

CATALOG OF ELECTIVE DISCIPLINES

6B09 - Veterinary

(Code and classification of the field of education)

6B091 - Veterinary

(Code and classification of the direction of training)

0841

(Code in the International Standard Classification of Education)

B083 - Veterinary Science

(Code and classification of the educational program group)

6B09103 - Veterinary

(Code and name of the educational program)

(Level of preparation)

set of 2024

Developed

By the Academic Committee of the OP
Head of AK Yessengulova N.
Manager of OP Zhexenayeva A.

Reviewed

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Approved

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Pre-graduate practice

Discipline cycle	Profiling discipline
Course	5
Credits count	10
Knowledge control form	Total mark on practice

Short description of discipline

Pre-diploma practice contributes to the development of skills in scientific research and information processing related to the topic of the diploma thesis. It involves conducting a scientific experiment, statistically processing the obtained data, analyzing and presenting the results of scientific research as part of the qualification work.

Purpose of studying of the discipline

To confirm the research search, the bachelor must confirm the experiments and results by writing a thesis (project)

Learning Outcomes

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

ON6 Conduct epidemiological monitoring for infectious and invasive diseases.

ON 7 Conduct veterinary-sanitary expertise and ensure the food safety of livestock and plant products.

ON 8 Implement veterinary-sanitary supervision over the facilities under the control of the veterinary-sanitary service.

ON 9 Organize the protection of the population from diseases common to animals and humans.

Learning outcomes by discipline

For the bachelor's competence in the field of veterinary medicine, it is necessary to undergo industrial practice in the leading farms of Kazakhstan

Prerequisites

Industrial practice 3

Postrequisites

Final examination

Industrial practice IV

Discipline cycle	Profiling discipline
Course	5
Credits count	10
Knowledge control form	Total mark on practice

Short description of discipline

The fourth industrial internship is conducted by students in veterinary institutions under the guidance of faculty members from specialized departments. The practice is carried out at various organizations such as veterinary services, laboratories, enterprises, and farms. Libraries are also utilized during the theoretical part of the diploma work. The mastery of specializations takes place directly in production settings, market structures, meat processing enterprises, laboratories for veterinary sanitary examination of the market, border control points, scientific organizations and laboratories, structures of quarantine services, and biotechnological industry enterprises.

Purpose of studying of the discipline

Possesses the ability and willingness to prescribe therapeutic and surgical treatment to patients in accordance with the diagnosis.

Learning Outcomes

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

ON6 Conduct epidemiological monitoring for infectious and invasive diseases.

ON 7 Conduct veterinary-sanitary expertise and ensure the food safety of livestock and plant products.

ON 8 Implement veterinary-sanitary supervision over the facilities under the control of the veterinary-sanitary service.

ON 9 Organize the protection of the population from diseases common to animals and humans.

Learning outcomes by discipline

Performs the main therapeutic measures for the most common diseases and conditions in the adult population of animals, young animals and newborns that can cause severe complications and death: diseases of the nervous, endocrine, immune, cardiovascular, respiratory, digestive, genitourinary systems and blood. Timely identify life-threatening disorders (acute blood loss, respiratory failure, cardiac arrest, coma, shock), use methods of their immediate elimination, and take anti-shock measures

Prerequisites

Industrial practice 3

Postrequisites

Final examination

Bioorganic chemistry

Discipline cycle	Basic disciplines
Course	2
Credits count	3
Knowledge control form	Examination

Short description of discipline

The discipline studies the relationship of organic molecules with the biological system and the phenomena occurring on the basis of the processes of their biological formation in the animal organism. This discipline forms the students' understanding of the biological role of natural compounds, as well as establishes the relationship between the structure, reactivity of chemical compounds and their functional role. It teaches the study of the influence of structural elements of tissues.

Purpose of studying of the discipline

identification of the relationship between the structure of an organic compound and its biological function

Learning Outcomes

ON 10 Apply traditional and innovative methods of laboratory diagnosis for diseases in animals and poultry, utilizing comprehensive approaches to the diagnosis and prevention of infectious and non-infectious animal diseases.

Learning outcomes by discipline

- 1) Knows the relationship of organic molecules and their biological functions.
- 2) Forms an idea of the biological role of natural compounds, establishes a connection between the structure, reactivity of chemical compounds and their functional role.
- 3) Studies the effect on the body of biopolymers, which are structural components of cells and tissues, as interdisciplinary connections between bioorganic chemistry and other disciplines (biochemistry, pharmacology, hygiene, etc.)

Prerequisites

School course

Postrequisites

Veterinary Pharmacology

Biochemistry of animals

Discipline cycle	Basic disciplines
Course	2
Credits count	3
Knowledge control form	Examination

Short description of discipline

The discipline studies chemical substances and its processes occurring in living organisms, the process of life from the point of view of chemistry; studies the types, functional role, metabolic ways of the main biomolecules that make up the living cell and methods of transformation of genomic data, principles of energy conversion in biological systems, the main methods of synthesis of biologically active substances, transformation of proteins, carbohydrates.

Purpose of studying of the discipline

students learn the main classes of biologically important substances, the composition, structure, properties of these substances;

- biological functions performed in the body, mechanisms of action;
- changes, interactions of biological substances in the processes of life, the main ways of formation of substances;
- be able to study the basic biochemical systems and chemical reactions; acquire practical skills to study the composition, structure, and properties of biological substances;

Learning Outcomes

ON 10 Apply traditional and innovative methods of laboratory diagnosis for diseases in animals and poultry, utilizing comprehensive approaches to the diagnosis and prevention of infectious and non-infectious animal diseases.

