal origin for researches for infectious, інвазійних and internal noncontagious illnesses to spend некропсію the lost laboratory animals, to conduct the veterinary account, to make out the accounting documentation; – To analyze and interpret results of laboratory researches for infectious, інвазійних and internal noncontagious illnesses of laboratory animals, inclusive with results of a pathoanatomical section, taking into account science and practice achievements; – To be able to spend medical and diagnostic manipulations, at internal noncontagious illnesses and sampling at clinically healthy laboratory animals; – To be able to spend акушерское, gynecologic research to carry out control and stimulation of reproductive function at females of laboratory animals, and for a pathology establishment to give adequate treatment; – To reveal sources of activators of infections and инвазии laboratory animals, to define factors and the mechanism of their transfer; to provide the isolated maintenance of sick animals; to carry out come, the distributions of activators directed on a non-admission infectious and інвазійних diseases of laboratory animals for limits эпизоотического the centre and liquidation of the centre.
The discipline description	

The base of carrying out to occupy from discipline	Audiences and laboratories of chairs of faculty of veterinary medicine, Intercathedral clinics of university, the state and private clinics for tvarin - partners, виварий.
With those аудиторных to occupy	<p>That of lectures:</p> <p>The module 1. Інвазійні illnesses of laboratory animals (Shaganenko V. S PhD, DVM)</p> <ol style="list-style-type: none"> 1. The introduction. Інвазійні diseases кролей. Features of diagnostics, treatment and preventive maintenance. 2. Інвазійні diseases мурчаків, rats and the mouse. Features of diagnostics, treatment and preventive maintenance. <p>The module 2. Infectious diseases of laboratory animals (Tsarenko T. M PhD, DVM; Новік О, DVM)</p> <ol style="list-style-type: none"> 1. Features эпизоотологии illnesses of laboratory animals. 2. Bacterial, virus and fungoid illnesses of laboratory animals: prevention and control. <p>The module 3. Internal illnesses of laboratory animals (Miller А.Ю. PhD, DVM; Сакара В, the master, DVM)</p> <ol style="list-style-type: none"> 1. Internal illnesses of laboratory animals are caused by metabolism and feeding infringement. 2. Internal illnesses of laboratory animals are caused by infringement of minds of the maintenance. Introduction of the documentation on work with laboratory animals. <p>The module 4. Features of a reproduction of laboratory animals (Vlasenko S. A, the doctor габілітований, DVM; Єрошенко Island В PhD, DVM.)</p> <ol style="list-style-type: none"> 1. Features of a reproduction кролей. 2. Features of a reproduction мурчаків and the mouse. <p>The module 5. Features of surgical maintenance at laboratory animal (Andr і є ць Century Г PhD, DVM.)</p> <ol style="list-style-type: none"> 1. Topographical anatomy and анестезиологическое maintenance of operative interventions at laboratory animals (local and general anaesthesia, инфузионная therapy and реанимационные come). 2. Traumatism preventive maintenance at stressful conditions at laboratory animals. Use of principles of well-being for preventive maintenance of illnesses and reduction of quantity of cases of a traumatism. <p>The module 6. Pathological anatomy of laboratory animals (Utechenko M. V PhD, DVM.)</p> <ol style="list-style-type: none"> 1. General characteristic and анатомо - physiologic features of laboratory animals (беспозвоночных and хребетных). 2. Biosafety. Pathological anatomy of laboratory animals.
	<p>With those practical to occupy:</p> <p>The module 1. Інвазійні illnesses of laboratory animals (Shaganenko V. S PhD, DVM)</p> <ol style="list-style-type: none"> 1. Фасциольоз, diagnostics, treatment and preventive maintenance. 2. Ларвальні цестодоз. Эхинококкоз and цистицеркоз пізіформний. 3. Трихостронгілidoзи кролей 4. Псороптоз кролей. 5. Еймеріоз кролей 6. Seminar

7. Нематодозы мурчаків (Paraspidodera uncinata, Trichuris gracilis)
 8. Саркоптоз мурчаків (Trichicarus cavia)
 9. Нематодозы the mouse and rats (гіменолепідоз, оксиуратози)
 10. Еймеріоз мурчаків, rats and the mouse
 11. Seminar
- The module 2. Infectious diseases of laboratory animals (Tsarenko T. M PhD, DVM; Новік О, DVM)**
1. Епізоотологічні Features of infectious diseases at laboratory animals. The organisation противоепизоотических actions among laboratory animals.
 2. Bacterial illnesses of laboratory animals.
 3. Virus illnesses of laboratory animals.
 4. Fungoid illnesses of laboratory animals.
 5. Seminar.
- The module 3. Internal illnesses of laboratory animals (Miller А.Ю. PhD, DVM, Sakara B, the master, DVM)**
1. Features of clinical research, selection of blood and introduction of medical products at laboratory animals.
 2. Illnesses are caused by infringement витаминно - a mineral exchange in laboratory animals.
 3. Illnesses сечовидільно ї systems at laboratory animals.
 4. A morphological and biochemical blood test of laboratory animals.
 5. A seminar
- The module 4. Features of a reproduction of laboratory animals (Vlasenko S. A, the Dr. габілітований, DVM; Єрошенко Island B PhD, DVM.)**
1. Pregnancy diagnostics, control over its course;
 2. Pathology of sorts and рододопомога;
 3. Diagnostic algorithm and features of therapy for акушерских, гynecologic and андрологічних illnesses at кролей.
 4. Diagnostic algorithm and features of therapy for акушерских, гynecologic and андрологічних illnesses мурчаків and the mouse
 5. Seminar
- The module 5. Features of surgical maintenance at laboratory animal (Andr і є ць Century Г PhD, DVM.)**
1. Anesteziologicheskyy maintenance, реанимационные come also monitoring of the anaesthetised laboratory animals.
 2. Surgery of soft fabrics, treatments of wounds at laboratory animals
 3. Ways of diagnostics, treatment and preventive maintenance bone - an articulate pathology at laboratory animals
 4. Surgical methods of treatment of a pathology of urinogenital system at laboratory animals
 5. Seminar
- The module 6. Pathological anatomy of laboratory animals (Utechenko M. V PhD, DVM.)**
1. General characteristic беспозвоночных and позвоночных laboratory animals. Features of their structure. Safety precautions under an hour of research.
 2. morfo - Functional features of an organism беспозвоночных.
 3. morfo - Functional features хребетних.

