# SILABUS EDUCATIONAL COMPONENT

# CLINICAL PATHOLOGICAL PHYSIOLOGY

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| specialty | 211 Veterinary medicine | mandatory discipline | selective |
| educational program | veterinary medicine | faculty | veterinary medicine |
| educational level | not limited | department | animal physiology and biochemistry |

## TEACHER


Zhukova Iryna

Higher education – specialty: veterinary medicine
Scientific degree – Doctor of Veterinary Sciences 16.00.04 Veterinary Pharmacology and Toxicology
Academic title – Professor of the Department of Animal Physiology and Biochemistry
Work experience – more than 35 years
Indicators of professional activity on the course topic:

- author of more than 20 methodological developments;
- co-author of more than 10 thematic publications;
- participant in scientific and methodological conferences.

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| phone | 0 9 57736526 | e - mail | phiziolog.hdzva@ukr.net | remote support | Moodle |

The following are involved in teaching the discipline: Senior Lecturer Kochevenko Olena

## GENERAL INFORMATION ABOUT THE EDUCATIONAL COMPONENT

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| Objective | acquisition of advanced knowledge, skills, and abilities from the list of general and special competencies sufficient to solve complex tasks in this discipline, which involves both its integration with basic clinical sciences and the acquisition of deep knowledge of the pathophysiology of organs and systems, the ability to use this knowledge in the process of further education and in professional activities to solve clinical problems. The discipline develops professional abilities for clinical thinking; provides the ability to diagnose, treat, and prevent the occurrence and development of diseases. |
| Format | lectures, practical classes, independent work, individual tasks, teamwork |
| Detailing of learning outcomes and forms of their control | • Ability to think abstractly, analyze and synthesize, conduct research at the appropriate level, learn and master modern knowledge, develop strategies for safe, sanitary-conditioned animal husbandry, know the terminology of pathophysiology, be able to use it correctly in your work (GC1, GC3, GC7, GC11, PC2, PC3, PC8, PLO1) / individual tasks, training<br>• The ability to apply knowledge in practical situations, make informed decisions, communicate with representatives of other professional groups at different levels, formulate conclusions regarding the effectiveness of selected methods and means of keeping, feeding and treating animals, prevention of infectious and non-infectious diseases, as well as production and technological processes at enterprises for keeping, breeding or operating animals (GC2, GC3, GC7, GC8, GC9, GC10, PC1, PC3, PC11, PC12, PLO7)/ individual tasks<br>• Ability to use tools, special devices, instruments, laboratory equipment and other technical means to carry out the necessary manipulations during professional activities, develop quarantine and health measures, methods of therapy, prevention, diagnosis and treatment of diseases of various etiologies, carry out educational activities among industry workers and the population (GC2, GC3, GC7, GC11, PC1, PC2, PC3, PC4, PC7, PC8, PLO6, PLO19) / individual tasks<br>• implementation of environmental protection mechanisms, application of knowledge of biosafety, bioethics and animal welfare in professional activities, knowledge of the rules and requirements of biosafety, bioethics and animal welfare in the process of professional activities (GC6, GC7, GC9, GC12, PC11, PC12, PC16, PC19, PLO17, PLO19) / training, individual tasks |
| Scope and forms of control | 3 ECTS credits (90 hours): 12 hours of lectures, 18 hours of laboratory and practical work; current control (2 tests); final control - differentiated test. |
| Teacher requirements | timely completion of tasks, activity, teamwork |
| Enrollment conditions | "free enrollment" |

## COMPLEMENTARY EDUCATION STANDARDS AND CURRICULUM

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| Competencies | GC1. Ability for abstract thinking, analysis and synthesis<br>GC2. Ability to apply knowledge in practical situations<br>GC3. Knowledge and understanding of the subject area and profession<br>GC7. Ability to conduct research at the appropriate level | Program learning outcomes | PLO1. Know and correctly use the terminology of veterinary medicine<br>PLO 2. Know and correctly use the terminology of veterinary medicine<br>PLO3. Determine the essence of what occurs in the animal body in |

