

SEM4

Name of the programme module	Topographical Anatomy
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	II
Term for a given field	IV
ECTS credits together with contact/no contact hours division	3 (2/1)
A unit providing the course	Department of Anatomy and Histology of Animals
Module objective	The aim of the module is to acquaint students with the knowledge that will enable them to aptly identify access (puncture) points to respective organs or nerves; competently identify the position of organs in relation to the skeleton or identify surface projections of an organ; carefully plan surgical access to body structures. After the course in topographical anatomy the students will be able to recognise organ images obtained with different imaging techniques.
Educational results	Knowledge: Students are acquainted with the topography of domestic animals; know the location of topographic points, location of internal organs and the clinical significance of respective body areas and animal organs
	Skills: Ability to identify access (puncture) points to respective organs or nerves, position of organs in relation to the skeleton, surface projection of an organ; ability to carefully plan surgical access to body structures. Knowledge of basic principles of clinical examination and ability to recognise organ images obtained with different imaging techniques.
	Social competence: Awareness of how important it is for a veterinarian doctor to be acquainted with the issues of topographic anatomy, as well as for further clinical studies. Ability to bear responsibility for the decisions made with regard to both people and animals
Content of the programme module	Topography of internal body areas in large and small animals. Topography of head and neck organs, withers, identification of nerve position, blood vessels, lymph nodes, salivary glands. Defining boundaries of respective body areas. Topography of the chest cavity and its organs in small and large animals. Exercises on live animals, presentation of the areas and organs that have been discussed. Topography and division of the abdominal cavity in domestic animals. Pelvic cavity and its topography and division. Position of internal organs in dead animals and a demonstration. Exercises on live animals which cover the topography of abdominal and pelvic cavities. Topography of pectoral and pelvic limbs in large and small animals. Topography of the nervous system, hooves, pads and a mammary gland in large and small animals. Exercises in live animals with a particular consideration of small animals (dog, cat).
Planned didactic forms/actions/methods	Lecture, multimedia presentations, dissection classes, demonstrations on dead animals, exercises on live animals, discussion.

Name of the programme module	Immunology
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	II
Term for a given field	IV
ECTS credits together with contact/no contact hours division	3 (2/1)
A unit providing the course	Institute of Biological Bases of Animal Diseases, Department of Veterinary Prevention and Avian Diseases
Module objective	Acquainting students with the structure of the immune system and the mechanisms of immunological reactions, possibilities of increasing immunity, (vaccinations, serotherapy, non-specific immunotherapy, hyposensitization) as well as laboratory methods used in immunological research.
Educational results	Knowledge: Comprehension of basic immunological phenomena and processes. Broad knowledge of basic concept categories and terminology used in immunology, as well as concepts with a direct reference to practical implementation of knowledge of immunology. Understanding the relationship between the achievements of immunology and the possibility of their implementation in treating human and animal diseases
	Skills: Ability to seek, comprehend, analyse and implement necessary information on immunology from various sources. Ability to isolate leukocytes from peripheral blood of animals, counting cells and marking their lifespan, as well as ability to perform basic immunodiagnostic tests. Ability to draw conclusions from performed tests
	Social competence: Ability to cooperate and work in a group assuming various roles.

	Need for constant updating of the knowledge of veterinary immunology
Content of the programme module	Structure and functions of the immune system; antigens – kinds, processing, presentation, main tissue compliance system and its significance; kinds and functions of the cells that participate in the immune response; maturing and circulation of lymphocytes; lymphoid tissue connected with mucous membranes; cytokines and the regulation of immune response; immunological tolerance; immunological relations between the mother and the foetus; preventive vaccinations as a way of modulating immunity; kinds and functions of cells that participate in the immune response; mechanisms of specific and non-specific immunity; anti-infectious immunity, isolation of cells that are immunologically competent from peripheral blood, counting and marking the lifespan, measuring phagocyte activity; flow cytometry in immunological tests; diagnostic tests based on the antigen/antibody reaction; reactions of hypersensitivity; autoimmunity phenomena.
Planned didactic forms/actions/methods	Lecture, laboratory tests with measuring the performance, laboratory classes report, demonstration, discussion, brainstorming

