

Learning outcomes

Field of study: Veterinary Medicine
Level: uniform master's studies
Profile: general academic
Form: stationary
Leading discipline: Veterinary medicine 100%

Knowledge

General

In terms of knowledge, the graduate knows and understands:

Code	Contents
O.W1	Knows to an extensive degree and describes in detail the principles and mechanisms underlying animals health, disease formation and their treatment - from the level of cells, through the organ, animal, to the entire animal population;
O.W2	Knows to an extensive degree, describes in detail and explains the development, structure, functioning, behaviours and physiological mechanisms of animals in normal conditions, as well as the mechanisms of disorders in pathological conditions;
O.W3	Explains and interprets the etiology, pathogenesis and clinical symptoms of diseases occurring in individual animal species, and knows the principles of therapeutic procedure, as well as the methods of diagnostic and therapeutic procedure appropriate for the diseases occurring in animals;
O.W4	Knows the principles of therapeutic procedure, as well as the methods of diagnostic and therapeutic procedure appropriate for the diseases occurring in animals;
O.W5	Characterises in detail the methods of using veterinary medicinal products, aimed at prophylaxis and treatment of animals, as well as at guaranteeing food chain safety and environmental protection;
O.W6	Presents the biology of infectious factors that cause diseases transmitted between animals, as well as anthroozoonoses, taking into account the mechanisms of disease transmission and defense mechanisms of the macroorganism;
O.W7	Specifies the principles of conducting clinical examination, in accordance with the plan of clinical examination, analysis of clinical symptoms and anatomopathological changes;
O.W8	Knows to an extensive degree and distinguishes the principles of animal raising and husbandry, taking into account the principles of animal nutrition, principles of maintaining their welfare and principles of production economics;
O.W9	Identifies and describes in detail the principles of management and utilisation of animal by-products and waste associated with animal production;
O.W10	Presents in detail the principles of examination of the slaughter animals, meat and other Animals products;
O.W11	Explains in detail the principles of consumer health protection

- O.W12 Explains in detail the principles of appropriate supervision over the production of foodstuffs of animals origin;
- O.W13 Knows to an extensive degree the standards, principles and conditions of animal production technology and maintaining the hygiene of technological process;
- O.W14 Describes legal standards associated with the activities of veterinary physicians;
- O.W15 Presents the basic IT and biostatistic methods used in veterinary medicine.

Detailed

A. Basic sciences

In terms of knowledge, the graduate knows and understands:

Code	Contents
A.W1	Knows to an extensive degree and understands the structure of the animal organism: cells, tissues, organs and systems
A.W2	Knows to an extensive degree, describes in detail and explains the structure, activity and regulation mechanisms of organs and systems of the animal organism (respiratory, digestive, circulatory, excretory, nervous, reproductive, hormonal, immune system and skin), as well as their integration at the organism level;
A.W3	Presents the development of organs and the entire animal organism in relation to the mature organism
A.W4	Characterises in detail the metabolic processes at the molecular, cellular, organ and system levels
A.W5	Knows to an extensive degree and understands the principles of water and electrolyte metabolism, acidbase balance of animal organism, as well as the mechanism of system homeostasis;
A.W6	Characterises the basic reactions of organic and inorganic compounds in aqueous solutions
A.W7	Presents the physical laws describing flow of fluids and factors affecting vascular resistance of blood flow;
A.W8	Knows to an extensive degree and understands the physicochemical and molecular foundations of the operation of sensory organs
A.W9	Describes in detail the mechanism of neurohormonal regulation, reproduction, aging and death
A.W10	Knows to an extensive degree and understands the principles and mechanisms underlying animals health, disease formation and their treatment - from the level of cells, through the organ, animal, herd of animals, to the entire animal population;
A.W11	Explains the correlation between factors that disturb the balance of biological processes of the Animals body and physiological and pathophysiological changes
A.W12	Describes and interprets the pathophysiological changes occurring in cells, tissues, organs and systems of animals, as well as biological mechanisms, including immunological mechanisms, and therapeutic possibilities that allow recovery