	<p>4. Лабораторні An animal: their topographical anatomy of an internal and feature patologo - anatomic diagnostics.</p> <p>5. Seminar</p>
The recommended literature:	<p>1. Fox, James G. Laboratory animal medicine. Elsevier, 2015.</p> <p>2. Laboratory Animal Medicine (Third Edition) American College of Laboratory Animal Medicine 2015, P 411-461.</p> <p>3. Nicklas, Werner. "Infections in laboratory animals: Importance and control". The Welfare of Laboratory Animals. Springer, Dordrecht, 2007. 23-35.</p> <p>4. Veterinary clinical parasitology / Anne M. Zajac, Gary A. Conboy. - Blackwell Publishing, 2011. - 8th ed. - 368 p.</p> <p>5. Veterinary parasitology / M.A. Taylor, R.L. Coop, R.L. Wall//Blackwell Publishing. - Carlton, 2015. - 4th ed. - in 1029</p> <p>6. Directory from differentiation of activators інвазійних illnesses / Ponomar C I., Goncharenko V. P, Soloveva L. M; for редакторшей C I. The sexton. - K: Agrarian formation, 2010. - 237 with.</p> <p>7. Infectious diseases of laboratory animals. / Sidorchuk, Alexander Andreevich; Glushkov, Anatoly Andreevich. 2009.128 with.</p> <p>8. Laboratory diagnostics in clinic of small pets / Uillard M, Tvedten Г, Tornvald Г; under the editorship of д.б. н. V.V.Makarova. - M: Open Company "the AQUARIUM the BEECH", - 2004. - 432 with.</p> <p>9. Laboratory methods of researches in biology, animal industries and veterinary medicine: the Directory / V.V.Vlezlo, R.S.Fedoruk, I.B. Ратич, etc.; for редакторшу. V.V.Vlezla. - Lvov: Сполум, 2012. - 764 with.</p> <p>10.Small pets of Illness and treatment. / Peter K. Berghof. - M; Изво:Аквариум, 2006. - 224 with.</p> <p>11.N.V.laboratory's new garden animals and technics of biological experiment: the Uchebno-methodical grant for students of biological faculty of day and correspondence branches (a preparation direction: "Biology"; field of knowledge: "Natural sciences"). - Zaporozhye: ЗНУ, 2011. - 85 with.</p> <p>12.About protection of animals against cruel treatment. The law of Ukraine №3447 - IV. Sheets Supreme For the sake of Ukraine (BBP). - 2006. - № 27, 230 with.</p>
Teaching language	The Ukrainian

The discipline structure behind kinds to occupy

Discipline	A Lectures	B Seminars	C The independent	D The practical	E The Nekliniche sky	FX The clinical	
Illnesses of the laboratory Animals	4	4	34	8	10	0	Parasitology 60 year (2 credits)
	4	2	16	8	0	0	Эпизоотология 30 year (1 credit)
	4	2	16	4	2	2	Therapy 30 year (1 credit)
	4	2	16	4	2	2	Obstetrics 30 year (1 credit)
	4	2	16	4	4		Surgery 30 year (1 credit)
	4	2	16	2		6	Пат.анатомия 30 year (1 credit)
As a whole, year	24	14	114	34	14	10	210

Date of last updating of the program	8/28/2020 p
Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	DISEASES OF EXOTIC ANIMALS AND WILDLIFE
Teachers	Mykhailo Rublenko, doctor habilitated, DVM (guarantor), Mykola Ilnitsky doctor habilitated, DVM, Serhiy Rublenko doctor habilitated, DVM, Volodymyr Andriyets PhD, DVM, Andriy Yaremchuk PhD, DVM
Forms of study: Lectures / practical Volume of study loading: EKTS credits - 1 (30 hours) Weekly loading: 2 hours. Student attendance: required	
Course and semester in which the discipline is planned to be studied	6th year, 11-12 semester
Prerequisites for studying the discipline	Animal anatomy; Cytology, histology, embryology; Animal physiology; Pathological physiology; Veterinary microbiology; Clinical diagnosis and diagnostic imaging, pharmacology and pharmacotherapy.
Methods of knowledge control	Modular control, test, exam
Learning outcomes and competencies	The result of the study is the acquisition by students of basic knowledge about the main species of wild animals and exotic fauna, characteristics of modern approaches to housing conditions, bioethical approaches and biosafety, features of anatomy and physiology and biomechanical processes in animals of different species, prevention and treatment of surgical diseases in different areas body, modern principles of anesthesiological support and anesthesiological monitoring. Acquisition of practical skills in performing various surgical manipulations, osteosynthesis, soft tissue operations, endoscopic examination, based on the principles and procedures of bioethics and biosafety, asepsis and antiseptics.
Description of the discipline	
The base of the discipline	Classrooms, Museum of Surgical Pathology and Laboratory of the Department. Interdepartmental clinics and farms of the research farm of the university, farms of agricultural enterprises.
Topics of classroom lessons	Lecture topics: 1. Topographic anatomy of different species of animals (features of surgical interventions and operative accesses in different anatomical and topographic areas) 2. Anesthesiological support of surgical interventions in animals of different species (local and general anesthesia, infusion therapy and resuscitation)

