Name of the programme module	Chemistry
Programme module type (obligatory/optional)	obligatory
Year of studies for a given field	I
Term for a given field	1
ECTS credits together with contact/no contact hours division	4 (2/2)
A unit providing the course	Department of Biochemistry
Module objective	Enhancement of secondary school knowledge of chemistry with selected issues from the field of inorganic, general and organic chemistry, which are indispensable for understanding biochemical issues discussed in the following semesters. Acquiring basic knowledge for a correct performance of chemical analyses which are applied in laboratories of different profiles, including clinical chemistry, as well as food inspection. The aim of teaching chemistry is to acquaint students with biochemical transformations which take place in cells and tissues, and which are indispensable for the proper functioning of the entire organism, as well as with some laboratory
Educational results	Knowledge: Knowledge to define basic concepts and phenomena in the field of inorganic, general and organic chemistry. Ability to integrate the knowledge of inorganic, general and organic chemistry by demonstrating selected functions of a live organism. Ability to describe selected analytical methods.
	Skills: Ability to conduct chemical experiments by routine. Ability to analyse the results of the conducted tests and formulate conclusions which follow from the conducted analyses. Ability to use different sources of knowledge.
	Social competence: Awareness of the need for further education and self-improvement. Students develop their ability to work in a group.
Content of the programme module	Basic chemical terms, atomistic theory. Biological significance of selected elements. Stoichiometry of chemical formulae and chemical equations. Solutions and manners of expressing concentration. Electrolytic dissociation and the ionic product for water, pH, hydrolysis, buffers. Processes of oxidation-reduction. Basics of analytical chemistry. Organic chemistry – nomenclature, representatives of the main groups of organic compounds, identification of function groups of these connections Carbohydrates, Fats, Amino acids. Identification of selected cations and anions as
Planned didactic forms/actions/methods	Laboratory classes, lectures, self-study materials on the unit's website, online materials available upon entering a password (VikiWet, Casus)

Name of the programme module	Biology
Programme module type (obligatory/optional)	obligatory
Year of studies for a given field	I
Term for a given field	I
ECTS credits together with contact/no contact hours division	2 (1/1)
A unit providing the course	Institute of Fish Diseases and Biology
Module objective	Acquisition of abilities and knowledge of systems in different species of animals as well as diagnostic characters, biology and classification of species important in veterinary and human medicine.
Educational results	Knowledge of the body structure in different species of animals. Knowledge of and ability to describe differences in the systems in different species of animals. Knowledge of important plants and animals of veterinary or medical importance.
	Skills: Ability to recognise plants and animals of veterinary or medical importance.
	Social competence: Awareness of the need for further education and self-improvement. Students develop their ability to work in a group.
Content of the programme module – a concise description (about 100 words).	Protists - groups and species important in veterinary and human medicine. Animal digestive systems, excretory systems, respiratory systems, circulatory systems and skeletal systems. Invertebrates - diagnostic characters, biology, classification. Important parasites and their life cycles, storage pests intermediate hosts, vectors, species important as food. Vertebrates – diagnostic characters, biology, classification. Important marine and freshwater food fish species, commonest aquarium and pond fish species and their biology. Groups and species important in terrariums, laboratory experiments, as food. Mammals as reservoir of transmissible diseases. Commonest exotic pet mammals and their biology. Game species and their biology. Commonest exotic cage and aviary birds and their biology. Game fowl, birds of prey used in falconry. Plants: recognition of medicinal and poisonous plants.
Planned didactic forms/actions/methods	Lectures, multimedia presentations, laboratory, preparation for the credit test.