A.W13	Knows to an extensive degree the biology of infectious factors that cause diseases transmitted between animals, as well as anthroozoonoses, taking into account the mechanisms of disease transmission and defense mechanisms of the organism
A.W14	Describes and characterises the principles and processes of inheritance, genetic disorders and the basics of genetic engineering
A.W15	Knows to an extensive degree and presents the basics of microbiological diagnostics
A.W16	Knows to an extensive degree and understands the mechanisms of operation, activity in the system, side effects and mutual interactions of the groups of veterinary medicinal products used in target animal species
A.W17	Describes in detail the application of antibacterial and antiparasitic chemotherapy
A.W18	Presents the mechanisms of drug resistance, including multi-drug resistance by microorganisms and cancer cells;
A.W19	Knows to an extensive degree the procedures and elements necessary to issue a prescription for veterinary medicinal products
A.W20	Knows and understands the Polish and Latin medical nomenclature
A.W21	Describes and characterises the types of poisonings occurring in animals and the principles of diagnostic and therapeutic procedure in the case of poisonings
A.W22	Knows and understands the veterinary physician's code of ethics
A.W23	Presents the concepts in the scope of intellectual property protection

B. Professional knowledge

In terms of knowledge, the graduate knows and understands:

Code	Contents
B.W1	Knows to an extensive degree as well as understands disorders at the level of the cell, tissue, organ, system and organism, in the course of the disease
B.W2	Explains the mechanisms of organ and systemic pathologies
B.W3	Describes the causes and symptoms of anatomopathological changes, principles of treatment and prophylaxis in individual disease entities
B.W4	Knows and understands the principles of diagnostic procedure, taking into account the differentia diagnostics and therapeutic procedure
B.W5	Presents the principles of conducting clinical examination and monitoring animal health
B.W6	Explains the method of handling clinical data, as well as results of laboratory tests and additional tests
B.W7	Knows and interprets the regulations of the law, rules for issuing judgments and preparing opinions for the needs of courts, state, local government and professional administration bodies
B.W8	Knows to an extensive degree the method of procedure in the case of suspicion or diagnosing diseases that are subject to the obligation of disease eradication or its registration
B.W9	Describes the principles of ensuring animal welfare
B.W10	Knows and understands the principle of functioning of the parasite-host system, as well as basic disease symptoms and pathological changes caused by parasites in the host organism;
B.W11	Characterises breeds within animal species, as well as principles of animal raising and husbandry

B.W12	Knows and understands the assumptions of animal pairing, methods of fertilization, reproduction biotechnology, as well as breeding selection
B.W13	Presents the principles of animal nutrition, taking into account the differences in species and age
B.W14	Presents the principles of planning and analysing the feed doses
B.W15	Presents the methods of management and utilisation of animal by-products and waste associated with animal production
B.W16	Knows and describes the principles of functioning of the Veterinary Inspection, also in the aspect of public health
B.W17	Presents the principles of consumer health protection, which are ensured by appropriate supervision over the production of foodstuffs of animal origin
B.W18	Characterises the control systems in accordance with HACCP (Hazard Analysis and Critical Control Points) procedures
B.W19	Knows to an extensive degree the procedures of pre- and post-mortem inspection
B.W20	Knows and interprets the conditions of hygiene and technology of animal production;
B.W21	Knows to an extensive degree, interprets and observes the principles of food law
B.W22	Knows and understands the principles of economics of the animal production

C. Supplementary classes

In terms of knowledge, the graduate knows and understands:

Code	Contents
C.W1	Knows and understands vocabulary and grammatical structures of at least one foreign language, which is a language of international communication, at the B2+ level of the Common European Framework of Reference for Languages, as well as specialised terminology in the scope of veterinary medicine, which is necessary in professional activity;
C.W2	Presents the functioning of institutions associated with veterinary activities and the social role of a veterinary physician
C.W3	Describes the rules of occupational health and safety in veterinary activities

Skills General

In terms of skills, the graduate can:

Code	Contents
O.U1	Conducts clinical examination of the animal in accordance with the principles of medical art.
O.U2	Analyses and interprets pathological changes and results of laboratory tests and additional tests, formulates the diagnosis of given disease, taking into account the differential diagnostics, and undertakes therapeutic or prophylactic actions;
O.U3	Plans the diagnostic procedure
O.U4	Monitors health of the herd, as well as undertakes action in the case of a disease that is subject to the obligation of disease eradication or its registration;
O.U5	Performs pre- and post-mortem inspection of slaughter animals and examination of meat, as well as other products of animal origin;