Learning outcomes by discipline

- 1) knows the chemical composition of a living organism, the structure and physico-chemical properties of high-molecular proteins, carbohydrates, fats and nucleic acids, as well as the mechanisms of action of biologically active substances - vitamins, enzymes and hormones;
- 2) assimilates knowledge about metabolism and energy exchange in a living organism;
- 3) is able to conduct biochemical studies of nutrients and biologically active substances;

Prerequisites

School course

Postrequisites

Veterinary Pharmacology

Fundamentals of Biochemistry and BAS

Discipline cycle	Basic disciplines
Course	2
Credits count	3
Knowledge control form	Examination

Short description of discipline

The discipline studies the chemical composition and properties of substances related to the structure, biochemical properties and metabolic ways of transformations of the major classes of biomolecules of living cells, in large part related to the understanding of tissues and organs, as well as examining the structure and function of the body, vitamins, hormones, enzymes, proteins, lipids, glycosides and the basic steps in gene expression.

Purpose of studying of the discipline

the study methodology for establishing the major structures of biomolecules, secondary metabolites

Learning Outcomes

ON 10 Apply traditional and innovative methods of laboratory diagnosis for diseases in animals and poultry, utilizing comprehensive approaches to the diagnosis and prevention of infectious and non-infectious animal diseases.

Learning outcomes by discipline

- 1) Studies the chemical composition and properties of substances related to the structure, biochemical properties and metabolic pathways of transformations of the main classes of biomolecules of living cells,
- 2) Knows largely related to the understanding of tissues and organs, as well as the structure and functions of the body, vitamins, hormones, enzymes, proteins, lipids, glycosides, the main stages of gene expression
- 3) Examines the structure and functions of the body, vitamins, hormones, enzymes, proteins, lipids, glycosides and the main stages of gene expression.

Prerequisites

School course Basic and profile disciplines of the EP

Postrequisites

Veterinary Pharmacology

Animal husbandry

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies the main tasks of breeding farm animals for the production of various livestock products and separate branches of animal breeding. The course reveals the peculiarities of breeding of farm animals in pedigree and commercial farms, prospective directions for the improvement of existing breeds of animals. At the same time, the discipline considers the use of information technology and the application of large-scale selection in animal breeding, animal biotechnology.

Purpose of studying of the discipline

Theoretical foundations and practical issues of breeding certain species of animals and birds.

Learning Outcomes

ON 3 Ensure the attainment of veterinary-sanitary quality in livestock and poultry production.

Learning outcomes by discipline

- 1) Studies the peculiarities of breeding agricultural animals in breeding and commodity farms.
- 2) Studies modern requirements, promising areas of breeding improvement of existing breeds of agricultural animals.
- 3) Applies selection and breeding work planning in practice.

Prerequisites

Introduction to the specialty

Postrequisites

Animal feeding

Poultry farming

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline deals with the formation of theoretical knowledge and practical skills necessary for the management of incubation and food egg production technologies, meat production in intensive poultry farming, poultry products, their processing and utilisation. The course studies productive qualities, constitution and exterior of poultry as well as feeding, housing and care as the basis of poultry farming, breeds of birds of different areas of productivity.

Purpose of studying of the discipline

The importance of poultry farming as a branch of the agro-industrial complex that produces high-value protein foods in a short time with minimal labor and material resources. Eggs and meat, their nutritional qualities and importance in human nutrition

Learning Outcomes

ON 3 Ensure the attainment of veterinary-sanitary quality in livestock and poultry production.

Learning outcomes by discipline

- 1) acquire knowledge of modern methods of qualitative improvement of poultry farming based on large-scale breeding and biotechnology.
- 2) The importance of poultry farming as a branch of the agro-industrial complex that produces high-value protein foods in a short time with minimal labor and material resources.
- 3) Poultry by-products: feather and down, droppings, waste collection and poultry slaughter.

Prerequisites

Introduction to the specialty

Postrequisites

Animal feeding

Private animal husbandry

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies the biological and farming characteristics of farm animals. The course includes the study of branches of livestock industry, such as cattle breeding, horse breeding, sheep breeding, goat breeding, pig breeding, poultry breeding, camel breeding, maral breeding, fish breeding, bee breeding, rabbit breeding. Directed mastering of private zootechnics is impossible without knowledge of exterior and constitutional features of animals, animal breeds, methodology of scientific research, selection and breeding work in animal breeding, technological processes of production of animal products.

Purpose of studying of the discipline

The concept of the growth and development of animals. Patterns of growth and development of animals in the embryonic, fetal periods and after birth. The concept of the constitution, classification of types of constitution and their characteristics.

Learning Outcomes

ON 3 Ensure the attainment of veterinary-sanitary quality in livestock and poultry production.

Learning outcomes by discipline

- 1) Knows the patterns of growth and development of animals in the embryonic, fetal periods and after birth.
- 2) Applies the concept of the constitution, classification of types of the constitution and their characteristics.
- 3) Demonstrates basic knowledge of animal nutrition, preparation of diets for different types of animals and different age groups in

accordance with feeding standards.

