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**NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE**

Department The Department of Veterinary Surgery named after I. Povazhenko

 “**CONFIRMED**”

 Dean of the Faculty Faculty of veterinary medicine

\_\_\_\_\_\_\_ M. TSVILIKHOVSKIY

“\_\_\_\_”\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2024.

 “**APPROVED**”

at the meeting of the Department of

Veterinary Surgery named after I. Povazhenko

Protocol №\_12\_\_ dated “16” of May 2024.

 Head of Department

\_\_\_\_\_\_\_\_\_\_\_\_ M. MALIUK

”**REVIEWED** ”

Program Coordinator of the educational and professional

program "Veterinary Medicine"

 Program Coordinator

\_\_\_\_\_\_\_\_\_\_\_\_ N. GRUSHANSKA

## PROGRAM OF THE COURSE

 **"GENERAL AND SPECIAL SURGERY "**

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Subject area «Veterinary medicine»

Specialization 211 «Veterinary medicine»

Educational program «Veterinary medicine»

Faculty (Institute) Faculty of veterinary medicine

Developers: Kulida M., PhD, Asoc prof.; Klymchuk V. PhD, Asoc prof.\_\_\_\_\_\_\_\_\_

(position, academic degree, academic title)

Kyiv – 2024.

# **Description of the course**

 **«GENERAL AND SPECIAL SURGERY»**

 (title)

|  |
| --- |
| **Field of knowledge, specialization, educational program, educational degree** |
| Educational degree | «Master» |
| Specialization | 211 «Veterinary medicine» |
| Educational program | «Veterinary medicine» |
| **Characteristics of the course** |
| Type | Compulsory |
| Total number of hours | 210 |
| Number of ECTS credits | 7 |
| Number of content modules | 7 |
| Course project (work) (if applicable) | − |
| Form of assessment | *Exam Credit* |
| **Indicators of the course for full-time and part-time forms of study** |
|  | Full-time form of study | Part-time form of study |
| Course (year of study) | *4. 5* |  |
| Semester | *7, 8, 9* |  |
| Lecture classes | *60 hr.* | *hr.* |
| Practical, seminar classes | *−* | *hr.* |
| Laboratory classes | *90 hr.* | *hr.* |
| Self-study | *60 hr.* | *hr.* |
| Individual assignments | *− hr.* | *hr.* |
| Number of weekly classroom hours for the full-time form of study | *4 Year, 1 Semester – 4,* *4 Year, 2 Semester – 3,**5 Year, 1 Semester – 3.*  |  |

# **Purpose, objectives, and competencies of the course**

Purpose mastering the basics of surgical pathology with a specific idea of ​​the causes, etiology, pathogenesis, diagnosis and apply a comprehensive approach to the treatment of surgically ill animals.

Objectives to combine in practice knowledge and skills in general biological disciplines directly with clinical, to learn the basics of surgical pathology, to form a clear idea of the causes, pathogenesis, principles of treatment and prevention of surgical diseases of animals.

As a result of studying the discipline the student must:

Know: the clinical manifestation of surgical diseases that are registered in animals, to identify the causes of their occurrence, to be able to make an accurate diagnosis, to have sufficient operative and conservative methods of treatment.

Be able: to correctly diagnose, provide the necessary individual surgical care to a sick animal, to carry out preventive measures aimed at preventing the emergence of mass surgical diseases, to give them a scientific and economic justification.

 ***Acquisition of competencies:***

Integrated competency (IC): the ability to solve specialized tasks and problems in professional activities in the field of veterinary medicine in the field of "Anesthesiology"

General competencies (GC):

GC 2. Ability to apply knowledge in practical situations.

GC 3. Knowledge and understanding of the subject field and profession.

GC 7. Ability to conduct research at an appropriate level.

GC 9. Ability to make informed decisions.

Professional (special) competencies (PC):

PC2. The ability to use tools, special devices, devices, laboratory equipment and other technical means to carry out the necessary manipulations during professional activities.

PC7. Ability to organize and conduct laboratory and special diagnostic studies and analyze their results.

PC12. Ability to develop and implement measures aimed at protecting the population from diseases common to animals and humans.

**Program learning outcomes (PLO)**:

1. Know and correctly use the terminology of veterinary medicine.

2. Use information from domestic and foreign sources to develop diagnostic, treatment and business strategies.

3. To determine the essence of physico-chemical and biological processes that occur in the body of animals in normal and pathological conditions.