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| | GC8. Ability to learn and master modern knowledge<br>GC9. Ability to make informed decisions<br>GC10. Ability to communicate with representatives of other professional groups at different levels (with experts in other fields of knowledge/types of economic activity)<br>GC11 Ability to evaluate and ensure the quality of work performed<br>GC12. Commitment to environmental protection<br>PC1. Ability to establish the features of the structure and functioning of cells, tissues, organs, their systems and apparatuses of the body of animals of different classes and species - mammals, birds, insects (bees), fish and other vertebrates<br>PC2. Ability to use tools, special devices, instruments, laboratory equipment and other technical means to perform the necessary manipulations during professional activities<br>PC3. Ability to follow the rules of labor protection, asepsis and antiseptics during professional activities<br>PC4. Ability to conduct clinical studies to formulate conclusions about the condition of animals or establish a diagnosis.<br>PC7. Ability to organize and conduct laboratory and special diagnostic tests and analyze their results<br>PC8. Ability to plan, organize and implement measures to treat animals of different classes and species suffering from non-communicable, infectious and invasive diseases. | | normal and pathological conditions<br>PLO 4. Collect anamnestic data during registration and examination of animals, make decisions on choosing effective methods of diagnosis, treatment and prevention of animal diseases.<br>PLO 5. Establish a relationship between the clinical manifestations of the disease and the results of laboratory tests.<br>PLO7. Formulate conclusions regarding the effectiveness of selected methods and means of keeping, feeding and treating animals, prevention of infectious and non-infectious diseases, as well as production and technological processes at enterprises for keeping, breeding or operating animals of various classes and species.<br>PLO 17. Know the rules and requirements of biosafety, bioethics and animal welfare |

## STRUCTURE OF THE EDUCATIONAL COMPONENT

### Section 1. Pathophysiology of typical pathological processes, principles of diagnosis, treatment and prevention

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| Lecture 1. | Inflammation. Systemic and local inflammatory reaction is the basis for the development of multiple organ failure syndrome (etiology, pathogenesis, principles of treatment) | Laboratory and practical class 1 (LPC 1)<br><br>LPC 2 | Clinical pathophysiology of extreme and terminal conditions: shock, collapse, coma (principles of treatment and prevention)<br>Allergy. Nature of allergens. Principles of allergy diagnosis. Types and mechanisms of desensitization. Principles and treatment of allergic reactions. | Independent work | Typical metabolic disorders: mechanisms of hyper- and dehydration. Principles of edema treatment. Characteristics of acidosis and alkalosis, basic laboratory criteria and mechanisms of detected disorders in the patient's body.<br>Pathogenetic features of the treatment of metabolic disorders |
| Lecture 2. | Tumor processes. Tumor progression in oncology and oncohematology, pathophysiological features of tumor treatment in animals | LPC 3 | Pathogenesis of tumor growth. Extended classification of tumors | | Hemoblastoses of cats and dogs and the possibilities of bone marrow transplantation in these animals. |
| Chapter 2. Clinical pathophysiology of organs and systems | | | | | |
| Lecture 3. | Clinical pathophysiology of blood: pathogenetic characteristics of anemia classifications for the analysis of their manifestations.<br>Typical disorders in the white blood system: analysis of the mechanism of development and causes of changes in the cellular composition of "white blood", their clinical manifestations and consequences. | LPC 4 | Pathogenetic bases of diagnostics of leukemias and other hemoblastoses of animals, features of results of therapy. | Independent work | Thrombohemorrhagic syndromes:<br>- disorders in the walls of microvessels;<br>- disseminated intravascular coagulation syndrome (DIC syndrome)"<br>- thrombolytic syndrome;<br>main hemorrhagic diseases and syndromes |