Prerequisites

Introduction to the specialty

Postrequisites

Animal feeding

Zootechnical accounting and analysis of feed

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies modern methods and scheme of analysis of feed, determines the quantity and quality factor of different types of feed, which is a determining factor of successful development of the livestock industry in the market; the course of the discipline is aimed at studying the peculiarities of fodder accounting, assessment of fodder nutritional content and comprehensive feeding on a scientific basis, as well as assessment of fodder quality composition.

Purpose of studying of the discipline

Organizes zootechnical accounting of green and coarse feeds.

Learning Outcomes

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

Learning outcomes by discipline

Ensure obtaining veterinary and sanitary quality of livestock and poultry products.

- 1) Organizes zootechnical accounting of green and coarse feeds. The method of taking average samples of coarse feed for analysis.*
- 2) Determines nitrogenous substances and crude protein in feed.*
- 3) Demonstrates basic knowledge in the field of assessment of the food supply and preparation of diets.*

Prerequisites

Animal husbandry

Postrequisites

General zoo hygiene

Animal feeding

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

Discipline reveals the organization of feeding animals; in general, discipline determines the rules of optimal animal feeding and individual diets; considers cattle feeding systems, including pregnant dry cows and heifers, lactating cows, young cattle, breeding bulls and animal fattening, as well as the system of rationed feeding sheep and goats, horses, pigs, camels and poultry.

Purpose of studying of the discipline

Owns the methods of distinguishing the types of feed, evaluates the quality, determines the rationing of feeding farm animals, creates rations.

Learning Outcomes

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

Learning outcomes by discipline

Ensure obtaining veterinary and sanitary quality of livestock and poultry products.

- distinguish types of feed;*
- assesses the quality of feed;*
- properly organizes the preparation of animal feed;*
- knows the correct rationing in the feeding of farm animals and makes up diets for various animals.*

Prerequisites

Animal husbandry

Postrequisites

General zoo hygiene

Norms and optimization of the diet of animal feeding

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

In the study of the discipline such issues as the creation of optimal conditions for feeding, keeping of farm birds and animals that meet the physiological needs of the body, taking into account natural and climatic factors, are considered; the course is aimed at optimizing the diet of feeding all kinds of farm animals, including marals, fur animals, birds, commercial fish, bees and unproductive animals; feeding diets take into account species, breed, age, sex and other animal features.

Purpose of studying of the discipline

High milk yields and at the same time a high level of profitability are ensured by following a number of rules for feeding cows: the concentration of nutrients and biologically active substances in the diet and their ratio, environmental parameters, etc.

Learning Outcomes

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

Learning outcomes by discipline

Ensure obtaining veterinary and sanitary quality of livestock and poultry products.

1) Demonstrates basic knowledge in the field of assessment of the food supply and preparation of diets.

2) High milk yields and at the same time a high level of profitability are ensured by following a number of rules for feeding cows: the concentration of nutrients and biologically active substances in the diet and their ratio, environmental parameters, etc.

3) Both deficiency and excess of nutrients reduces productivity; it is necessary to feed high-quality feed to animals; diets should be compiled using computer programs.

Prerequisites

Animal husbandry

Postrequisites

General zoo hygiene

Examination of farm animals

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies the principles of developing a plan for systematic inspection of animals in order to obtain high-quality products from farm animals; the main task is to give students theoretical and practical knowledge on animal health, as well as for the timely detection of early clinical signs and pre-clinical diseases plan a system of veterinary diagnostic and treatment preventive measures, prevention and treatment of sick animals.

Purpose of studying of the discipline

Medical examination is a system of planned diagnostic and therapeutic preventive measures aimed at timely detection of early subclinical and clinical signs of animal disease, prevention of diseases and treatment of patients.

Learning Outcomes

ON2 Apply professional skills in practice during therapeutic, diagnostic, and surgical procedures.

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

Learning outcomes by discipline

1) theoretical and practical knowledge on the medical examination of animals, as well as for the timely detection of early clinical signs and preclinical diseases, plan a system of veterinary diagnostic and therapeutic and preventive measures for the prevention and treatment of sick animals.

2) studies the principles of developing a plan for systematic inspection of animals in order to obtain high-quality products from farm animals.

3) Knows both theoretical and practical knowledge of the features of the clinical diagnosis of fur-bearing animals and birds, as well as some digital data of biological features, morphological and biochemical composition of blood, urine of fur-bearing animals and birds.

Prerequisites

Latin Veterinary Terminology

Postrequisites

Veterinary propedeutics

Clinical diagnosis of fur animals and birds

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline gives students both theoretical and practical knowledge about the features of clinical diagnosis of fur animals and birds, digital data of biological features, morphological and biochemical composition of blood, urine fur animals, notions about syndromes, symptoms, prognosis and justification; demonstrates basic knowledge in the field of veterinary medicine, the ability to make a correct diagnosis and to effectively use drugs.

Purpose of studying of the discipline

Theoretical and practical training of students for timely and correct diagnosis, for the prevention of diseases of carnivorous animals.

Learning Outcomes

ON2 Apply professional skills in practice during therapeutic, diagnostic, and surgical procedures.

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

Learning outcomes by discipline

1) Understands the concepts of syndromes, their classification.