4. To establish a connection between the clinical manifestations of the disease and the results of laboratory studies.

6. Develop quarantine and health measures, methods of therapy, prevention, diagnosis and treatment of diseases of various etiologies.

7. To monitor the causes of the spread of diseases of various etiologies and biological pollution of the environment with livestock waste, as well as materials and means of veterinary use.

9. Develop measures aimed at protecting the population from diseases common to animals and humans.

10. Propose and use expedient innovative methods and approaches to solving problematic situations of professional origin.

11. Summarize and analyze information on the effectiveness of the work of veterinary specialists of various subordinates.

12. Know the rules and legislative regulations regarding supervision and control of production, storage, transportation and sale of products of animal and plant origin.

13. Know the rules of storage of various pharmaceuticals and biological preparations, ways of their enteral or parenteral use, understand the mechanism of their action, interaction and complex action on the animal body.

14. Know the principles and methods of marketing and management of veterinary products and services in veterinary medicine.

15. Know the rules and requirements of biosafety, bioethics and animal welfare.

16. Carry out accounting reports during professional activity.

17. To carry out educational activities among industry workers and the population.

18. To have specialized software tools for performing professional tasks.

# **Program and structure of the course for:**

**–** complete full-time (part-time) form of study;

|  |  |
| --- | --- |
| Themes | Hours quantity |
| full-time education | external form of education |
| week | total |  | total |  |
| lecture | pract | lab | pers | ind | l | pr | lab | pers | ind |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| **Module 1.**  |
| Topic 1. A brief history of veterinary medicine. The subject of general medicine and its connection with other disciplines | 1 | 4 | 2 | - | 2 | - | - | - |  |  |  |  |  |
| Topic 2. General information about surgical diseases of animals, methods of treatment and prevention. | 2 | 5 | 2 |  | 2 |  | 1 |  |  |  |  |  |  |
| Topic 3. Injuries to animals (classification, prevention). The impact of injury on the body. | 3 | 6 | 2 |  | 2 |  | 2 |  |  |  |  |  |  |
| Topic 4. Bleeding. Acute anemia. Classification of bleeding and ways to stop it. | 4 | 4 | 2 |  | 2 | - | - |  |  |  |  |  |  |
| Topic 5. Closed animal injuries. | 5 | 4 | 2 |  | 2 | - | - |  |  |  |  |  |  |
| Topic 6. Wounds (open mechanical damage). Symptoms, classification, types of healing. | 6 | 6 | 2 |  | 2 |  | 2 |  |  |  |  |  |  |
| Topic 7. Surgical infection: types and clinical manifestations. | 7 | 6 | 2 |  | 2 |  | 2 |  |  |  |  |  |  |