O.U6	Performs activities that are associated with the veterinary supervision, including trade in animals, as well as sanitary and veterinary conditions of animal gathering locations and processing products of animal origin
O.U7	Issues veterinary medical opinion and certificate
O.U8	Uses Latin medical nomenclature to the extent necessary to understand and describe medical activities, as well as state of animal health, diseases, pathological changes and conditions
O.U9	Applies IT systems used to support the health facility for animals, herd and analysis of epizootic situation
O.U10	Performs basic statistical analysis and uses appropriate methods for presentation of the results
O.U11	Uses vocabulary and grammatical structures of a foreign language, which constitutes the language of international communication, in the scope of creating and understanding written and oral statements, both general and specialised in the scope of veterinary;
O.U12	Maintains physical fitness that is required for the work with certain animal species

Detailed

A. Basic sciences

In terms of skills, the graduate can:

Code	Contents
A.U1	Is able to use the knowledge of the laws of physics in order to explain the impact of external factors (temperature, pressure, electromagnetic field, ionizing radiation) on the animal body
A.U10	Performs basic microbiological diagnostics
A.U11	Is able to choose and apply rational empirical and targeted antibacterial chemotherapy, taking into account the target species of animals
A.U12	Communicates with the clients and other veterinary physicians
A.U13	Is able to listen and provide answers with the use of understandable language, appropriate to the given situation
A.U14	Prepares transparent case descriptions and keeps documentation, in accordance with regulations applicable in this scope, in the form understandable to the animal owner and legible to other veterinary physicians
A.U15	Is able to work in a multidisciplinary team
A.U16	Interprets the responsibility of veterinary physician in regard to the animal, its owner, society, as well as the natural environment
A.U17	Estimates the toxicological danger in specific technological groups of farm animals
A.U18	Assesses the economic and social conditions, in which the profession of veterinary physician is performed;
A.U19	Uses his/her professional skills to improve the quality of veterinary care, animal welfare, as well as public health;
A.U2	Uses the basic laboratory techniques, such as: qualitative analysis, titration, colourimetry, pH-metry, chromatography and electrophoresis of proteins and nucleic acids
A.U20	Organises and conducts veterinary practice (including calculation of the fees), as well as issues invoices, keeps financial and medical documentation, and uses

	IT systems for effective communication, collection, processing, transmission and analysis of information
A.U21	Understands the need of continuing education, in order to ensure continuous professional development
A.U22	Adapts to the changing situation on the labour market
A.U23	Is able to use the advice and help of specialised organisational units or persons in the scope of problem solving.
A.U3	Calculates the molar and percentage concentrations of substances and compounds in isoosmotic solutions
A.U4	Describes changes in functioning of the organism in the situation of homeostasis disorders
A.U5	Predicts the direction of biochemical processes, depending on the energy state of the cells
A.U6	Explains the anatomical basis of physical examination, taking into account the individual animals species;
A.U7	Defines physiological state as the animal's adaptation to the changing environmental factors
A.U8	Recognises (in the images from optical microscope) histological structures corresponding to organs, tissues and cells, and is able to formulate their description, interpret their structure and relations between their structure and activity, taking into account the animal species from which they originate;
A.U9	Analyses genetic crosses and pedigree of the characteristics of individuals from respective species

B. Professional knowledge

In terms of skills, the graduate can:

