

## SEM 3

Name of the programme module	Animal Anatomy 3
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	II
Term for a given field	III
ECTS credits together with contact/no contact hours division	5 (2.8/2.2)
A unit providing the course	Department of Anatomy and Histology of Animals
Module objective	Acquisition of abilities and knowledge of the anatomy of domestic animals (horses, cows, sheep, pigs, dogs, cats, birds) as well as functional interrelations between respective organs and systems in an animal body.
Educational results	Knowledge: Detailed knowledge of the body structure in domestic animals. Knowledge of the position, structure and basic functions of respective organs in domestic animals. Knowledge of and ability to describe differences in the structure of organs and systems in different species of domestic animals
	Skills: Ability to seek, comprehend, analyse and implement necessary information from various literature sources. Ability of accurate verbal communication with different entities. Ability to put into practice the knowledge of anatomy of domestic animals
	Social competence: Understanding the importance of lifelong learning. Ability to cooperate and work in a group assuming various roles. Ability to popularise basic knowledge of animal anatomy among friends and acquaintances. Awareness of the need for targeted further self-improvement
Content of the programme module	Acquisition of detailed knowledge of animal anatomy: acquisition of macroscopic anatomy of respective systems in domestic animals (nervous, circulatory, respiratory, digestive, excretory, reproductive, endocrine and sensory). Identification of animal species based on characteristic anatomy of organs and structures: ability to use anatomical veterinary terminology in Polish, Latin, Greek, as regards clinical needs. The content of the module is indispensable and it is connected with several theoretical and clinical subjects in veterinary medicine.
Planned didactic forms/actions/methods	Lecture, multimedia presentations, slides, transparencies, information board, museum exhibits. Dissecting exercises, animal preparations. Exenterations of different domestic animal species (dog, pig, sheep, horse).

Name of the programme module	Animal Breeding and Husbandry
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	II
Term for a given field	III
ECTS credits together with contact/no contact hours division together with contact/no contact hours division	3 (2/1)
A unit providing the course	Department of Breeding and Production Technology of Pigs
Module objective	Acquainting students with biological principles of animal production, conditions of husbandry and breeding for basic farm animals (cattle, pigs, horses, sheep, goats, poultry) as well as accompanying animals
Educational results	Knowledge: Extended knowledge of biology of farm animals and accompanying animals. Knowledge of husbandry of livestock together with their species and races, genetic bases for their breeding and improving.
	Skills: Ability to apply the acquired basic knowledge when solving problems in the course of future education. Ability to explain the principles of animal husbandry and breeding, select animals for matching, reproduction and selection, evaluate the conditions that ensure animal health and welfare.
	Social competence: Ability to act autonomously and formulate own opinions, ability to take responsibility for decisions and awareness of their effects, with particular attention to those decisions which affect animal and human health.
Content of the programme module	The subject pertains to the issues connected with husbandry and breeding of farm animals and accompanying animals. Introduction of issues that regard reproduction, animal care from birth all throughout their growth and development. Description of races and genetic and environmental factors that form the practical value of animals. Underlining the importance of native breeds in contemporary husbandry and breeding. Discussing the lines of possible use of particular farm animals species. Discussion of basic issues as regards: keeping breeding records, duties connected with husbandry, evaluation of the practical and breeding value, animal selection for matching and crossbreeding. Discussion of the systems of animal maintenance and feeding with a particular reference to the welfare of

	animals and zootechnical prophylaxis.
Planned didactic forms/actions/methods	Lecture, laboratory classes, tutorials, discussion, group work, demonstration, conversation, project method

Name of the programme module	Technology of Animal Production
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	II
Term for a given field	3
ECTS credits together with contact/no contact hours division	2 (1.3/0.7)
A unit providing the course	Department of Breeding and Production Technology of Pigs
Module objective	Acquainting students with the organisation and functioning of farms that specialise in animal production.
Educational results	Knowledge: Extended knowledge of farm animals biology that is suited for direct application in animal production. Knowledge of welfare, natural environment protection, principles of by-product utilisation and animal production waste.
	Skills: Ability to apply the acquired basic knowledge when solving problems in the processes of animal production. Ability to describe and evaluate factors that influence animal production, animal behaviour and the quality of food of animal origin and the influence of animal production on public health and natural environment.
	Social competence: Awareness of the social and professional responsibility for the welfare of animals.
Content of the programme module	The course covers the issues related to the organisation of animal production on a farm. The course encompasses technologies of milk production, livestock, eggs, wool, feathers as well as fur and coat materials. It describes the principles of how specialist livestock farms function and appropriate legal provisions. It describes livestock buildings, rooms and installations used by respective animal species as well as work organisation, prophylactic and tending procedures performed in livestock farms. It also encompasses planning the production in a commercial farm together with all the necessary production means.
Planned didactic forms/actions/methods	Lecture, laboratory classes, tutorials, discussion, group work, demonstration, project method