	3. 3. Prevention of injuries under stress in wild and exotic animals. Use of welfare principles for disease prevention and reduction of injuries (analysis of detention conditions, types of injuries and ways to prevent them)
	Topics of practical classes: 1. Soft tissue surgery (practical development of topographic anatomy and surgery of small mammals, birds, reptiles and wildlife) 2. Diagnosis, treatment and prevention of bone and joint pathology (small mammals, birds, reptiles and wildlife) 3. Anesthesia, resuscitation and monitoring of anesthetized animals (small mammals, birds, reptiles and wildlife) 4. Surgical methods of treatment of pathology of the genitourinary system (small mammals, birds, reptiles and wildlife)
Language of teaching	Ukrainian

The structure of the discipline by type of occupation

A Lectures	B Seminars	C Self- education	D Laboratory	E non- clinical with animals	F Clinical with animals	G other	H total
4	2	16	-	5	3		30

Date of the last modification of the program	18.06.2020 p.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	DERMATOLOGY
Teachers	Serhiy Rublenko, doctor habilitated, DVM (guarantor); Vladimir Shaganenko, PhD, DVM, Taras Tsarenko, PhD, DVM
Forms of study: Lectures / practical Volume of study loading: ECTS-3 credits (90 hours); Weekly loading: 8 hours Student attendance: required	
Course and semester in which the discipline is planned to be studied	6 year, 11 semester
Prerequisites for studying the discipline	“ Animal Anatomy ”, “ Cytology, Histology, Embryology ”, “ Animal Physiology ”, “ Pathological Physiology ”, “ Veterinary Microbiology ”, “ Propaedeutics and Diagnostic Imaging ”, “ Pharmacology and Pharmacotherapy ”, “ Anesthesiology and Operative Surgery ”, “ General Surgery ”, special surgery ”, “ Parasitology and invasive diseases ”, “ Epizootology and

	infectious diseases ” ”
Methods of knowledge control	Exam
Learning outcomes and competencies	The result of studying the discipline is the acquisition by students of knowledge about the pathogenesis and diagnostic algorithms of skin diseases Ability and ability to make decisions on diagnostic and therapeutic procedures in animals of different species with skin syndrome
Description of the discipline	
The base of the discipline	Classrooms, laboratory of the Department of Parasitology, interdepartmental clinic of FVM BNAU, public and private clinics of small animals
Topics of classroom lessons	Lecture topics: - Infectious diseases with dermatological syndrome - Parasitic diseases with dermatological syndrome - Local and general pharmacotherapy in dermatology – - Pustular diseases of the skin and its appendages
	Topics of practical and self-education classes: - Methods of diagnosis of skin diseases (clinical, microscopy of scraped skin, algorithms of laboratory tests - hematological, hormonal, bacteriological) - Protocols for the diagnosis and treatment of acarodermatoses - Protocols for diagnosis and treatment of metabolic skin diseases - Protocols for diagnosis and treatment of skin lesions by bacteria and fungi - Protocols for the diagnosis and treatment of autoimmune skin diseases -- Protocols for the diagnosis and treatment of pustular diseases of the skin and its appendages
Literature recommended:	1. Патерсон С. Кожные болезни кошек. – М.: Аквариум ЛТД, 2002– 168 с. 2. Ниманд Х.Г., Сутер П.Ф. Болезни собак, Пер с немецкого. М.: Аквариум. – 2008. – 800 с. 3. Hnilica, Keith A., and Adam P. Patterson. Small Animal Dermatology-E-Book: A Color Atlas and Therapeutic Guide. Elsevier Health Sciences, 2016. 4. Pascoe, Reginald R., and Derek C. Knottenbelt. Manual of equine dermatology. WB Saunders, 1999.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Dermatology	14		58		10	8		90 (3 credits)

Date of the last modification of the program	28.08.2019 p.
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Name of the university: Bila Tserkva National Agrarian University
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Name of the faculty: Faculty of Veterinary Medicine	
Subject	CLINICAL ONCOLOGY
Teachers	Mykhailo Rublenko, doctor habilitated, DVM (guarantor); Mykola Utechenko PhD, DVM
Forms of study: Lectures / practical Volume of study loading: ECTS credits - 3 (90 hours); Weekly loading: Student attendance: required	
Course and semester in which the discipline is planned to be studied	6th year, 11 semester
Prerequisites for studying the discipline	“Animal Anatomy”, “Cytology, Histology, Embryology”, “Animal Physiology”, “Pathological Physiology”, “Anesthesiology and Operative Surgery”, “Veterinary Microbiology”, “Propaedeutics and Diagnostic Imaging”, “Pharmacology and Pharmacotherapy” and special surgery”, “Pathological anatomy and necropsy ”
Methods of knowledge control	Exam
Learning outcomes and competencies	Students must know and understand the molecular-biological and histomorphological mechanisms of different types of neoplastic processes, their classification characteristics Have clinical and pathomorphological and visual diagnostic algorithms and methods of oncosurgery, chemotherapy and radiation therapy with adequate anesthesia for tumors in animals
Description of the discipline	
The base of the discipline	Classrooms, Museum of Surgical Pathology and Phantom Class, Department Laboratory, Necropsy Hall, Interdepartmental Clinics, Public and Private Clinics for Companion Animals
Topics of classroom lessons	Lecture topics: -Molecular-biological and histopatological mechanisms of neoplastic processes - Clinical stages and classification of TNM - Principles of anesthesia, surgery, chemotherapy and radiation therapy in cancer patients - Cytological and histological diagnosis of tumors
	Topics of practical and self-education classes: - Methods of tumor biology, their cyto- and histological examination - Diagnostic criteria for paraneoplastic syndromes and tumor imaging - Diagnostic criteria for cancer of various organs and systems in companion animals, horses, laboratory and exotic animals - Treatment of tumors of the mammary glands, genitourinary system and soft tissues