2) Teaches both theoretical and practical knowledge of the features of the clinical diagnosis of fur-bearing animals and birds, as well as some digital data of biological features, morphological and biochemical composition of blood, urine of fur-bearing animals and birds.

3) Demonstrates basic knowledge in the field of veterinary medicine, the ability to make a correct diagnosis and effectively use existing medicines.

Prerequisites

Latin Veterinary Terminology

Postrequisites

Veterinary propedeutics

Fundamentals of diagnostic and therapeutic techniques in veterinary medicine

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies symptoms and syndromes in the assessment of the disease state of animals, auscultation of the chest, examination and comparative evaluation of the diagnosis of the thyroid gland, thoracic organs (larynx, trachea), vesicular respiration, bronchial physiologic, bronchial pathologic, plegaphonia, rhinography, studies of the respiratory system by graphic methods: pneumography, trial thoracic puncture; provides a scheme for clinical examination of farm animals and pets.

Purpose of studying of the discipline

** mastering veterinary diagnostic methods and techniques of animal treatment.*

Learning Outcomes

ON2 Apply professional skills in practice during therapeutic, diagnostic, and surgical procedures.

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

Learning outcomes by discipline

- 1) studies symptoms and syndromes in assessing the painful condition of animals, chest auscultation, examination and comparative evaluation of the diagnosis of the thyroid gland, chest organs (larynx, trachea), vesicular respiration, bronchial physiological, bronchial pathological, plegaphony, rhinography, studies of the respiratory system by graphic methods: pneumography, trial puncture of the chest.*
- 2) Provides a scheme of clinical research of agricultural and domestic.*
- 3) Owns veterinary diagnostic methods and methods of treatment of animals.*

Prerequisites

Latin Veterinary Terminology

Postrequisites

Veterinary propedeutics

Comparative physiology of agricultural animals

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies the comparison of the peculiarities of physiological functions and mechanisms, regularities, and technologies of animal housing, as well as contains material on the processes of vital activity of a healthy organism, taking into account the unity and interaction with the external environment; cognition of regularities of activity of organs, tissues, cells, systems, and general and specific mechanisms; fundamental bases of policy sciences of general biological character.

Purpose of studying of the discipline

The study of the laws of life processes at different structural levels (metabolism, respiration, nutrition, etc.); identification of the mechanisms of interaction between individual systems of the body, the body and the external environment; verification of the qualitative difference in the functions of organisms of different degrees of evolutionary development and in different environmental conditions; study of the patterns of formation of various functions in the course of individual development of the body is the educational basis of Veterinary Medicine and zootechnics, knowledge of which is especially necessary for a veterinarian in effective preventive work, Diagnosis, Treatment, Organization of positive storage, effective use of animals, increasing their productivity. It is also necessary for related specialties to evaluate the quality of animal raw materials and take a special place in their processing, mastering ways and methods to improve the technology for this purpose. It involves studying the essence of the phenomena of life, determining the methods of its management and orientation.

Learning Outcomes

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

Learning outcomes by discipline

- 1) formulate definitions and general concepts about the laws of the structure of organs*
- 2) Apply the knowledge gained during the subsequent study of other fundamental and specialized disciplines obtained on the basis of modern achievements of physiology in animal physiology, as well as their application in future activities in veterinary medicine*
- 3) summarize the basic knowledge gained about the various functions of the animal body*

Prerequisites

Domestic Animal Anatomy

Postrequisites

Veterinary cytology, histology, embryology

Animal Physiology

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies the physiology of individual systems and organs, consists of general and cellular physiology, and also provides a systematic approach to the study of the vital activity of the organism: digestive, circulatory, respiratory, endocrine and reproductive systems, immunity developments, physiology and neurophysiology of animal species. The discipline considers a holistic, complex and dynamic system in active interaction with the environment.

Purpose of studying of the discipline

The study of the laws of life processes at different structural levels (metabolism, respiration, nutrition, etc.); identification of the mechanisms of interaction between individual systems of the body, the body and the external environment; verification of the qualitative difference in the functions of organisms of different degrees of evolutionary development and in different environmental conditions; study of the patterns of formation of various functions in the course of individual development of the body is the educational basis of Veterinary Medicine and zootechnics, knowledge of which is especially necessary for a veterinarian in effective preventive work, Diagnosis, Treatment, Organization of positive storage, effective use of animals, increasing their productivity. It is also necessary for related specialties to evaluate the quality of animal raw materials and take a special place in their processing, mastering ways and methods to improve the technology for this purpose. It involves studying the essence of the phenomena of life, determining the methods of its management and orientation.

Learning Outcomes

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

Learning outcomes by discipline

Apply biological knowledge in the development of special disciplines, for the implementation of therapeutic and preventive and sanitary measures.

1) describe the basic laws that form the basis of physiological processes, functions of organs and systems, mechanisms of regulation of physiological processes, normal physiological parameters of the animal body

2) To recognize the types and age characteristics of the animal organism, classification of organ types by origin, shape, function, location and internal structure

3) analyze the connection of the system of internal organs with the body with the external environment, the principles of organ construction

Prerequisites

Domestic Animal Anatomy

Postrequisites

Pathological physiology of animals

Animal ethology

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline deals with the study of biological factors of animal behavior, as well as its importance in the process of development and phylogenesis for adaptation to the environment. Animal behavior is the external manifestation of the vital activity of a living organism and includes any type of activity shown by an individual in response to changes in the environment and when necessary to meet any internal needs.