| Topic 8. Diseases of blood and lymphatic vessels. Damage to peripheral nerves. | 8 | 4 | 2 |  | 2 |  |  |  |  |  |  |  |  |
| **Module 2.** |
| Topic 9. Killing, ulcers, fistulas. Foreign bodies. | 9 | 4 | 2 |  | 2 |  |  |  |  |  |  |  |  |
| Topic 10. Displacement of internal organs. | 10 | 4 | 2 |  | 2 |  |  |  |  |  |  |  |  |
| Topic 11. Skin diseases (symptoms, diagnosis and treatment). | 11 | 4 | 2 |  | 2 |  |  |  |  |  |  |  |  |
| Topic 12. Muscle diseases (myositis, myopathosis and atrophy). | 12 | 4 | 2 |  | 2 | - | - | - | - | - | - | - | - |
| Topic 13. Diseases of tendons, tendon sheaths and bursae. | 13 | 4 | 2 | - | 2 | - | - | - | - | - | - | - | - |
| Topic 14. Diseases of bones and joints. | 14 | 6 | 2 | - | 2 |  | 2 | - | - | - | - | - | - |
| Topic 15. Neoplasms. Classification. Methods of diagnosis and treatment. | 15 | 5 | 2 |  | 2 |  | 1 |  |  |  |  |  |  |
| **TEST** |
| **Total in 7th semester** | 70 | 30 |  | 30 |  | 10 |  |  |  |  |  |  |
| **Module 3.** |
| Topic 16. Anatomy and physiology of the visual organ in animals. | 1-2 | 8 | 2 |  | 4 |  | 2 | - | - | - | - | - | - |
| Topic 17. Research of the organ of vision. | 3-4 | 8 | 2 |  | 4 |  | 2 |  |  |  |  |  |  |
| Topic 18. Diseases of the eyelids, conjunctiva and cornea. | 5-6 | 8 | 2 |  | 4 |  | 2 | - | - | - | - | - | - |
| Topic 19. Inflammation of the vascular tract and retinal disease. | 7-8 | 8 | 2 |  | 4 |  | 2 |  |  |  |  |  |  |
| **Module 4.** |
| Topic 20. Anatomical and physiological characteristics of the fingers in animals. Features of the structure | 9-10 | 10 | 2 |  | 4 |  | 4 |  |  |  |  |  |  |
| Topic 21. Hoof care and deformities. | 11-12 | 10 | 2 |  | 4 |  | 4 |  |  |  |  |  |  |
| Topic 22. Diseases of the hooves in cows. | 13-14 | 8 | 2 |  | 4 |  | 2 |  |  |  |  |  |  |
| Topic 23. Features of deformities and diseases of the hooves of horses. | 15 | 5 | 1 |  | 2 |  | 2 |  |  |  |  |  |  |
| **TEST** |
| **Total in 8th semester** | 65 | 15 |  | 30 |  | 20 |  |  |  |  |  |  |
| **Module 5.** |
| Topic 24 Diseases in the head (injuries, diseases of bones and peripheral nerve endings). | 1-2 | 12 | 2 |  | 5 |  | 5 | - | - | - | - | - | - |
| Diseases in the oral cavity. | 3-4 | 10 | 2 |  | 4 |  | 4 | - | - | - | - | - | - |
| **Module 6.** |
| Topic 26. Diseases of the spine. | 5-6 | 10 | 2 |  | 4 |  | 4 |  |  |  |  |  |  |
| Topic 27. Diseases in the pelvic cavity. | 7-8 | 10 | 2 |  | 4 |  | 4 | - | - | - | - | - | - |
| Topic 28. Diseases in abdomen cavity | 9-10 | 10 | 2 |  | 4 |  | 4 | - | - | - | - | - | - |
| **Module 7.** |
| Topic 29. Diseases in the chest. | 11-12 | 10 | 2 |  | 4 |  | 4 | - | - | - | - | - | - |
| Topic 30. Diseases of the pelvic limb. | 13-15 | 13 | 3 |  | 5 |  | 5 |  |  |  |  |  |  |
| **EXAM** |
| **Total in 9th semester** | 75 | 15 |  | 30 | - | 30 | - | - | - | - | - | - |
| **TOTAL in course** | **210** | **60** | **-** | **90** | **-** | **60** | **-** | **-** | **-** | **-** | **-** | **-** |