Name of the programme module	Cell biology
Programme module type (obligatory/optional)	obligatory
Year of studies for a given field	I
Term for a given field	I
ECTS credits together with contact/no contact hours division	2 (1/1)
A unit providing the course	Institute of Fish Diseases and Biology
Module objective	Acquisition of knowledge and skills of cell biology
Educational results	Knowledge: Knowledge and ability to describe the molecular structure and functional components of the cell membrane. Knowledge and ability to describe the structures and functions of organelles. Ability to describe and explain molecular mechanisms of signal transduction and basic cellular signalling pathways. Knowledge and ability to describe the movement of organelles, follicles and the flow of proteins in cells. Knowledge of the mechanisms that control: the cellular cycle, ageing process and the death of cells, apoptosis and necrosis.
	Skills: Ability to accurately analyse. the principles of the correct function of the cell and the description of electronograms showing structures of animal cells. Ability to make a selection of cellular function and structure examinations.
	Social competence: Ability to cooperate and work in a group assuming various roles. Understanding the importance of lifelong permanent learning.
Content of the programme module – a concise description (about 100 words).	Cellular biology – Structural and functional organisation of an animal cell. Description of individual cellular components in different cell types. Bio-membranes and their role in cellular transport. The flow of follicles and proteins in cells. Principles of intercellular signalling. Biology and therapeutic applications of stem cells. A control of the cellular cycle and cell death. Morphological characteristics of apoptosis and necrosis. Methods of cellular function and structure examinations.
Planned didactic forms/actions/methods	Group work/ lecture, presentation of knowledge, demonstration of electrograms.

Name of the programme module	Information Technology
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	I
Term for a given field	I
ECTS credits together with contact/no contact hours division	2 (1/1)
A unit providing the course	Department of Applied Mathematics and Computer Science
Module objective	Mastering the skill of using a word processor and a spreadsheet application, as well as an ability to create multimedia presentations. Acquiring basic information on the Python programming language and a preparation for further self-study. Improving the student's knowledge and skills in the field of information technology so that they could consciously participate in the development of the information society.
Educational results	Knowledge: Understanding the essence and the concepts of a word processor, spreadsheet, multimedia presentation and a programming language. Knowledge of the principles of correct text creation and formatting in the word processor together with the serial correspondence tool. Knowledge of the processing tools and data analysis on a spreadsheet. Knowledge of programming basics in the Python programming language.
	Skills: Ability to draw up a long text, depending on the imposed format, with a particular emphasis on the rules of scientific papers. Ability to prepare a multimedia presentation related to the field of study. Ability to use the right tools to automatically draw up letters and create labels. Ability to use a spreadsheet for complex mathematical calculations, with particular emphasis on mathematical formulae, graphs and the use of tools for data analysis. Ability to independently write a simple programme in the Python language.
	Social competence: Ability to estimate the task difficulty and consciously choose the right tools for its implementation. Awareness of the technological progress and acknowledgement of the need for constant education in information technology.
Content of the programme module – a concise description (about 100 words).	The computer laboratory covers: text processing with a particular consideration of the principles of automated formatting of the so-called long document, the serial correspondence tool together with a database. In addition, a spreadsheet as a tool for problem analysis, with reference to the acquired knowledge of physics; creation of formulae and data analysis in the spreadsheet. Preparation of an oral performance supported by a multimedia presentation. Programming basics in the Python programming language. The tutorials cover a practical implementation of the lecture content in a computer laboratory. Working with a long document, serial correspondence, spreadsheet as an advanced calculator and a device for data analysis. Multimedia presentation – principles of creation. Programming basics.
Planned didactic forms/actions/methods	Practical assignments – working with a computer and respective applications, completion of the tasks assigned in the computer laboratory, discussion, lecture, conversation.

Name of programme module	Work Safety and Ergonomics
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	I
Term for a given field	I
ECTS credits together with contact/no contact hours division	1 (0,68/0,32)
Academic unit offering the module	Department of Technology Fundamentals / Subdepartment of Ergonomics
Module objective	Legal regulations in the field of occupational safety and health in the PL and the EU countries. Hazards in the working environment of the veterinarian. Occupational risk - definition, chosen risk assessment and evaluation methods. Accident at work with providing pre-medical first aid and the main principles of fire protection. Basic concepts of ergonomics. Workload definition and assessment methods (physical and mental). Adaptation principles of workplace to human psycho-physical features and abilities.
Educational results	Knowledge: Has knowledge about legal protection of work, regulations regarding occupational safety and health and general knowledge about ergonomics (rules of the employee-work environment system). Has knowledge about hazards for health and life occurring in the work environment, methods of assessing occupational risk. Knows procedures used in case of accident, risk of failure and provision of first aid. R WE2E_K 01 +
	Skills: Can use the acquired knowledge about safety at work and available technical solutions in the work environment to ensure the required level of occupational safety and health. Can apply technical preventive measures limiting or eliminating hazardous and detrimental factors at work, applying at the same time the knowledge about ergonomics in work processes. Knows how to provide first aid and properly assess and take efficient measures in emergency or hazardous situations occurring at work. R WE2E_U 13 +
	Social competence: Demonstrates independence in taking actions, can formulate opinions, accepts responsibility for one's own decisions, is aware of their effects, particularly these affecting safety conditions at work. R WE2E_K 02 ++
Content of the education module (a concise description of approximately 100 words)	Polish and EU legal basis for occupational safety and health – sources of the labour law (regulations, principles, standards). Employer's and employee's OSH responsibilities and rights. Characteristics of onerous, detrimental and hazardous factors at work. Method of limiting and eliminating impact of hazardous and detrimental factors on employees' health and life. Occupational risk – definition,