Name of the programme module	Veterinary epidemiology
Programme module type (obligatory/optional) field	Obligatory
Year of the study programme	II
Semester of the study programme	IV
ECTS credits together with contact/no contact hours division	3.0 (2.0 /1.0)
A unit providing the course	Department of Epizootiology and Clinic of Infectious Diseases
Module objective	To familiarise students with basic terms used in epidemiology, including terms referring to the formation, course and prevalence of diseases in a population, theoretical background for the interpretation of diagnostic test results, the principles of carrying out cross-population and observational studies, the principles of evidence-based medicine, the principles of carrying out surveys and clinical studies, IT systems used in animal health care, and the principles of animal disease control.
Educational results	Knowledge: The Student is familiar with and understands basic epidemiological terms and definitions ; Is able to name the basic types of epidemiological studies
	Skills: Is able to plan the course of epidemiological studies ; Is able to interpret results of epidemiological studies ; Is able to use the available software to plan and interpret epidemiological study results
	Social competencies: Is able to work in a team ; Shows responsibility for the taken decisions regarding people and animals ; Developed the habit of lifelong knowledge and skill development
Contents of the education module	Basic terms in epidemiology; diseases and their classification; epidemiology and its classification; population and its characteristics; formation and course of diseases in a population; causes of diseases; frequency of diseases; epidemic; prevalence of diseases in a population; indicators of disease prevalence in a population; diagnostic tests; sensitivity and specificity of diagnostic tests; predictive values; diagnostic tests; threshold value and methods for determining a threshold value; ROC curve and its interpretation; evaluation of the compliance of test results; multiple studies; cross-population studies; principles for carrying out cross-population studies; sampling methods; cross-population studies; determining a sample size; observational studies; cohort, case/control and cross-sectional observational studies; calculating the relative risk and attributable risk; interpretation of results; observational studies; cohort, case/control and cross-sectional observational studies; calculating the relative risk and attributable risk; interpretation of results; evidence-based medicine; systematic review and meta-analysis; reliability of study results; clinical studies; surveys; clinical study protocol; the sponsor, the monitor and the investigator; survey structure and development; methods for carrying out surveys; principles for disease control; data and methods of their collection; monitoring; supervision of the health of a population; IT systems in animal health care; IT systems used in Poland; IT systems used in other EU member states; principles for animal disease control; disease control programmes; contingency plans
Planned didactic forms/activities/methods	Lectures, individual task-solving, case studies, discussion

Name of the programme module	Ethology, welfare and animals protection.
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	II
Term for a given field	IV
ECTS credits together with contact/no contact hours division	2 (1/1)
A unit providing the course	Institute of Biological Bases of Animal Diseases Division of Veterinary Prevention
Module objective	The aim of the module is to acquire knowledge of correct and incorrect behaviour of farm animals that accompany people, and free-living animals, which might result from insufficient welfare. Acquisition of the ability to evaluate basic welfare parameters and the methods of controlling it pursuant to applicable domestic and EU legislation.
Educational results	Knowledge: General knowledge of how environment affects animal behaviour, how animals function in their natural habitat and husbandry environment, adverse effects of husbandry environment on reactions induced in animal systems, as well as their health and productivity. Basic knowledge of applicable domestic and EU legislation as regards welfare and protection of animals.
	Skills: Ability to search and understand legal acts on protection and welfare of animals in respective technological groups. Ability to perform simple practical tasks as regards recognition and interpretation of basic behavioural practices of animals as supervised by a tutor. Ability to identify and make standard analyses of welfare in breeding facilities based on the interpretation of currently applicable legal provisions. Ability to keep records and make use of the information gathered as regards health, welfare and productivity of the herd. Knowledge of advantages and disadvantages of the actions taken as regards an evaluation of the welfare criteria versus social conditions.
	Social competence: Awareness of the social, professional and ethical responsibility for animal production, welfare of animals together with the shaping and state of natural environment as regards welfare. Awareness of the need for targeted further education and self-improvement with regard to the occupation exercised, which is directly linked to the changes in legislation, systems of animal maintenance and social changes.
Content of the programme module	Description of correct and incorrect behavioural practices of farm animals that accompany people, and free-living animals. Basic parameters that characterise welfare, as well as domestic and EU legal acts pertaining to animal protection and welfare. Evaluation of basic parameters of animal welfare and methods of its control with the application of physiological, behavioural, productive, health and complementary parameters pursuant to domestic and EU legislation. Improving knowledge of negative consequences of welfare going into decline; acquaintance with abnormal behaviour and diseases which result from welfare in decline.
Planned didactic forms/actions/methods	Students have an opportunity to participate in lectures as part of the course. Some of the tasks are completed by students in teamwork (e.g. evaluation of welfare in different kinds of environment); they may also, in collaboration with the lecturer, develop their own project that covers selected issues connected with welfare, which they will later demonstrate in the form of a presentation.

Name of the programme module	Microbiology 1
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	II
Term for a given field	IV
ECTS credits together with contact/no contact hours division	6 (3.1/2.9)
A unit providing the course	Division of Veterinary Microbiology
Module objective	Acquainting students with the specific knowledge of morphology, physiology, biological properties, features of pathogenicity in microbes that cause diseases in animals (bacteria, fungi, viruses) as regards their identifiability
Educational results	Knowledge: General knowledge of morphology and physiology of microbes that are potentially pathogenic to animals. 2. General knowledge of techniques to isolate and identify microbes. General knowledge of how microbes interact with macroorganisms (animals).

	<p>Skills: Ability to seek, comprehend, analyse and creatively implement the information on microbiology from various literature sources. Ability to accurately verbalise knowledge in oral or written form. Ability to single-handedly carry out, analyse and evaluate a given diagnostic procedure and interpret the results obtained.</p>
Content of the programme module	<p>Social competence: Ability to cooperate and work in a group. Awareness of the social, professional and ethical responsibility for the health of animals. Knowledge of procedures necessary to restrict microbial influence on animal health. Awareness of the need to permanently broaden the knowledge of how microbes interact on the animal organism.</p> <p>Microbiology - general section: morphology, physiology, methods of culturing and storing bacteria, fungi, viruses; sensitivity to environmental factors (temperature, oxygen, water, nutrients); factors inhibiting microbial growth, a method of evaluation; genetics of bacteria – factors that condition variability and formation mechanisms; methods used for microbial identification</p>
Planned didactic forms/actions/methods	<p>Lecture, performing diagnostic analyses in bacteriology, virology and mycology, multimedia presentations, discussion</p>