# Seminar topics

|  |  |  |
| --- | --- | --- |
| № | Topic title | Number of hours |
| 1 | − | − |

# Practical class topics

|  |  |  |
| --- | --- | --- |
| № | Topic title | Number of hours |
| 1 | − | − |

# Laboratory class topics

|  |  |  |
| --- | --- | --- |
| N | Theme | Hours |
| **Module 1.** |
| **1.** | Familiarity with the work of the surgical clinic. Outpatient and inpatient treatment of animals. Documentation. | **2** |
| **2.** | Methods of clinical examination of animals with surgical pathology. Preparing animals for surgery. Postoperative care of animals. | **2** |
| **3.** | Local reaction of the body to injury: inflammatory processes. General methods of treatment of animals with inflammatory processes. | **2** |
|  **4.** | Novocaine therapy. Methods of stimulating therapy in surgical diseases. | **2** |
| **5.** | Shock. Classification, symptoms and methods of prevention and treatment. | **2** |
| **6.** | Closed damage. Thermal and chemical damage. Electrotrauma. | **2** |
| **7.** | Technique of research of the general condition of the wounded animal, research of a wound, surgical processing of wounds. Wound healing. Imposition of primary and secondary sutures. | **2** |
| **8.** | Sepsis (classification, clinical picture, treatment and prevention). | **2** |
| **Module 2.** |
| **9.** | Diagnosis and treatment of animals with diseases of death, ulcers and fistulas. Foreign bodies (symptoms and treatment of animals with this pathology). | **2** |
| **10.** | Types of displacements of internal organs, causes, diagnosis and treatment. | **2** |
| **11.** | Causes of dermatitis and eczema in animals. Diagnosis and treatment. | **2** |
| **12.** | Symptoms of myositis and myopathosis. Causes of muscle atrophy. Diagnosis and treatment. | **2** |
| **13.** | Pathogenesis, clinical picture and treatment of diseases of tendons, tendon sheaths and bursae. | **2** |
| **14.** | Methods of diagnosis and treatment of bone fractures. | **2** |
| **15.** | Diagnosis and treatment of animals with various tumors. | **2** |
| **TEST** |
| **Module 3.** |
| **16.** | Anatomical structure and physiology of the organ of vision. | **2** |
| **17.** | Examination of the eye and its protective devices. | **2** |
| **18.** | Operations and surgical interventions in the treatment of animals with pathologies of the visual organ. | **2** |
| **19.** | Diseases of the eyelids, connective tissue and lacrimal apparatus. | **2** |
| **20.** | Diseases of the cornea and keratoconjunctivitis. | **2** |
| **21.** | Diseases of the vascular membrane of the eye and pathological condition of ventricular moisture. | **2** |
| **22.** | Diseases of the lens, pathology of the vitreous and optic nerve. | **2** |
| **23.** | Pathology of internal pressure, eye injuries and viral eye lesions. |  |
| **Module 4.** |
| **24.** | Anatomical and physiological features of the structure of the hooves of horses, toes and hooves of productive animals and toes of small animals. | **2** |
| **25.** | The mechanism of hooves and hooves, limbs and its effect on the shape of the hooves. | **2** |
| **26.** | Pododermatitis. Diagnosis and treatment. | **2** |
| **27.** | Septic subdermatitis. |  |
| **28.** | Defeat of synovial formations. |  |
| **29.** | Hoof diseases characteristic of horses. |  |
| **30.** | General issues of prevention of hoof diseases. Horseshoeing. | **2** |
| **TEST** |
| **Module 5** |
| **31.** | Diseases of the oral cavity: inflammation and dislocation of the mandibular joint, retention cysts and wounds, diseases of the teeth and salivary glands. | **2** |
| **32** | Hematoma of the auricle and otitis. | **2** |
| **33** | Spinal necrosis and esophageal disease. | **2** |
| **34** | Closed injuries and purulent processes in the withers. | **2** |
| **35** | Pneumothorax and hemothorax: etiology, diagnosis and treatment. | **2** |
|  | **Module 6** |  |
| **36** | Diseases of the bones in the chest and lower back. | **2** |
| **37** | Displacement of internal organs: torsion, strangulation, eventration, prolapse, prolapse. | **2** |
| **38** | Hernias, classification, clinical signs and treatment. | **2** |
| **39** | Causes and treatment of peritonitis. | **2** |
| **40** | Surgical diseases in the breast. | **2** |
| **41** | Andrology. | **2** |
| **42** | Post-castration complications. | **2** |
| **Module 7** |
| **43** | Diseases of the thoracic limb. | **2** |
| **44** | Diseases of the pelvic limb. | **2** |
| **45** | Minimally invasive surgery and plastic surgery. | **2** |
| **Total, hours** |  | **90** |
|  | **EXAM** |  |

# **Independent work topics**

|  |  |  |
| --- | --- | --- |
| № | Topic title | Number of hours |
| 1 |  |  |

# **Samples of control questions, tests for assessing the level of knowledge acquisition by students.**

1. Which of the types of injuries include limb injuries or other injuries to animals received in pastures and pens?

2. In which type of inflammation local clinical signs are moderate, and the general condition of the animal remains satisfactory?

3. What kind of inflammation is observed in ionizing radiation damage?

4. What is the name of the inflammation that develops on the mucous membranes, when mucus impurities appear in the exudate?

5. What is the main form of productive inflammation.

6. What kind of inflammation is characterized by a high content of fibrin and develops mainly in the mucous, synovial and mucous membranes.

7. What kind of inflammation is characterized by the content in the exudate of a large number of erythrocytes, due to a sharp increase in the permeability of the walls of the vessels of the microcirculatory tract.

8. In which species of animals the reactivity of the organism to trauma is characterized by the removal of the irritant from the site of inflammation by serous, rarely serous-fibrinous, and in infectious inflammation - serous-purulent exudation.