Recommended Books:	<p>5. Анестезія та добробут тварин. Карін Портъс (VetAgro Sup), Рубленко С.В., Андрієць В.Г., Рубленко М.В., Ільницький М.Г., Власенко В.М. – БілаЦерква. – 2019.54 с.</p> <p>6. Оптимізація хірургічного лікування неоплазій у дрібних домашніх тварин та попередження їх метастазування: науково-методичний посібник / Д.Д. Білий, М.В. Рубленко. – Дніпро, 2017. –32 с.</p> <p>7. Уайт Р.А. Онкологические заболевания мелких домашних животных. / М.Дж. Брели, Д.Е. Босток, Р.Денис и др.. ; Под ред.. Р.А. Уайта // Пер. с англ. – М. : Аквариум, 2003. – 352 с.</p>
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Предмет	A	B	C	D	E	F	G	H
Clinical oncology	14	4	48		12	12		90 (3 credits)

Date of the last modification of the program	28.09.2019.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	HORSE ORTHOPEDICS
Teachers	Alexander Emelianenko, PhD, DVM
Forms of study: Lectures / practical Volume of study loading: EKTS credits - 3 (90 hours); Weekly loading: Student attendance: required	
Course and semester in which the discipline is planned to be studied	6 year, 11 semester
Prerequisites for studying the discipline	“ Animal Anatomy ”,“ Cytology, Histology, Embryology ”,“ Animal Physiology ”,“ Pathological Physiology ”,“ Anesthesiology and Operative Surgery ”,“ Propaedeutics and Diagnostic Imaging ”,“ Pharmacology and Pharmacotherapy ”,“ General and Special Surgery of Large Animals ”
Methods of knowledge control	test
Learning outcomes and competencies	Students should know: - pathogenesis and changes in the biomechanics of the extremities by their pathology, mechanisms of inflammatory and regenerative processes in articular cartilage and tendons Be able: - to form diagnostic algorithms for diseases of the extremities using clinical and visual research methods, to perform

	functional and orthopedic cleaning of hooves in horses, to have the basics of shoeing horses and conducting conduction anesthesia and typical operations on the hoof
Description of the discipline	
The base of the discipline	Classrooms, Museum of Surgical Pathology and Laboratory of the Department, interdepartmental clinics and horse farms of the educational and research economy of the university, public and private
Topics of classroom lessons	<p>Lecture topics:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Anatomotopographic data of the axial and peripheral skeleton of horses. The influence of the horse's constitution on the hooves. Defects of the thoracic and pelvic limbs and their effect on the hooves of a walking horse. Diagnostic methods. Features of anesthesia for orthopedic manipulations in horses. Preparing the horse for anesthesia. Use of tranquilizers for pharmacological concern with phenothiazine derivatives, alpha 2 agonists, benzodiazepines and butyrophenol derivatives. Local anesthesia, general inhalation and non-inhalation anesthesia. The most common schemes for anesthesia of horses <input type="checkbox"/> Diseases of joints and muscles. Diagnosis and treatment of acute and chronic inflammation of the joints. Dislocations of joints <input type="checkbox"/> Diseases of tendons and tendon sheaths. Tendon diseases in working and sport horses. Physiotherapeutic and surgical methods of treatment. Surgical methods of treating contracture. <input type="checkbox"/> Deformities of hooves in horses. Types and methods of elimination. <input type="checkbox"/> Hoof diseases. Diseases of crumb cartilage. Aseptic and purulent subdermatitis. Inflammation of the shuttle block (podotrochleitis) - diagnosis and treatment. <p>Topics of practical and independent classes:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Introduction. Safety precautions. Features of fixation of horses in orthopedic pathology. <input type="checkbox"/> Clinical and functional diagnostic methods (conduction anesthesia, diagnostic punctures of joints, algorithm for diagnosing lameness in horses, assessment of limb staging and its effect on the shape of the hoof). <input type="checkbox"/> Instrumental diagnostic methods (ultrasound, radiography, thermography) <input type="checkbox"/> General methods of treatment and prevention. Antiseptic dressings for limb wounds and skin lesions. <input type="checkbox"/> Muscle and joint diseases. Aseptic and purulent arthritis (arthroscopy, injection of drugs into the joints, dislocation of the patella - diagnosis and surgical treatment, methods of diagnosis and treatment of spar). <input type="checkbox"/> Tendon diseases (clinical and ultrasonographic examination of the tendons of the superficial, deep and interosseous muscles of the flexors of the finger, tenotomy of the tendons of the flexors of the finger, application of cooling and warming

	<p>compresses, injections of reparative and anti-inflammatory drugs, tendon diseases).</p> <p><input type="checkbox"/> Diseases of the musculoskeletal system (exostoses, bursitis, fractures of the finger bones, inflammation of the heel and hoof cartilage, conservative and surgical methods).</p> <p><input type="checkbox"/> Basics of clearing hooves in horses. Circumcision of overgrown hooves, correction of the wall and sole of the hoof</p> <p><input type="checkbox"/> Diseases of the hooves (necrosis of the tendon of the deep flexor digitorum. Surgical access to the hoof cartilage and methods of their resection. Removal of the anterior wall of the hoof behind the horn column).</p> <p><input type="checkbox"/> Basics of shoeing horses. Horseshoe making (standard and orthopedic), horse shoeing.</p>
Literature recommended	<p>1. Stashak TS: Adams Lameness in Horses 5th Ed., Lippincott Williams and Wilkins 2001, pp.1008</p> <p>2. Pollitt CC: Color Atlas of the Horse's Foot, Mosby, 2000,</p> <p>3. M. W. Ross, S. J. Dyson: Diagnosis and Management of Lameness. Elsevier Saunders. 2011</p> <p>4. Д.В. Сарбаш Ортопедія коней. Посібник / Сарбаш Д.В., Рубленко М.В., Кантемир О.В. та ін.. Харків: ХДЗВА, 2018. – 194 с.</p>
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Предмет	A	B	C	D	E	F	G	H
Traumatology and orthopedics of dogs and cats	12	2	54		14	8		90 (3 credits)