	assessment, occupational risk estimation in a selected profession (veterinarian). Accidents at work. First aid – basic rescue procedures. Concept of ergonomics, analysis of the profession in terms of ergonomics. Workload assessment methods.
Planned didactic forms/activities/methods	Lecture + discussion with audiovisual presentation Preparation for the colloquium

Name of the programme module	Philosophy
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	I
Term for a given field	I
ECTS credits together with contact/no contact hours division	2 (1/1)
A unit providing the course	Department of History of Philosophy and Comparative Philosophy History UMCS
Module objective	Acquainting students with the issues and philosophical standpoints together with developing rational and socially desirable skills and attitudes
Educational results	Knowledge: Orderly general knowledge of theories and methodology of the history of philosophy. Elementary knowledge of interconnections between philosophy and other fields of culture. Knowledge of main directions of development and the most important and most recent achievements in philosophy.
	Skills: Ability to precisely formulate and analyse philosophical issues (also other than philosophical). Ability to select methods and research tools, prepare and present the results. Ability to argue rationally with the use of opinions of other authors, as well as to formulate conclusions.
	Social competence: Ability to show creativity in search of possible solutions of philosophical problems (and other problems). Need for a constant education and improvement of one's skills.
Content of the programme module – a concise description (about 100 words).	The course demonstrates main issues and their model solutions formulated in European philosophy which relate to the understanding of philosophy, its relationship with other fields of culture and issues from main branches of philosophy: philosophy versus other fields of culture (world view, empirical sciences, ideology, religion, art); branches of philosophy and an outline of their issues – ontology, epistemology, ethics, aesthetics, axiology, anthropology, history of philosophy, logics; specific problems and viewpoints in ontology – monism, dualism, pluralism, materialism, idealism, determinism, indeterminism, causalism, teleologism; specific problems and viewpoints of epistemology – rationalism, irrationalism, empiricism, realism, epistemological idealism, falsificationism, concepts of truth; specific problems and viewpoints in ethics – absolutism, relativism, kinds and hierarchy of values, ethical intellectualism, moralism, hedonism, utilitarianism).
Planned didactic forms/actions/methods	Lecture, discussion, written composition

Name of the programme module	Latin
Programme module type (obligatory/optional)	obligatory
Year of studies for a given field	I
Term for a given field	I and II
ECTS credits together with contact/no contact hours division	1 (0.6/0.4), 1 (0.7/0.3)
A unit providing the course	Department of Foreign Languages
Module objective	The aim of the classes is to acquaint students with basic issues of inflection and syntax of Latin, with Latin medical terminology, with general rules of formulating diagnoses in Latin together with practising the skill of translating Latin texts.
Effects of education	Knowledge: Basic knowledge of Latin grammar. Knowledge of medical vocabulary
	Skills: Students are able to read a Latin text with the use of correct pronunciation, vowel length and accent. Ability to use medical nomenclature in Latin both passively and actively. Ability to translate a Latin text; ability to recognise basic grammatical forms
	Social competence: Understanding the importance of lifelong learning
Content of the programme module – a concise description	The classes run within the module cover the basics of Latin grammar (Present indicative active and passive, Present imperative active and passive, declensions: I-V, Comparison of adjectives, Adverbs, Verb *to be*, Prepositions, Cardinal and ordinal numerals, Indexing numerals and numerals adverbs from 1 to 20, Personal pronouns, Reflexive pronoun, Possessive pronouns) and specialist vocabulary within medical nomenclature (names of animals, anatomy: vocabulary connected with positioning of body parts, axial skeleton, names of bones, names of muscles, respiratory and lymphatic system, digestive system, urogenital system, nervous system and sensory organs, angiology, heart, arteries and veins, glands, skin, form of medications, Greek and Latin prefixes in medical vocabulary, names of diseases (inflammations, progressive changes and neoplasia), forms of prescriptions and their component parts)
Planned didactic forms/actions/methods	expository method; translation exercises with a text; individual work; group work