9. What is the name of hemorrhage into the joint cavity?

10. What are the disorders in the body that occur under the influence of mechanical, physical, chemical and other factors?

11. What is the name of the set of injuries, the occurrence, frequency and nature of which depends on certain conditions?

12. The reaction of the animal's body to the injury?

13. How many phases are distinguished in the development and course of inflammation?

14. What types of inflammation are distinguished depending on the intensity of the inflammatory reaction?

15. What is the name of the outflow of blood outside the damaged vessel to the outside, in the anatomical or newly formed cavity?

16. What is the name of bleeding into the newly formed cavity under pressure or anatomical?

17. What distinguishes bleeding by type of damaged blood vessels?

18. What is the name of the bleeding that occurred immediately after the vascular injury?

19. What is the name of the bleeding arising from purulent disintegration of a vascular wall?

20. What is the name of mechanical damage to the tissues of the animal's body with a violation of the integrity of the outer coverings?

21. What are the main symptoms of wounds?

22. Types of wound healing.

23. What is the name of the tissue that fills the wound defect?

24. What is the fundamental difference between closed injuries and wounds?

25. Physical methods of treatment of inflammatory processes include the following

26. Used in the treatment of purulent wounds, in order to clean the wound surface.

27. What therapy is contraindicated in acute purulent inflammatory processes with the release of large amounts of purulent exudate

28. How many stages or degrees of shock exist.

29. For the treatment of which type of shock, together with infusion therapy, antihistamines are administered simultaneously.

30. What is a hematoma called when connective tissue grows around the hematoma.

31. What does an infected hematoma turn into?

32. The most reliable way to stop bleeding.

33. In what period of time after vascular injury there is swelling of the lymph extravasats.

34. Is cold used in the treatment of lymph extravasations.

35. Do you use drainage in the treatment of lymph extravasations.

36. What sutures are applied to the organs in parenchymal bleeding

37. How surgical wounds heal

38. Is it possible to apply a suture to a granulating wound.

39. What method of surgical treatment is used in the treatment of wounds with a wide area of damage.

40. For what purpose make a complete excision of the wound.

41. What is called manipulation, which consists in removing hair, washing and disinfecting the skin around the wound and cleaning the wound surface from mechanical contamination.

42. What is most often used in the treatment of injured animals in the first phase of the wound process.

43. Purulent-enzymatic type of wound cleansing is observed in animals of which species?

44. What are the causes of secondary late bleeding.

45. What is the name of the process by which microfibroblasts cause spontaneous reduction of wound surfaces (to the full depth) or lumen of tubular organs after injury.

46. Classification of wounds by degree of infection.

47. How to heal superficial wounds of the skin or mucous membranes.

48. What is the name of a deep violation of the central nervous system, characterized first by a sharp excitation of it, and later - its depletion?