Date of the last modification of the program	28.08.2019 p.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	NEUROLOGY OF SMALL ANIMALS
Teachers	Mykhailo Rublenko, doctor habilitated, DVM (guarantor); Vladimir Golovakha, DVM
Forms of study: Lectures / practical Volume of study load: ECTS credits - 3 (90 hours); Weekly load: 8 hours Student attendance: required	
Course and semester in which the discipline is planned to be studied	6 year, 12 semester
Prerequisites for studying the discipline	Animal Anatomy”, “Cytology, Histology, Embryology”, “Animal Physiology”, “Pathological Physiology”, “Veterinary Microbiology”, “Propaedeutics and Diagnostic Imaging”, “Pharmacology and Pharmacotherapy”, “Anesthesiology and

	Operative Surgery”, and special surgery ”,“ Medicine of internal diseases of animals ”
Methods of knowledge control	Test
Learning outcomes and competencies	The result of studying the discipline is the acquisition by students of knowledge about the pathogenesis and diagnostic algorithms of neurological syndromes in animals Ability and possibility to make decisions about diagnostic algorithms and treatment procedures in animals with neurological syndromes
Description of the discipline	
The base of the discipline	Classrooms, interdepartmental clinic of FVM BNAU, public and private clinics of small animals
Topics of classroom classes	Lecture topics: Metabolic diseases with neurological syndromes - Injuries and tumors accompanied by neurological syndromes - Central and peripheral vestibular disorders - Paresis and paralysis, ataxia with injuries of the spine and spinal cord Topics of practical and independent classes: - Scheme and methods of neurological research - Special neurological examinations (reflex, sensitive and painful reactions) and interpretation of diagnostic results - Differential diagnosis of hormonal and metabolic neurological syndromes (Glycogen accumulation disease, mucopolysaccharidosis, hypo- and hypercalcemia, hypo- and hyperkalemia, Cushing's syndrome, uremic encephalopathy, hepatocephalopathy) - Diagnosis and treatment of lesions of the cranial nerves - Differential diagnosis of pain in the neck and back - Differential diagnosis of acute and chronic paresis of the extremities
	- Metabolic diseases with neurological syndromes
Literature recommended:	8. Крисман Ш., Мариани К., Платт С., Клемонс Р. Неврология собак и кошек. Пер с англ. М.: Аквариум Принт, 2016. – 290 с. 9. Ниманд Х.Г., Сутер П.Ф. Болезни собак, Пер с немецкого. М.: Аквариум. – 2008. – 800 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Neurology of small animals	12		54	4	10	10		90 (3 credits)

Date of the last modification of the program	28.08.2019 p.
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Name of the university: Bila Tserkva National Agrarian University

Name of the faculty: Faculty of Veterinary Medicine	
Subject	OPHTHALMOLOGY
Teachers	Mykhailo Rublenko, doctor habilitated, DVM (guarantor); Volodymyr Andriyets, PhD, DVM
Forms of study: Lectures / practical Volume of study load: ECTS-3 credits (90 hours); Weekly load: 8 hours Student attendance: required	
Course and semester in which the discipline is planned to be studied	6 year, 12 semester
Prerequisites for studying the discipline	“ Animal Anatomy ”, “ Cytology, Histology, Embryology ”, “ Animal Physiology ”, “ Pathological Physiology ”, “ Veterinary Microbiology ”, “ Propaedeutics and Diagnostic Imaging ”, “ Pharmacology and Pharmacotherapy ”, “ Anesthesiology and Operative Surgery ”, “ General Surgery ”, special surgery ”
Methods of knowledge control	Exam
Learning outcomes and competencies	The result of studying the discipline is the acquisition by students of knowledge about the pathogenesis and diagnostic algorithms of eye diseases in animals of different species Ability and ability to make decisions on conducting diagnostic procedures for eye pathologies, their surgical and pharmacotherapeutic treatment with the provision of adequate anesthesia in animals of different species
Description of the discipline	
The base of the discipline	Classrooms, laboratory of the department, small animal clinics, ophthalmology office
Topics of classroom classes	Lecture topics: - Features of anatomy and physiology of eyes, their inspection, local and general anesthesia in ophthalmology - Clinical pharmacotherapy and basic surgical methods in veterinary ophthalmology: - The most common eye diseases in horses - The most common eye diseases in dogs and cats - The most common eye diseases in exotic animals - Diseases with ophthalmic syndrome in farm animals
	Topics of practical classes - Basic diagnostic methods in animal ophthalmology (ophthalmological examination protocol, neurological, tonometry of intraocular pressure, biomicroscopy, ophthalmoscopy, Schirmer test, gonioscopy, fluorescein test) - Anesthesiological support and surgical ophthalmological instruments - Diagnostic protocols and treatment of diseases of the cornea, conjunctiva and eyelids - Diagnostic protocols and treatment of cataracts, glaucoma and diseases of the vascular membrane of the eye

	-- Examination of the fundus and retinal disease
Literature recommended:	10. Риис Р.К. Офтальмология мелких домашних животных. Пер. с англ.. – М.: ООО «Аквариум - Принт» 2006. – 280 с. 11. Фитерстоун Х., Холт Э. Офтальмология собак и кошек. Основные принципы диагностики на примере клинических случаев. Пер. с англ. – М.: Издательство Аквариум, 2018 – 208 с.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Traumatology and orthopedics of dogs and cats	12		54		12	12		90 (3 credits)