Name of the programme module	Histology and embryology 1
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	I
Term for a given field	I
ECTS credits together with contact/no contact hours division	5 (3/ 2)
A unit providing the course	Department of Animal Anatomy and Histology
Module objective	Acquainting students with general histology: classification of animal tissues, their microscopic structure and ultrastructure, place of occurrence and functions. Acquainting students with embryology: stages of ontogenetic development and mechanisms that regulate respective stages of avian and mammalian development
Educational results	Knowledge: Knowledge of tissue classification, microscopic structure, place of occurrence in animal bodies, stages and mechanisms of embryonic avian and mammalian development. Knowledge of how the tissue structure and its function are linked together, stages of embryonic development, mechanisms that navigate embryonic development. Understanding processes that take place in respective tissues
	Skills: Ability to independently recognise a microscopic structure of tissues. Ability to analyse tissue structure and stages of embryonic avian and mammalian development. Ability to find a link between the structure and the function of tissues
	Social competence: Ability to share the knowledge of general histology and embryology in an academic milieu and outside it (among other social groups). Ability to cooperate in a group and assume different roles; understanding the importance of lifelong learning and self-improvement
Content of the programme module – a concise description (about 100 words).	Acquaintance with histological structure of animal tissue: epithelial, connective, muscle, nervous and glial, which will enable the acquisition of basic knowledge of general animal histology. Connection of tissue structure with their functions. Acquaintance with the course and regulation of development processes: gametogenesis, fertilization, cleavage, gastrulation, formation of primary and final organs, implantation, which will act as an introduction to the implementation of further stages of the studies. 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, laboratory, microscopic analysis of histological preparations, discussion, cases with slides, the department's website, discussion, oral review, test.

Name of the programme module	Physical education
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	I
Term for a given field	I
ECTS credits together with contact/no contact hours division	1 contact point
A unit providing the course	Physical Education and Sports Study
Module objective	The objective of the module is to acquaint students with methods, means and forms of organisation used in the classes of physical education with the purpose of developing efficiency and physical fitness, as well as health-improving habits
Educational results.	Knowledge: Basic knowledge of health-improving significance of physical activity, hygiene and health-improving lifestyle. Knowledge of basic of general physical exercises and the rules of team sports. Awareness of cause and effects links between systematic physical activity, health and physical fitness
	Skills: Recreational motor skills which make various life situations easier. Ability to design and organise health–improving activities that also develop physical fitness (selection of organizational forms, exercises, methods and means). Ability to evaluate one's own physical fitness
	Social competence: Awareness of the responsibility for one's own health and keeping fit. Ability to cooperate and work in a group assuming various roles. Understanding the importance of lifelong learning, ability to inspire and organise learning processes for others in terms of motor skills
Content of the programme module – a concise description (about 100 words).	The exercises involve: improving technical and tactical elements of selected team games both formally and recreationally: basketball – passes and catches, dribbling, shots from a spot and lay-ups, man-to-man marking, perfecting the abovementioned elements in small games and a simplified game volleyball – hitting and bumping, underhand and overhand serve, setting and hitting with a basic stance, setting for the middle hitter and hitting, perfecting the abovementioned elements in small games and a simplified game. Exercises that strengthen respective muscle groups in the gym, rules and methods of practice. Exercises with accompanying music that improve motor coordination, rhythmicity of movements and strengthen muscles that keep body posture, with the use of balls, steppers, dumbbells and body weight – teaching basic steps for aerobics classes. Exercises that shape the physical performance of the body with the use of aerobic equipment (stationary bicycles, treadmills, rowing machines) – methods of keeping fit through aerobic and anaerobic exercises
Planned didactic forms/actions/methods	– practical classes in the form of exercises – conversations that promote physical activity and the principles of a healthy lifestyle

Name of the programme module	Animal Anatomy 1
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	I
Term for a given field	I
ECTS credits together with contact/no contact hours division	7 (3,9/3,1)
A unit providing the course	Department of Animal Anatomy and Histology
Module objective	The aim of the module is to familiarize students with the detailed structure of the skeletal system and connections of the bones in various animal species (i.e. dog, cat, cow, sheep, pig, horse)
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 – a concise description (about 100 words).	General bones structure. Detailed bones structure including species differences. General Syndesmology. Bones connections within ready preparations based on the joints of the pelvic limb, thoracic limb and connections of the head.
Planned didactic forms/actions/methods	Lecture, multimedia presentations, slides, transparencies, information board, museum exhibits. Dissection classes - the structure of the skeletal system, preparation of muscles