Purpose of studying of the discipline

Formation of a systematic and integral representation of a wide area of animal behavior.

Learning Outcomes

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

Learning outcomes by discipline

1) Demonstrates knowledge in the field of biology, ethology concretizes biological diversity without taking animals out of the general diversity of organisms

2) considers the part and defining this part not by direct comparison with other forms, but through the whole – by finding the place of animals in the entire system of organisms

3) To use the method of cognition of animals, on the one hand, revealing general ethological and general biological facts, and on the other – using the general theory of the origin and development of life.

Prerequisites

Domestic Animal Anatomy

Postrequisites

Veterinary cytology, histology, embryology

State Veterinary Service

Discipline cycle	Basic disciplines
Course	4
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies quality control in accordance with the regulatory technical documentation. The discipline studies the system of organizations, institutions of veterinary profile, at enterprises, transport, carrying out a complex of anti-epizootic measures. Knows the regulatory documents in the field. Types of quality control of raw materials of animal origin. Demonstrates basic knowledge in veterinary reporting, able to make a decision when monitoring, production and implementation of veterinary documents.

Purpose of studying of the discipline

a brief history of the development of the veterinary service in Kazakhstan. The structure of the Veterinary Service of the Republic of Kazakhstan. To determine the cost-effectiveness of preventive or curative measures of the selected disease.

Learning Outcomes

ON 7 Conduct veterinary-sanitary expertise and ensure the food safety of livestock and plant products.

ON 8 Implement veterinary-sanitary supervision over the facilities under the control of the veterinary-sanitary service.

ON 9 Organize the protection of the population from diseases common to animals and humans.

Learning outcomes by discipline

1) Knows a brief history of the development of the veterinary service in Kazakhstan. The structure of the Veterinary Service of the Republic of Kazakhstan.

2) Determines the economic effectiveness of preventive or curative measures of the disease. Statistical data as a source of determination, establishment of morbidity, mortality rates, specific values of economic damage and costs, other average values used in the analysis of the effectiveness of veterinary measures.

3) Demonstrates basic knowledge in veterinary reporting, is able to make decisions during monitoring, production and sale of veterinary documents.

Prerequisites

Introduction to the specialty

Postrequisites

Industrial practice 3

International veterinary legislation

Discipline cycle	Basic disciplines
Course	4
Credits count	5
Knowledge control form	Examination

Short description of discipline

It forms skills for studying the activities of the international Epizootic Bureau, the code of health of terrestrial animals, risk analysis for import, trade measures, procedures for import and export, veterinary certification, the role of the veterinary service in food safety, animal welfare, as well as regulatory documents for accounting and reporting, accompanying documents and plans for veterinary measures to prevent the occurrence of animal diseases, natural epizootic burdens from outside, phytosanitary biological and economic consequences.

Purpose of studying of the discipline

Protecting animals from disease, releasing veterinary safe livestock products and protecting the public from diseases common to humans and animals.

Learning Outcomes

ON 7 Conduct veterinary-sanitary expertise and ensure the food safety of livestock and plant products.

ON 8 Implement veterinary-sanitary supervision over the facilities under the control of the veterinary-sanitary service.

ON 9 Organize the protection of the population from diseases common to animals and humans.

Learning outcomes by discipline

Improving the quality and safety of food raw materials and food products is one of the socio-economic tasks, the solution of which depends on the qualified use of scientific and technical achievements progress in agricultural and processing industries and scientific justified approaches to the production, storage, control and implementation system raw materials and products of animal and vegetable origin.

Prerequisites

Introduction to the specialty

Postrequisites

Basic and profile disciplines of the EP

Organization of veterinary business

Discipline cycle	Basic disciplines
Course	4
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies the legislation of the Republic of Kazakhstan, the basics and organizational structure of veterinary affairs, organization of veterinary affairs in the city and in rural areas, basics of veterinary entrepreneurship, economics of veterinary measures, planning and organization of veterinary measures, organization of veterinary supervision, issues of veterinary accounting, reporting and paperwork. It examines the organization of veterinary service in districts, cities and farms.

Purpose of studying of the discipline

State departmental veterinary service, private veterinary service.

Learning Outcomes

ON 7 Conduct veterinary-sanitary expertise and ensure the food safety of livestock and plant products.

ON 8 Implement veterinary-sanitary supervision over the facilities under the control of the veterinary-sanitary service.

ON 9 Organize the protection of the population from diseases common to animals and humans.

Learning outcomes by discipline

1) Knows the plans of preventive and antiepidemic measures, the organization of veterinary measures, the economics of veterinary measures, the organization of veterinary supervision, etc.

2) Knows the basics of the organization of the veterinary service;

3) Develops plans for preventive and antiepidemic measures, provides scientific and economic justification for veterinary measures, organizes veterinary and sanitary supervision and examination of products and raw materials of animal origin, etc.

Prerequisites

Introduction to the specialty

Postrequisites

Industrial practice 3

Veterinary Formulation

Discipline cycle	Profiling discipline
Course	4
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies the technological processes of manufacturing medicinal forms taking into account the scientific and technical documentation (STD), the rules for preparing medicinal forms, their labeling and packaging, storage, transportation and use of medicines in accordance with the order of scientific and technical documentation. The subject of the technology of medicinal preparations are substances, i.e. raw materials of animal or plant origin, as well as mineral and synthetic materials for the preparation of medications.