Code	Contents
B.U1	Safely and humanely handles animals and instructs others in this scope
B.U2	Conducts a medical-veterinary interview in order to obtain precise information regarding individual animal or group of animals and its or their living environment
B.U3	Performs a full clinical examination of the animal
B.U4	Is able to provide first aid to animals in the case of haemorrhage, wounds, respiratory disorders, eye and ear injuries, loss of consciousness, cachexia, burns, tissue damage, internal injuries, cardiac arrest
B.U5	Assesses the nutritional status of the animal and provides advice in this scope;
B.U6	Collects and secures the samples for tests, as well as performs standard laboratory tests, and correctly analyses and interprets the results of laboratory tests
B.U7	Uses diagnostic equipment, including radiographic, ultrasound and endoscopic equipment, in accordance with its intended purpose and safety rules for animals and people, as well as interprets the results of tests obtained after its application
B.U8	Implements the appropriate procedures in the case of diagnosing a disease subject to the obligation of eradication or registration
B.U9	Obtains and uses information on authorised veterinary medicinal products
B.U10	Is able to prescribe and use veterinary medicinal products and medical materials, taking into account their safe storage and utilisation
B.U11	Uses the methods of safe sedation, general and local anaesthesia, as well as assessment and relief of pain

B.U12	Monitors the patient's condition in the intra- and post-operative period on the basis of basic life parameters
B.U13	Chooses and applies the appropriate treatment
B.U14	Implements the principles of surgical antisepsis and asepsis, as well as applies appropriate methods of sterilising equipment
B.U15	Assesses the need for performance of euthanasia of the animal and informs its owner about this fact in an appropriate manner, and euthanizes the animal in accordance with the principles of Professional ethics and appropriate handling of corpses
B.U16	Is able to perform an autopsy of the animal corpse, along with the description, as well as to take samples and secure them for transport
B.U17	Is able to perform pre- and post-mortem inspection
B.U18	Assesses the quality of products of animal origin
B.U19	Performs an epizootic investigation in order to determine the period of time, during which a contagious disease may have developed on the farm before suspecting or establishing its occurrence, place of origin of the source of the animal contagious disease, along with determination of other farms and the pathways of movement of people, animals and objects that could cause the spread of an infectious disease to or from the farm;
B.U20	Uses the collected information associated with the health and welfare of animals, and in selected cases also with productivity of the herd
B.U21	Develops and introduces preventive programs, which are appropriate for the individual animal species
B.U22	Is able to estimate the risk of occurrence of chemical and biological hazards in food of animal origin
B.U23	Is able to collect samples for monitoring tests for the presence of prohibited substances, chemical and biological residues, medicinal products and radioactive contamination in animals, in their secretions, excretions, tissues or organs, in products of animal origin, food, in water intended for animal drinking and in the feed;
B.U24	Assesses the fulfilment of requirements of the slaughter animals protection, taking into account the various methods of slaughter
B.U25	Assesses the risk of contamination, cross-contamination and accumulation of pathogens in veterinary facilities and in the natural environment, as well as introduces recommendations that minimise such risk.

C. Supplementary classes

In terms of skills, the graduate can:

Code	Contents
C.U1	Uses at least one foreign language, which is a language of international communication, at the B2+ level of the Common European Framework of Reference for Languages, including specialised terminology in the scope of veterinary, which is necessary in professional activity
C.U2	Critically analyses veterinary literature and draws conclusions on the basis of available literature
C.U3	Uses and processes information with the use of IT tools and modern sources of veterinary knowledge
C.U4	Effectively communicates with employees of control bodies and offices, as well as central and local government administration

Social competence

General

Within the scope of competence, the graduate is ready to:

Code	Contents
O.K1	Exhibits responsibility for his/her decisions made in regard to the people, animals and the natural environment
O.K2	Has an attitude consistent with ethical principles and undertakes actions based on the code of ethics in professional practice, as well as exhibits tolerance for attitudes and behaviours resulting from various social and cultural conditions
O.K3	Participates in resolution of the conflicts and exhibits flexibility in reactions to social changes
O.K4	Uses the objective sources of information
O.K5	Formulates conclusions from own measurements or observations
O.K6	Formulates opinions regarding various aspects of professional activity
O.K7	Is ready for reliable self-assessment, formulating constructive criticism in the scope of veterinary practice, accepting criticism of presented solutions, reacting to such criticism in a clear and material manner, also with the use of arguments referring to the available scientific achievements in the discipline;
O.K8	Deepens his/her knowledge and improves skills
O.K9	Communicates with the co-workers and shares knowledge
O.K10	Is ready to act in the conditions of uncertainty and stress
O.K11	Cooperates with representatives of other professions in the scope of public health protection
O.K12	Gets involved in the activities of professional and local government organisations