Name of the programme module	Biophysics
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	I
Term for a given field	I
ECTS credits together with contact/no contact hours division	2 (1.18 /0.82)
A unit providing the course	Department of Biophysics, Faculty of Environmental Biology
Module objective	The aim of the course is to acquaint students with basic laws that govern the macro- and micro-world, as well as the testing methods in biophysics, with a particular consideration of the role of experiment and theory in its development; to facilitate understanding of biophysical processes and phenomena relating them to live organisms.
Educational results	Knowledge: Student has a general knowledge of biophysics which covers the information theory, thermodynamics, mechanics and the elements of biomechanics, transport phenomena (matter, energy, charge and momentum) basics of acoustics, optics, elements of nuclear physics and radiation, as well as modelling of physical and biophysical phenomena. Student has sufficient knowledge to identify and comprehend biophysical phenomena applied in the function of selected testing equipment
	Skills: Student has an ability to define basic physical quantities and the interpret the measurements taken. Students acquire an ability to use basic measuring equipment. Students acquire an ability to obtain information from literature, databases and other sources
	Social competence: Students have an ability to cooperate and work in a group
Content of the programme module – a concise description (about 100 words).	An application of physical and physicochemical laws for living systems. Issues connected with basic phenomena and biological processes which take place in nature with a particular consideration of the processes that take place in live organisms together with their description in the language of physics. Interconnection of biophysics with other sciences, such as biochemistry or physiology. Phenomena which cover the following selected areas of biophysics: elements of mechanics and biomechanics, phenomenological thermodynamics, transport phenomena (matter, energy, charge and momentum), elements of acoustics, elements of wave and geometrical optics, elements of nuclear physics and radiation.
Planned didactic forms/actions/methods	Lecture; Laboratory classes and tutorials; Reports from performed experiments

Name of the programme module	The use of animals in scientific experiments
Programme module type (obligatory/optional)	Obligatory
Year of studies for a given field	I
Term for a given field	I
ECTS credits together with contact/no contact hours division	2 (1,4/0,6)
A unit providing the course	Sub-Department of Pathophysiology, Department of Preclinical Veterinary Sciences, Faculty of Veterinary Medicine, University of Life Sciences in Lublin
Module objective	The purpose of the module is to familiarize the students with the principles and legal basis for the use of animals in scientific experiments and acquiring the ability to prepare documentation necessary to obtain the permission of the ethics committee for conduction of the experiments.
Educational results	Knowledge: Understanding and ability to present the regulations regarding the acquisition and breeding of animals as well as care for animals and their use for scientific purposes. Ability to present the principles of health and safety at work with laboratory animals. Ability to present knowledge of genetics and genetic modification of animal species used in experimental procedures.
	Skills: Ability to plan experimental procedures taking into account 3R principle. Ability to preparing an application to the local ethics committee for permission for animal testing in accordance with applicable regulations. Ability to recognizing signs of anxiety and pain characteristic for the animal species. Ability to describe the principles of early and humanitarian termination of procedure. Ability to indicate alternative methods to animal experiments as well as the benefits and threats resulting from their use.
	Social competence: Awareness of the need for further education and self-improvement. Open to active participation in group.
Content of the programme module	Applicable regulations in the scope of animal acquisition and breeding as well as care for animals and their use for scientific purposes. Outline of anatomy and physiology of laboratory animals intended for experiments. Legal aspects for the maintenance and use of companion and farm animal species in scientific experiments. Recognizing species-specific signs of distress, pain and suffering. Planning and carrying out of experimental procedures. The 3R principle. Preparation of the application to the local ethics committee for animal experiments for permission to conduct the experiment. Use of early and humanitarian termination of the procedure. Principles of safety and hygiene of work with laboratory animals. Principles of safety and hygiene of work with laboratory animals. Retrospective assessment. Genetics and genetic modifications of animal species to be used in experimental procedures. Alternative methods and the benefits and risks of using them.
Planned didactic forms/actions/methods	Presentations, discussions, seminars