Purpose of studying of the discipline

students gain theoretical knowledge in the field of veterinary pharmacology, mastering methods of solving calculations for dosing and prescribing prescriptions for various dosage forms, as well as practical skills in the manufacture of various dosage forms.

Learning Outcomes

ON2 Apply professional skills in practice during therapeutic, diagnostic, and surgical procedures.

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

Learning outcomes by discipline

1) Use the acquired knowledge to build models of real methods and methods of pharmacotherapy

2) Understand the essence of the main technological methods used in pharmaceutical production

3) Apply knowledge in the manufacture of medicines

Prerequisites

Veterinary Pharmacology

Postrequisites

Feed poisoning of animals

Hygiene of young farm animals and birds

Discipline cycle	Profiling discipline
Course	4
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies the influence of climate, feed, soil, water, maintenance and care on the organism of poultry and animals. It prepares recommendations that contribute to high productivity, rational feeding, maintenance, care, and also breeding, ensuring high productivity of poultry and animals. It teaches the elimination and weakening of unfavorable factors affecting the health and hygiene of young animals.

Purpose of studying of the discipline

Preparation of future livestock specialists to meet the needs of the country's livestock products, creating normal conditions in a certain direction, in order to obtain a rich harvest due to the physiological and large-scale characteristics of animals.

Learning Outcomes

ON 7 Conduct veterinary-sanitary expertise and ensure the food safety of livestock and plant products.

ON 8 Implement veterinary-sanitary supervision over the facilities under the control of the veterinary-sanitary service.

ON 9 Organize the protection of the population from diseases common to animals and humans.

Learning outcomes by discipline

1) Show the algorithm for drawing up preventive measures for the hygiene of young farm animals and birds

2) Describe and propose modes of keeping farm animals and birds

3) Apply the skills of solving the tasks of a complex of zoohygienic measures aimed at preventing the occurrence and spread of diseases among young farm animals and birds

Prerequisites

Private zoogiena

Postrequisites

Veterinary and sanitary examination of animal raw materials

VSE of crop, fish and bee products

Discipline cycle	Profiling discipline
Course	4
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies the sanitary examination of foods of plant origin. It teaches methods for assessing the quality of plant products based on ongoing research; introduces the classification of pond and lake-commercial fish farms, beekeeping products in apiaries. It considers methods for determining nutritional and biological value. It clarifies general requirements for sampling for examination, the algorithm for conducting organoleptic, laboratory researches of fish and bee products for good quality.

Purpose of studying of the discipline

in theoretical knowledge and practical work, students are taught to carry out veterinary and sanitary assessment of the degree of safety and quality of poultry, fish, bee and crop products in order to fulfill the tasks set before veterinary sanitary expertise.

Learning Outcomes

ON 7 Conduct veterinary-sanitary expertise and ensure the food safety of livestock and plant products.

ON 8 Implement veterinary-sanitary supervision over the facilities under the control of the veterinary-sanitary service.

ON 9 Organize the protection of the population from diseases common to animals and humans.

Learning outcomes by discipline

- 1) Determine the procedure for veterinary and sanitary examination of fish and fish products, bee products. Describe the main technological processes of production and methods of product quality control.
- 2) Organize organoleptic, laboratory studies, veterinary and sanitary examination of fish farming and beekeeping products. Determine the sanitary quality assessment.
- 3) Apply the acquired skills in solving tasks to ensure the food safety of animal products, compliance with quality standards.

Prerequisites

Veterinary-sanitary examination

Postrequisites

Veterinary and sanitary examination of animal raw materials

Feed poisoning of animals

Discipline cycle	Profiling discipline
Course	4
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline examines the causes of feed poisoning, explains the mechanisms of toxic action of poisons, considers clinical symptoms, evaluates pathological-anatomical changes. It discusses methods of diagnosis, treatment, and prevention of animal poisonings. It demonstrates regularities of toxic action of poisons on the organisms of birds, fur-bearing animals, and fish. It studies manifestations and features of chemical toxicoses, phytotoxicoses, and toxicoses caused by animal origin poisons.

Purpose of studying of the discipline

The purpose of studying the discipline "Animal feed poisoning" is for students to gain theoretical and practical knowledge in the field of veterinary toxicology of animal feed, to master the skills of analyzing anamnestic information, searching for rational methods when planning preventive and curative measures on this issue.

The modern development of society dictates the study of issues related to the protection of human health and the production of environmentally friendly food of animal origin.

When preparing veterinary specialists for the course "Animal feed poisoning", the following goals are set:

- to scientifically substantiate the effect of chemicals on the body of animals, taking into account the conditions of occurrence and causes of poisoning;
- based on the data of chemical and toxicological examination with the analysis of symptoms, pathological picture and anamnestic information, to make a timely and accurate diagnosis;
- it is scientifically justified to carry out preventive measures for

Learning Outcomes

ON2 Apply professional skills in practice during therapeutic, diagnostic, and surgical procedures.