Test (example) № 1

1. What is bleeding?

2. What is periostitis?

1 Inflammation of the ligaments

2 Inflammation of the tendons

3 Inflammation of the periosteum

4 Inflammation of the muscles

3. Exile, what is this:

1 Esophageal obstruction

2 Shortening of the lower jaw

3 Shortening of the upper jaw

4 Hyperkinesis of the tongue

4. Is drainage used in the treatment of lymphoextravasation.

5. The pathognomonic sign of a bone fracture is:

1 Hyperemia of the skin in the area of the pathological focus

2 Swelling of the pathological focus

3 Subcutaneous hematoma in the area of the pathological focus

4 Bone crepitation

6. List the types of surgical infection, depending on the type of pathogen.

7. Inflammation of which bursa occurs in the back of the head?

8. Name the symptoms of open injuries

1 Bleeding, pain, gaping

2 Swelling of the skin, ulceration, vomiting

3 Colic, abdominal wall pain, papillomas

4 Acute anemia, itchy skin, fistula formation

9. Othematoma is

10. How to treat osteomyelitis ribs?

11. What is keratoconjunctivitis?

1 Inflammation of the eyelids (scaly, ulcerative, marginal)

2 Inflammation of the connective membrane of the eye and cornea

3 Inflammation of the iris and ciliary body

4 Inflammation of the choroid and retina

12. How is a joint wound treated?

13. What pathogens mainly cause sepsis with metastases?

14. Treatment of paresis of peripheral origin.

15. Orthosis is:

1 Chronic joint disease of non-inflammatory nature

2 Chronic proliferative inflammation of the joints

3 Aseptic inflammation of the joints

4 Purulent inflammation of the joints

16. The general reaction of the body to injury?

17. Haemothorax is

18. Is it possible to use massage in the treatment of abscesses?

19. Why is finger amputation performed in even-toed ungulates?

20. How to treat rectal prolapse?

21. Name the tissue that fills the wound defect.

22. What are the symptoms of exercise in my hernia?

23. For what purpose is arthrocentesis performed?

24. What types of tumors are found on the mucous membrane of the cavum oralae?

25. What is eczema?

1 Inflammation of the hair follicles

2 Inflammation of the base of the skin

3 Inflammation of the sebaceous glands

4 Inflammation of the epidermis

26. Provisional methods of stopping bleeding?

27. What is podotrochleitis?

28. Enucleacio oculi is…

29. What is gangrene? Name the types of gangrene.

30. What is forging and how it is treated?

Exam (example )№ 1

1. Injuries: classification and prevention.

2. Treatment of aseptic resorptive fever.

3. Enter the correct answer:

 3.1 Is myositis an inflammation?

 a) communication; b) muscles; c) periosteum; d) tendons

3.2 Name the symptoms of closed injuries:

 a) pain, bleeding; b) swelling of the skin, ulceration, vomiting; in); acute anemia, itchy skin; d) bleeding, pain, gaping.

3.3 Is drainage used in the treatment of abscesses?

a) yes; b) no.

 3.4 What surgical infection is caused by purulent microorganisms?

a) anaerobic; b) putrefactive; c) aerobic; d) specific.

3.5 Limited purulent tissue inflammation is

 a) pyemia; b) phlegmon; c) septicemia; d) abscess.

3.6 All accidental wounds heal -

 a) under the scab; b) secondary tension; c) primary tension; d) never heal.

3.7 How many stages of care exist

 a) 3; b) 5; c) 4; d) 6.

3.8 Complication of an abscess can be -

 a) wound; b) phlegmon; c) fistula; d) osteosarcoma; e) sepsis.

3.9 Inflammation of lymphatic vessels is

 a) phlebitis; b) lymphangitis; c) lymphadenitis; d) thrombophlebitis.

 3.10 Turning part of the gut into the lumen itself is

a) intussusception; b) turn; c) eventration; d) strangulation

# **Teaching methods.**

- Lectures.

- Conducting laboratory classes and developing methods.

- Survey during classes.

- Additional weekly consultations.

- Carrying out of boundary control - offset.

# **Forms of assessment**

- oral examination;

- tests on relevant topics;

- delivery of modules;

- passing the test.

1. **Distribution of grades received by students.** Evaluation of student knowledge is carried out on a 100-point scale and is converted to national grades according to Table 1 "Regulations and Examinations and Credits at NULES of Ukraine" (order of implementation dated 03.03.2021, protocol №7)

|  |  |
| --- | --- |
| **Student rating, points** | **National grade based on exam results** |
| **Exams** | **Credits** |
| **90-100** | **Excellent** | **Passed** |
| **74-89** | **Good** |
| **60-73** | **Satisfactory** |
| **0-59** | **Unsatisfactory** | **Not passed** |

In order to determine the rating of a student (listener) in the discipline **Rdis** (up to 100 points), the rating from the exam **Rex**(up to 30 points) is added to the rating of a student's academic work **Raw** (up to 70 points): **Rdis  = Raw  + Rex .**

# **11. Educational and methodological support.**

1. Куліда М.А., Дорощук В.О., Сухонос В.П., Солонін П.К., Литвиненко Д.Ю., Ткаченко С.М., Тарнавський Д.В., Пріліпко О.В., Кровотечі (етіологія, патогенез, лікування) / Методичні вказівки для студентів зі спеціальності 6.110101 - «Ветеринарна хірургія». – 26 c.

2. Сухонос В.П., Дорощук В.О.,Тарнавський Д.В., Ткаченко С.М., Солонін П.К., Литвиненко Д.Ю., Петренко О.О., Пріліпко О.В., Куліда М.А., Корж А.В. Дисплазії суглобів кінцівок у собак (етіологія, патогенез, лікування, профілактика) Методичні вказівки для магістрів вищих навчальних закладів ІІІ-IV рівнів акредитації із спеціальності 8.110101 – «Ветеринарна медицина».- 59с.

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