Date of the last modification of the program	28.08.2019 p.
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c. Animal Production

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Biotechnology	
Name of discipline	ANIMAL HYGIENE
Teachers	Yuriy Balatsky, PhD, DVM; Lesya Bondarenko, PhD, DVM;
Form of study: Lectures/practical The amount of training load: ECTS credits – 4 (120 h.); Lessons per week: 0,5 lectures, 2 practical Student presence: required	
Course and semester in which the discipline is planned to be studied	Course 2, semester 4
Prerequisites for studying the discipline	«Inorganic and analytical chemistry», «Animal anatomy», «Animal physiology»,
Methods of knowledge control	Test
Learning outcomes and competencies	Learning outcomes defined by the standard of higher education of Ukraine for specialty 211 «Veterinary Medicine»: PH6, PH7, PH8, PH9, PH10. Students must know and competently use the terminology of hygienic parameters in veterinary medicine, make decisions on the choice of effective methods of treatment and prevention of animal diseases, taking into account the optimal conditions of detention. Develop quarantine and rehabilitation measures for the prevention and treatment of diseases of various etiologies, taking into account the provision of appropriate microclimate parameters in industrial premises. Formulate conclusions on the effectiveness of selected methods and means of keeping, feeding and treatment of animals, prevention of infectious and non-communicable diseases, as well as production and technological processes in enterprises for keeping, exploitation of animals of different classes and species. Monitor the causes of the spread of diseases of various etiologies and biological pollution of livestock waste, as well as materials and veterinary products. Develop sanitary and hygienic measures aimed at protecting the population from diseases common to animals and humans. To offer and use expedient innovative methods and approaches for the decision of the problem situations concerning optimization of conditions of keeping of animals. Have specialized software to ensure optimal microclimate parameters in livestock facilities.
Description of disciplines	
The base of the discipline	Auditoriums, research laboratories of BNAU interdepartmental clinics and farms of educational and research economy of the university, farms of agricultural enterprises

Topics of classes	<ol style="list-style-type: none"> 1. Introduction to the discipline, the purpose of studying the discipline. Concepts and terms of animal hygiene. 2. Physical properties of the air environment. 3. Hygiene of animal care. 4. Hygiene of animal transportation. 5. Hygiene of cattle. 6. Hygiene of pigs. 7. Hygiene of sheep. 8. Hygiene of sheep.
Recommended literature:	<ol style="list-style-type: none"> 1. Demchuk M.V., Black M.V., Vysokos M.P. Animal hygiene. Kharkiv.- Espada, 2006. - 424 p. 2. Demchuk M.V., Black M.V., Vysokos M.P. and other. Animal hygiene. Workshop. - K.: Agricultural Education. - 1994. - 196 p. 3. Interpreter of concepts and terms in veterinary sanitation and hygiene [Textbook. manual] - / D.A. Zasekin, N.I. Kosyanchuk, M.D. Kucheruk, V.V. Solomon., - K: Ukrtechinform Publishing House - 2015. -269 p. 4. Veterinary hygiene and sanitation (questions and answers) D.A. Zasekin, N.I. Kosyanchuk, V.V. Solomon., M.D. Kucheruk, - K: Publishing House PE "Direct Line" - 2014. -208 p. 5. Sanitary norms for livestock and processing enterprises of Ukraine [Textbook. manual] /, D.A. Zasekin, V.M. Polyakovsky. V.V. Solomon - K: Publishing House "Center for Educational Literature". - 2015. - 400 p.
Language of instruction	Ukrainian

Structure of discipline by occupation

A lectures	B seminars	C self- assessment	D laboratory and desktop work	E non-clinical animals, models	F clinical with animals	G other	H together
16	-	56	48	-	-	-	120

Date of the last modification of the program	28.08.2020 p.
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Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	BIOTECHNOLOGY IN VETERINARY MEDICINE
Teachers	Lyubov Onyschenko, Senior Lecturer, Department of Ecology and Biotechnology, Olga Shulko, Associate Professor, Department of Ecology and Biotechnology
Forms of study: Lectures / practical Volume of study loading: ECTS-3 credits (90 hours); Weekly workloading: 4 semester - 4 (1/3)	

Student attendance: required	
Course and semester in which the discipline is planned to be studied	2 M year, 4 semester
Prerequisites for studying the discipline	«Biochemistry "," Microbiology "," Molecular Biology "," Cell and Genetic Engineering "," Veterinary Virology "," Genetics "," Immunology "," Animal Feeding ».
Methods of knowledge control	test
Learning outcomes and competencies	<p>Students must know and be able to:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - current state of biotechnology; - enzymology, creation of recombinant DNA; - ways of processing waste of the national economy to ensure the ecological well-being of the environment; - methods of assessing the environmental impact of various industries on the environment; - basic concepts and terminology of this discipline. <p>Skill:</p> <ul style="list-style-type: none"> - methods of calculating the parameters of bioconversion, manure biomass to biogas; - calculate the parameters of anaerobic fermentation of manure biomass and biomass of algae to obtain biogas as an alternative carrier, especially in a deep economic and environmental crisis; - to introduce waste-free technologies to ensure the ecological well-being of the environment; - use of immobilized enzymes in veterinary medicine. - technology of growing spirulina for use in animal feed.
Description of the discipline	
The base of the discipline	Classrooms, laboratory of the department and farm of the research farm of the university,
Topics of classroom lessons	<p>Introduction. The value of biotechnology</p> <ul style="list-style-type: none"> - Organic and inorganic polymeric carriers - Physical and chemical methods of immobilization - Industrial biotechnology based on the use of immobilized enzymes in the food industry - Biotechnology for biofuel production by anaerobic fermentation - Biotechnology of vermiculture - Scientific bases of rational management and use of environment. - Classification of organic and inorganic polymeric carriers for enzyme immobilization. - Adsorption of urease on zeolite and study the activity of immobilized and free enzyme - Immobilization of glucoamylase and study of the activity of immobilized and free enzymes. - Study of the properties of glucoamylase. - Preservation of enzymatic activity of various forms of enzyme under the action of denaturing factors - heavy metal ions.