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

Learning outcomes by discipline

- 1) studies the causes of food poisoning, explains the mechanisms of toxic effects of poisons, examines clinical symptoms, evaluates pathoanatomic changes.
- 2) Knows all the causes of animal poisoning, has the skills and techniques of using this knowledge for theoretical and practical purposes
- 3) Knows the active principles, fodder and poisonous plants and is able to apply to specific tasks

Prerequisites

Veterinary toxicology

Postrequisites

Industrial practice 3

Veterinary and sanitary examination of animal raw materials

Discipline cycle	Profiling discipline
Course	5
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies and defines the rules of veterinary and sanitary assessment, methods of sanitary and hygienic research of food products and technical raw materials of animal origin, veterinary and sanitary requirements for the collection of blood, intestines, endocrine enzyme raw materials, rawhide materials. It considers the production of feed of animal origin, classification and commodity characteristics of VSE (veterinary sanitary examination) endocrine-enzyme raw materials, intestines of individual animal species, primary processing requirements, technical disposal of confiscations, the main types of rawhide materials.

Purpose of studying of the discipline

students are trained in theoretical knowledge and practical work to carry out veterinary sanitary assessment, production technology, standardization and certification of animal products and raw materials in order to fulfill the tasks set for veterinary sanitary examination.

Learning Outcomes

ON 7 Conduct veterinary-sanitary expertise and ensure the food safety of livestock and plant products.

ON 8 Implement veterinary-sanitary supervision over the facilities under the control of the veterinary-sanitary service.

ON 9 Organize the protection of the population from diseases common to animals and humans.

Learning outcomes by discipline

* be able to conduct research using state standards in case of contamination of livestock products with foreign substances and apply the acquired knowledge to resolve the situation encountered in the farm.

Prerequisites

Veterinary-sanitary examination

Postrequisites

Final examination

Organization of artificial insemination of animals and birds

Discipline cycle	Profiling discipline
Course	5
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline explains the basics of performing artificial insemination of farm animals and birds; studies the physiological and anatomical features of the reproductive apparatus of females and males. After studying the sexual reflexes of females and males, the discipline introduces the preparation of an artificial vagina, methods of obtaining ejaculate, evaluation, dilution and storage of semen. It examines the organization of artificial insemination of cows, ewes, mares, sows, birds and rabbits.

Purpose of studying of the discipline

Creating optimal conditions for feeding, keeping animals and birds, checking productivity and conducting their comprehensive assessment. Selection and evaluation of high-quality producers and queens.

Learning Outcomes

ON2 Apply professional skills in practice during therapeutic, diagnostic, and surgical procedures.

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

Learning outcomes by discipline

The aim is to equip future specialists with comprehensive and in-depth knowledge in the field of artificial insemination of animals and birds.

Prerequisites

Veterinary gynecology

Postrequisites

Final examination

Veterinary epidemiology

Discipline cycle	Profiling discipline
Course	5
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline studies the history of the disease and its spread, etiology, economic damage, pathogenesis, epizootic process and epizootological features of immunity and diagnosis, measures for the prevention and control of infectious diseases of various species of animals and birds; studying the means and methods of prevention and control of infectious diseases common to different species of animals and humans; development of measures for the prevention and elimination of infectious diseases of animals and birds on this basis.

Purpose of studying of the discipline

The study of means and methods of prevention and control of infectious diseases common to different species of animals and humans.

Learning Outcomes

ON2 Apply professional skills in practice during therapeutic, diagnostic, and surgical procedures.

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

ON6 Conduct epidemiological monitoring for infectious and invasive diseases.

Learning outcome by discipline

- provide logistical and special equipment, organize and directly perform the work of a veterinarian with contagiously sick animals in accordance with the requirements of existing veterinary and sanitary rules and techniques

Prerequisites

Epizootology and infectious diseases of animals

Postrequisites

Final examination

Invasive diseases of fish and bees

Discipline cycle	Profiling discipline
Course	5
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline provides the veterinarian with the necessary knowledge on the morphology and biology of pathogens of invasive diseases, pathogenesis, diagnosis, therapy, as well as prevention of infectious and noncontagious diseases of fish and bees, the causes of which are various organisms of animal origin which parasitizes on the body of an animal (insect), in order to prevent the spread and economic damage of invasive diseases of fish and bees.

Purpose of studying of the discipline

Formation of knowledge on the basics of general pathology, parasitology and epizootology, which are necessary for understanding the processes occurring in a sick body, the general patterns of parasitism and epizootic process.

Learning Outcomes

ON2 Apply professional skills in practice during therapeutic, diagnostic, and surgical procedures.

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

ON6 Conduct epidemiological monitoring for infectious and invasive diseases.

Learning outcomes by discipline

Mastering students` knowledge on the organization and implementation of measures for the prevention of diseases, rehabilitation and treatment of fish in fish farms of various types, performing work aimed at protecting fishery reservoirs from the spread of infectious diseases of fish and other aquatic organisms; the ability to find out the epizootic situation and diagnose fish diseases in natural reservoirs, commercial farms and fish hatcheries; acquiring knowledge about the rules for the transportation of fish and other aquatic organisms; veterinary and sanitary requirements for the design and construction of fish farms.

Prerequisites

General Veterinary Parasitology and Helminthology

Postrequisites

Final examination

Veterinary Ophthalmology

Discipline cycle	Profiling discipline
Course	5
Credits count	4
Knowledge control form	Examination

Short description of discipline

The discipline that studies the anatomical structure and physiology of the eye, diseases, and the prevention of eye diseases is essential in the preparation of a veterinary doctor. It is necessary to have knowledge and proficiency in applying methods of treatment and prevention, analyzing historical data, possessing clinical reasoning, synthesizing clinical facts, conducting laboratory research, and, with the correct collection of historical data, developing effective treatment methods and establishing an objective diagnosis.