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| Lecture 4 | Hypertensive syndrome in animals: types, etiology and pathogenesis, basic algorithms for diagnosis, prevention and treatment | LPC 5 | Ischemic heart disease (IHD) in animals, pathophysiological principles of treatment and prevention | | The main consequences of myocardial reperfusion and methods of their prevention. Reversible ischemic/reperfusion injury of the myocardium and adaptive responses of the myocardium to this pathology. |
| | | LPC 6 | Upper and lower airway obstruction syndrome. Bronchoobstruction. Chronic obstructive pulmonary disease. | | Pneumosclerosis, etiology and pathogenesis, methods of disease prevention |
| Lecture 5. | Modern ideas about the mechanisms of damage to the gastrointestinal tract. Principles of prevention and treatment of peptic ulcer disease. | LPC 7 | Pathogenetic mechanisms of acute pancreatitis development. Local and systemic changes in its pathogenesis. Pancreatic shock, rationale, methods of treatment and prevention. | | Acute lung injury syndrome. Methods of medical care and its etiopathological significance.<br>Modern ideas about the pathogenetic formation of mechanisms of nervous system disorders. Motor and sensory disorders, their etiopathogenetic features, basic principles of pathogenetically determined pharmacological correction. |
| | | LPC 8 | Syndromes of acute and chronic renal failure (nephrotic syndrome, pyelonephritis, etc.) etiology, pathogenesis, algorithms for diagnosis, treatment and prevention. | | Urolithiasis in cats and dogs, etiology, pathogenesis, clinical manifestations, diagnosis, treatment and prevention |
| Lecture 6. | Main endocrine diseases of animals, etiology, pathogenesis, clinical manifestations and methods of prevention and treatment | LPC 9 | Diabetes mellitus in animals. Etiopathogenetic characteristics, methods of treatment and prevention<br>Test control work, solving situational problems. | | Hypo- and hyperthyroidism syndrome, chronic adrenal insufficiency syndrome |

## BASIC LITERATURE AND METHODOLOGICAL MATERIALS

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| Literature | 1. Zhukova I.O., Denisova O.M., BobrytPCa O.M., Kostyuk I.O., Kochevenko O.S., Vodop'yanova L.A., Yugai K.D. Pathological physiology: an explanatory dictionary. Kharkiv: Publishing house of the Municipal Printing House, 2023. 239 p.<br>2. Zaiko M.N., Byts Yu.V., Kryshtal M.V. and others. Pathophysiology: textbook (Higher Education University III-IV years); ed. M.N. Zaiko, Yu.V. Byts, M.V. Kryshtal. 6th ed., revised and supplemented. Kyiv: "Medicine", 2017. 736 p.<br>3. Ataman O.V. Pathophysiology: in 2 vols. T1. General pathology: textbook for university students 3rd edition. Vinnytsia: "New Book", 2006. 584p.<br>4. Ataman O.V. Pathophysiology: in 2 vols. T2. Pathophysiology of organs and systems: a textbook for students of higher educational institutions, 3rd edition. Vinnytsia: "New Book", 2019. 448 p.<br>5. Kostenko V.O., Akimov O.E., YelinPCa A.M., Kovaleva I.O. Pathophysiology of the Blood System : Textbook. Lviv, 2022. 164 p.<br>6. Rykalo N.A. Typical pathological processes. Textbook. Vinnytsia, 2015. 150 p.<br>7. Oncology / G.V. Bondar, A.I. Shevchenko, I.Y. Galaychuk, Yu.V. DumanPCy and others. : textbook. – 2nd edition: K. "Medicine", 2019, 520 p.<br>8. Shevchenko A. I., Kolesnik O. P., Shevchenko N. F. and others. Oncology: textbook; edited by A. I. Shevchenko. Vinnytsia: Nova Knyga, 2020. 488 p.<br>9. Regeda M.S., Trutyak I.R., Gaiduchok I.G. and others. Emergency conditions; edited by Doctor of Medical Sciences Regeda M.S. Lviv, 2001. 847. | Methodological support | 1. Manual for practical classes in pathological physiology / Edited by Yu.V. Byts, L.Ya. Danilova. – K.: Zdorovya., 2001.<br>2. Multimedia repository. |

## EVALUATION SYSTEM

| SYSTEM | | POINTS | ACTIVITY TO BE EVALUATED |
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| **Final assessment (different credit, exam)** | **100 points ECTS (standard)** | **up to 100** | **40 % - Final testing**<br>**60 % - student's current work during the semester** |

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| **Final assessment (non-differential credit)** | **100 points ECTS (standard)** | **up to 100** | **100 % - average grade for sections** |
| **Rating of section** | **100 points total** | **up to 30** | **30 % - answers to test questions** |
| | | **up to 30** | **30 % - the result of mastering the block of independent work** |
| | | **up to 40** | **40 % - student activity in class (oral answers)** |

**NORMS OF ACADEMIC ETHICS AND INTEGRITY**

**All participants in the educational process (including students) must adhere to the code of academic integrity and the requirements set forth in the regulation " On Academic Integrity of Participants in the Educational Process of SBU ": to demonstrate discipline, good manners, respect each other's dignity, show kindness, honesty, and responsibility.**