	<p>- Study of the effect on the activity of free and immobilized enzyme glucoamylase denaturing factor - reaction (pH) medium.</p> <p>- Immobilization of protosubtilin and comparison of the activity of free and immobilized enzyme.</p> <p>- Study of the resistance of protosubtilin (preservation of enzymatic activity) to the action of denaturing factor - heavy metal ions.</p> <p>- Study of the effect on the activity of free and immobilized enzyme protosubtilin denaturing factor - reaction (pH) medium. Effect of protosubtilin on the activity of free and immobilized enzyme glucoamylase.</p> <p>ELIBRARY.RU. Study of preservation of activity of free and immobilized glucoamylase enzyme at complex action on enzyme of ions of heavy metals and acidic environment.</p> <p>ELIBRARY.RU. Study of preservation of activity of free and immobilized enzyme protosubtilin at complex action on enzyme of ions of heavy metals and acidic environment.</p> <p>- Biomethanogenesis and its stages</p> <p>- Negative impact of waste on the environment.</p> <p>- The latest methods of water purification.</p>
recommended literature:	<ol style="list-style-type: none"> 1. Біотехнологія: Підручник /В.Г.Герасименко, М.О.Герасименко, М.І.Цвіліховський, та ін.; За. аг.Ред. В.Г. Герасименко. – К.: Фірма «ІНКОС», 2006. – 647с. 2. Герасименко В.Г. Біотехнологічний словник, К., 1991. 3. Герасименко В.Г., Герасименко М.О. та ін. Біотехнологія у тваринництві / Гене-тика сільськогосподарських тварин, К., 1996, с. 188-233. 4. Кудлай І., Луценко М. Технологія переробки відходів молочної ферми з використанням біогазової установки /Техніка і технології АПК. – 2010. – 310. –С. 10-13. 5. Погорельый Л.В., Луценко М.М. Биотехнологические системы в животноводстве. – К., 1992. – С.268-292.
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

A lectures	B seminars	C Self- education	D laboratory	E non-clinical with animals, models	F Clinical with animal models	G other	H total
14	42	34		-	-		90

Date of the last modification of the program	28.08.2019 p.
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d. Food Safety and Quality, Veterinary Public Health and One Health Concept

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	BIOSAFETY AND BIOSECURITY
Teachers	Taras Tsarenko, PhD, DVM, Oleksandra Novik, PhD, DVM
Forms of study: Lectures / practical / seminars Volume of study loading: ECTS credits -3 (90 hours); Weekly loading: 1/2 Student attendance: required	
Course and semester in which the discipline is planned to be studied	6 year, 12 semester
Prerequisites for studying the discipline	«Admission to the specialty "," Veterinary Epidemiology "," Professional Ethics with Fundamentals of Biosafety and Bioethics "," Veterinary Microbiology and Immunology "," Epizootology, Infectious Diseases and Preventive Medicine "," Organization of Veterinary Service and Public Health "," Veterinary legislation and forensic medicine "," Herd health management "," Ruminant diseases "," Pig diseases "," Poultry diseases ".
Methods of knowledge control	test
Learning outcomes and competencies	<p>Students must know and be able to:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - know the basics of biosafety and biosecurity, elements of biosafety, biosafety regulations; - know ways to ensure the appropriate level of biosafety according to the industry, methods of risk analysis. - know the requirements for biosafety for farms by species of animals and laboratories; - know the principles and ways of implementing infection control in veterinary clinics. - know the types and methods of using personal protective equipment and disinfectants <p>Skill:</p> <ul style="list-style-type: none"> - be able to conduct risk analysis and develop a biosafety system in the workplace; - be able to use personal protective equipment; - be able to develop and implement plans for disinfection and infection control; - - be able to develop biosecurity programs in laboratories and biological enterprises.
Description of the discipline	
The base of the discipline	Classrooms, computer classes, infirmary, laboratories, training farm.

Topics of classroom lessons	<p style="text-align: center;">Lectures.</p> <p>Topic 1. Fundamentals of biosafety and biosecurity. Topic 2. Analysis and management of biological risks. Topic 3. Biosafety and biosecurity. Topic 4. Personal biosafety of a veterinarian. Topic 5. Biosafety and biosecurity in industrial livestock. Topic 6. Biosafety and biosecurity in veterinary clinics.</p>
	<p style="text-align: center;">Practical training:</p> <p>Topic 1. Fundamentals of biosafety. Elements of biosafety. Bioprotection of laboratories, biological productions. Bioterrorism. Topic 2. Analysis and management of biological risks. Ways to reduce biological risks. Topic 3. Zoonoses of productive animals, dogs and cats, exotic animals and ways of their transmission. Prevention of zoonoses. Topic 4. Seminar Topic 5. Personal biosafety of a veterinarian. Infectious control of zoonoses and animal diseases in farms and clinics of small animals. Topic 6. Laboratory biosafety and biosecurity. Biosafety levels. Control of harmful factors. Storage of chemicals and biomaterials. Biosecurity in laboratories. Topic 7. Practical use of personal protective equipment. Disinfection plan. Engineering elements of biosafety. Topic 8. Seminar. Topic 9. Biosafety in dairy farming. Topic 10. Biosafety in pig and poultry farming. Topic 11. Biosafety and infection control in veterinary clinics. Topic 12. Seminar.</p>
Literature recommended	<p>9. Guidelines for Veterinary Personal Biosecurity /Australian Veterinary Association, 2011.– 59 p. 10. General biosecurity guidelines/ AAEP, 2017 .– 15 p. 11. Biological safety: principles and practices / editors, Diane O. Fleming, Debra L. Hunt.—4th. ed. 642 p. 12. Bases of biosafety for research institutions of biological profile /Y. Salyha, I. Luchka, V. Rosalovskyii.. 2017. – 218 p. 13. Управління біоризиками: Посібник з лабораторної біобезпеки, WHO, – 2006 – 37 с. 14. Голубнича В. М. Біобезпека та біозахист у біологічних лабораторіях 1-го та 2-го рівнів біобезпеки : монографія / В. М. Голубнича, М. В. Погорелов, В. В. Корнієнко. – Суми: Сумський державний університет, 2016. – 123 с.</p>
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Biosafety and biosecurity	12	6	54	18	-	-	-	90 (3 credits)