Purpose of studying of the discipline

Eye diseases in animals are very common. They can occur as a result of the direct action of various mechanical, chemical and physical injuries or develop in some infectious, parasitic and non-infectious diseases.

Learning Outcomes

ON2 Apply professional skills in practice during therapeutic, diagnostic, and surgical procedures.

ON 4 Apply biological knowledge when mastering specialized disciplines to carry out therapeutic, preventive, and sanitary measures.

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

Learning outcomes by discipline

Demonstrates basic and profiling knowledge in the field of providing qualified medical care to animals and birds with eye diseases and carrying out preventive measures.

Prerequisites

General Veterinary Surgery

Postrequisites

Final examination

Veterinary and sanitary control at the border and transport

Discipline cycle	Profiling discipline
Course	5
Credits count	4
Knowledge control form	Examination

Short description of discipline

This discipline studies and addresses issues related to the movement and transportation of goods across the state customs border and within the country – the Republic of Kazakhstan. It focuses on the control, veterinary-sanitary supervision, and monitoring of goods to prevent the entry of parasitic and infectious diseases potentially hazardous to human health into the country. The discipline outlines methods for controlling the quality of products and raw materials of plant and animal origin.

Purpose of studying of the discipline

Theoretical knowledge and practical skills of students on the procedure and rules of transportation of objects (objects) and goods subject to veterinary and sanitary supervision and control across the state customs borders of the Republic of Kazakhstan.

Learning Outcomes

ON 7 Conduct veterinary-sanitary expertise and ensure the food safety of livestock and plant products.

ON 8 Implement veterinary-sanitary supervision over the facilities under the control of the veterinary-sanitary service.

ON 9 Organize the protection of the population from diseases common to animals and humans.

Learning outcomes by discipline

- features of manufacturing, processing, processing, transportation, storage and use in consumption;
- veterinary and sanitary requirements for any tracked objects (objects) and "cargo" related to import, export, transit and domestic transportation and 196 cattle drives;
- Veterinary and sanitary rules and procedures and necessary actions and measures carried out by the state veterinary and Sanitary supervision and control service at controlled facilities and during transportation at borders and transport, etc.

Prerequisites

Zoonoses

Postrequisites

Final examination

Veterinary Traumatology

Discipline cycle	Profiling discipline
Course	5

Credits count	4
Knowledge control form	Examination

Short description of discipline

This discipline is one of the leading clinical subjects that shapes the clinical reasoning of a veterinary doctor. It covers the diagnosis, etiology of diseases, treatment, as well as the prevention of surgical diseases in animals, including many non-infectious, infectious, and invasive diseases. It teaches the proper application of prevention and treatment of general pathology, caused not only by trauma but also by poor housing conditions and improper exploitation of animals.

Purpose of studying of the discipline

Students gain in-depth knowledge on the diagnosis of injuries of various etiologies, taking into account the features that contribute to the occurrence of injuries of industrial, natural and other factors: the development of methods for the treatment and prevention of injuries of farm animals.

Learning Outcomes

ON2 Apply professional skills in practice during therapeutic, diagnostic, and surgical procedures.

ON 5 Make decisions when prescribing treatment for diseases with various clinical symptoms and syndromes.

Learning outcomes by discipline

- possess the skills and techniques of clinical examination of live animals and the use of this knowledge in theoretical and practical laboratories for the diagnosis and treatment of injuries of farm animals

- to clarify the basic concepts and definitions of this discipline:

- be able to use the acquired knowledge for the diagnosis, treatment and prevention of injuries of farm animals:

Prerequisites

General Veterinary Surgery

Postrequisites

Final examination

Technology, hygiene, sanitation and veterinary and sanitary expertise of meat and dairy products

Discipline cycle	Profiling discipline
Course	5
Credits count	4
Knowledge control form	Examination

Short description of discipline

This discipline studies the technology of meat and dairy production, various raw material processing technologies, the production of high-quality products, veterinary-sanitary control over the quality of animal products and raw materials, and the implementation of veterinary-sanitary measures in meat and dairy production facilities. It covers the technologies of production, sanitation, and veterinary-sanitary expertise of meat products such as sausages, canned meat products, horse meat, large horned cattle, sheep, pigs, and fermented milk products.

Purpose of studying of the discipline

Technology of production of meat and dairy products, various technologies of processing raw materials and production of high-quality products and veterinary and sanitary supervision of the quality of animal products and raw materials.

Learning Outcomes

ON 7 Conduct veterinary-sanitary expertise and ensure the food safety of livestock and plant products.

ON 8 Implement veterinary-sanitary supervision over the facilities under the control of the veterinary-sanitary service.

ON 9 Organize the protection of the population from diseases common to animals and humans.

Learning outcomes by discipline

-conduct veterinary and sanitary expertise of meat and dairy products;;

- carry out veterinary and sanitary measures at all technological stages of meat and dairy production;

- carry out veterinary and sanitary control over the transportation, storage, and processing of meat and dairy products;

- at meat and dairy production facilities

Prerequisites

VSE of crop, fish and bee products

Postrequisites

Final examination