Name of the programme module	Veterinary economics
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	2
Term for a given field	3
ECTS credits together with contact/no contact hours division	1 (0.7/0.3)
A unit providing the course	Department of Economics and Management
Module objective	The aim of the module is to acquaint students with the basic knowledge of how the economy and economic operators function, with a particular consideration of the organisations that provide veterinary services.
Educational results	Knowledge: Basic knowledge of how economy and its sectors function; knowledge of market economy and its characteristic features. Knowledge of basic principles of the economic calculation. Understanding the consequences of the chosen solution in given economic and production circumstances
	Skills: Ability to determine the criteria and define the growth factors of economy. Ability to describe the results of the performed economic calculation and draw conclusions from its evaluation. Ability to calculate basic economic categories present in the economic activity,
	Social competence: Ability to communicate with the external environment as to economic conditions related to the professional activities. Ability to think and act in an entrepreneurial fashion. Awareness of the need for further education and self-improvement with regard to the professional activities,
Content of the programme module	Basic concepts: microeconomics, macroeconomics, economic categories and laws. The market and the factors that shape it, the law of demand, the law of supply, price elasticity of demand, income elasticity of demand. Consumer: the concept of consumption, need, budgetary constraints, income effect and substitution effect. Factors that condition the growth of

	service businesses. Decision processes in entities that provide veterinary services. The entity – resources and assets, the structure and sources of financing. Income and costs of veterinary services. Decision making accounting of costs. Basic methods of economic analysis: unit and total cost calculation. Expenses in veterinary services. Economics versus protection of animal health. Disease in economic terms: the impact of diseases on economic results of a farm, prevention of diseases from an economic point of view.
Summary of ECTS credits	Lectures; Consulting;; Recommended reading, preparation for course completion.

Name of the programme module	Animal nutrition and feeding stuffs
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	II
Term for a given field	III
ECTS credits together with contact/no contact hours division	4 (2.7/1.3)
A unit providing the course	Institute of Animal Nutrition and Bromatology
Module objective	Acquainting students with nutrition physiology, the role of nutrients in animal nutrition, nutritional norms and recommendations, as well as nutritional value of animal nutrition, together with doses and mixtures; learning the ability to take decisions as regards proper nutrition, as well as a critical evaluation of animal nutrition.
Educational results	Knowledge: Knowledge of digestion physiology and metabolism in animals, as well as their impact on animal systems. Knowledge of metabolism and energy transformations in the animal body, as well as the nutritional value of animal nutrition, the role of feed additives and adverse effects of anti-nutritional factors – ANF. Understanding norm recommendations as regards respective animal species with the consideration of nutrients,
	Skills: Ability to make calculations and evaluate the nutritional value of feed mixture or a feed ration. Ability to evaluate a manner of nutrition as regards nutritional norms and recommendations, as well as determine the cause of metabolic diseases
	Social competence: Awareness of the influence of nutrition on production effects and the animal health, as well as an ability to share the knowledge outside the academia (on farms, among veterinary doctors and animal producers). Awareness of the need to permanently broaden the knowledge of how different nutritional factors interact with the functions of animal organism
Content of the programme module	Composition and transformations of basic nutrients. Usability in animal feeding. Vitamins, mineral components; division, role in metabolism, physiological and nutritional needs. Digestibility of feed nutrients. Objectives of defining digestibility, methods. Metabolism and energy transformation. Evaluation systems of feeds intended for monogastric animals and ruminants. Influence of feed components on the quality of food of animal origin. Concentrated feeds, anti-nutritious substances in feeds. Feed additives, legal framework of the prohibition on the use of some of the additives. Components of a normalized dose, systems and technologies of animal nutrition. Nutrition models of farm animals and pet animals. Nutrition models during reproduction, pregnancy anabolism. Nutrition patterns during fattening. Nutrition principles for ruminants (cattle, sheep, goats), horses, pigs, poultry dogs and cats.
Planned didactic forms/actions/methods	Lecture, multimedia presentations, films, virtual laboratory, performance of in vivo circulatory and spirometric tests, biochemical determinations and hematological analyses, discussions, laboratory class report.

Name of the programme module	Animal physiology
Year of studies for a given field	II
Programme module type (obligatory/optional)	Obligatory
Term for a given field	III and IV
ECTS credits together with contact/no contact hours division	5 (3.6/1.4), 6 (3.1/2.9)
A unit providing the course	Department of Animal Physiology
Module objective	Acquainting students with physiological mechanisms of the functions of animal body and the regulation of these mechanisms, with a particular reference to the processes responsible for maintaining the homeostasis of the body.
Educational results	Knowledge: Ability to describe life processes taking place in an animal body at the cellular, organ and systemic level. Ability to describe the activities, functions and the interaction of systems, organs and tissues. Understanding basic mechanisms of physiological regulation of cellular, tissue and organ activity and their mutual integration on the level of the organism
	Skills: Ability to take measurements, evaluate and interpret basic physiological parameters of the body as health indicators. Ability to define the physiological state as an adaptation of the ever-changing environmental factors. Ability to use the basic principles of physiology in specialist learning.
	Social competence: Awareness of the importance of the body's physiological state for its health, animal production and the quality of food of animal origin. Awareness of the need to permanently broaden the knowledge of how different factors interact with the functions of animal organism.
Content of the programme module	<p>Electrophysiological principles of excitability. Functional organisation of the nervous system. Physiology of skeletal and smooth muscles. Physiology of blood – homeostasis, hemopoiesis, defence mechanisms, haemostasis, blood groups. Basic hematological parameters. Physiology of the gastrointestinal tract – regulation of food intake, digestive processes, absorption, motor activity. Specificity of the gastrointestinal tract activity in ruminants. Physiology of bone tissue.</p> <p>Functional characteristics of the cardiac muscle. Hemodynamics of circulation. Neural and hormonal regulation of the circulatory system. Basic parameters of the functional status of the circulatory system. Respiratory mechanics. Spirometry. Central and peripheral respiratory regulation. Physiology of sensory organs. Biological rhythms. Instincts, drives, motivational behaviour, learning. Physiology of the reproductive system and the mammary gland. Physiology of the excretory system. Regulation of water-mineral balance. Autonomous and behavioural thermoregulation mechanisms. Mechanisms that regulate metabolism and energy transformation. Physiological significance of hormones.</p>
Planned didactic forms/actions/methods	Lecture, multimedia presentations, films, virtual laboratory, performance of in vivo circulatory and spirometric tests, biochemical determinations and hematological analyses, discussions, laboratory class report.