A: lectures; B: seminars; C: controlled self-study; D: laboratory and descriptive work, E: non-clinical work on animals; F: clinical work on animals; G: others (specify); H: total

Date of the last modification of the program Developed for the first time in 2020-2021 academic year.

Name of the university: Bila Tserkva National Agrarian University	
Name of the faculty: Faculty of Veterinary Medicine	
Subject	BIOPREPARATIONS
Teachers	Taras Tsarenko, PhD, DVM, Oleksandra Novik, PhD, DVM
Forms of study: Lectures / practical / seminars Volume of study loading: ECTS credits -3 (90 hours); Weekly loading: 1/2 Student attendance: required	
Course and semester in which the discipline is planned to be studied	6 year, 12 semester
Prerequisites for studying the discipline	«Admission to the specialty "," Veterinary Epidemiology "," Professional Ethics with Fundamentals of Biosafety and Bioethics "," Veterinary Microbiology and Immunology "," Epizootology, Infectious Diseases and Preventive Medicine "," Organization of Veterinary Service and Public Health "," Veterinary legislation and forensic medicine "," Herd health management "," Ruminant diseases "," Pig diseases "," Poultry diseases ".
Methods of knowledge control	test
Learning outcomes and competencies	<p>Students must know and be able to:</p> <p>Knowledge:</p> <ul style="list-style-type: none"> - know the basics and history of the development of biologics; - principles of immunity and immune memory; - know the principles of creation and implementation in practice of vaccines, sera, bacteriophages and other biological products; - know the basics of creating vaccines for bacterial, viral and other infectious diseases; - to know the current state and prospects of development of the biological products industry. <p>Skill:</p> <ul style="list-style-type: none"> - be able to analyze the market of biologics; - be able to create a plan for the production of biological products of different types; - be able to predict the effects of the use of biological products in industrial livestock and domestic animals; - - be able to develop biosecurity programs in laboratories and biological enterprises.
Description of the discipline	
The base of the discipline	Classrooms, computer classes, infirmary, laboratories, training farm.
Topics of classroom lessons	<p style="text-align: center;">Lectures.</p> <p>Topic 1. History of the development of biologics in medicine and veterinary medicine.</p> <p>Topic 2. Infectious process and prerequisites for vaccine prophylaxis.</p> <p>Topic 3. Immunological memory and various forms of immunity.</p>

	<p>Topic 4. Fundamentals of technology for the manufacture of vaccines and sera.</p> <p>Topic 5. Bacteriophages, individual vaccines and other types of biological products.</p> <p>Topic 6. Storage, transportation and sale of biologicals.</p>
	<p style="text-align: center;">Practical training:</p> <p>Topic 1. History of vaccination and immunotherapy. Successes of vaccine prevention at the global and national levels. Policy of international organizations on biological products (OIE, WHO, FAO)</p> <p>Topic 2. Infectious process. Immune response. Immunity and its types. Immune memory. Methods of immune control. Nonspecific immunoprophylaxis.</p> <p>Topic 3. Principles of vaccine prophylaxis. Use of vaccines in veterinary medicine. Vaccination schemes and the problem of creating long-term specific immunity.</p> <p>Topic 4. Seminar</p> <p>Topic 5. Technology of production of viral vaccines.</p> <p>Topic 6. Technology of production of bacterial vaccines.</p> <p>Topic 7. Production of hyperimmune sera.</p> <p>Topic 8. Manufacture of bacteriophages, individual vaccines and other types of biological products. Vaccines in oncology.</p> <p>Topic 9. Seminar.</p> <p>Topic 10. The market of biologicals. Storage, transportation and sale of biologicals.</p> <p>Topic 11. Creation of vaccination programs in industrial livestock and for domestic animals.</p> <p>Topic 12. Seminar.</p>
Literature recommended	<p>1. Вакцинология. /Медуницин Н.В., М.: 2004, 448 с.</p> <p>2. Tizard, Ian R. <i>Veterinary Immunology-E-Book</i>. Elsevier Health Sciences, 2017.</p> <p>3. Schultz, Ronald D. <i>Veterinary vaccines and diagnostics</i>. 1999.</p> <p>Brun, Alejandro. <i>Vaccine technologies for veterinary viral diseases</i>. 2016.</p> <p>4. Thomas, Sunil. <i>Vaccine Design</i>. Springer New York, 2016.</p> <p>5. OIE. Manual of Diagnostic Tests and Vaccines for Terrestrial Animals. https://www.oie.int/standard-setting/terrestrial-manual/</p>
Language of instruction	Ukrainian

The structure of the discipline by type of occupation

Subject	A	B	C	D	E	F	G	H
Bio preparations	12	6	54	18	-	-	-	90 (3 credits)

A: lectures; B: seminars; C: controlled self-study; D: laboratory and descriptive work, E: non-clinical work on animals; F: clinical work on animals; G: others (specify); H: total

Date of the last modification of the program	Developed for the first time in 2020-2021.
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