

**ODESSA NATIONAL MEDICAL UNIVERSITY**  
**Faculty of Dentistry**  
**Department of Normal and Pathological Clinical Anatomy**

**SYLLABUS OF THE COURSE**  
**" Pathomorphology "**

<b>The volume of the course</b>	Stomatological faculty, 106 hours, 3.5 credits ECTS
<b>Semester, year of study</b>	4-5 Semester , II- III year of study
<b>Days, time, place</b>	According to the schedule in classrooms of Department of Normal and Pathological Clinical Anatomy (cycle Pathomorphology)
<b>Teachers</b>	<p>Appelhans O L,, <i>Head of the Department, MD, Professor;</i>  Sytnikova VO, <i>MD , professor of the department ;</i>  Litvinenko MV, <i>Candidate of Medical Sciences, Associate Professor;</i>  Oliynyk NM, <i>Candidate of Medical Sciences , Associate Professor;</i>  Buryachkivsky ES, <i>Candidate of Medical Sciences, Associate Professor;</i>  Narbutova TYe, <i>Candidate of Medical Sciences, Assistant Professor;</i>  Vasiliev VV, <i>Assistant;</i>  Syviy SM, <i>Assistant ;</i>  Logachova AI, <i>Assistant;</i>  Savenko TO, <i>Assistant;</i>  Artyomov OV, <i>Candidate of Medical Sciences, Assistant Professor</i></p>
<b>Contact phone</b>	<p>Cathedral phone: (048) 728-54-17</p> <ol style="list-style-type: none"> <li>1. Appelhans OL           0674842052</li> <li>2. Sitnikova VO           0936711236</li> <li>3. Litvinenko MV         0667545526</li> <li>4. Oliynyk NM            0679943704</li> <li>5. Buryachkivsky ES     0682555212</li> <li>6. Narbutova TYe         0969980238</li> <li>7. Vasiliev VV            0487983279</li> <li>8. Syviy SM               0632927999</li> <li>9. Logacheva AI .        0674856697</li> <li>10. Savenko TO           0936909090</li> <li>11. Artyomov OV         0678587681</li> </ol>
<b>E-mail</b>	<b>anatomy @ onmedu . edu . ua</b>
<b>Workplace</b>	Odessa , Valikhovsky Lane, 3a. Morphological building. Department of Normal and Pathological Clinical Anatomy, 2-nd floor (cycle of pathomorphology).
<b>Consultations</b>	Consultations are conducted by teachers of the

<p>department according to the schedule:</p> <p>Face-to-face consultations: Thursday from 14.30 to 16.00; Saturday from 9.00 to 14.00</p> <p>On -line consultations: Thursday from 14.30 to 16.00; Saturday from 9.00 to 12.00</p> <p><a href="https://moodle.odmu.edu.ua/">https://moodle.odmu.edu.ua/</a> or via <i>Microsoft Teams</i> / Telegram / Viber / Zoom</p>
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**COMMUNICATION** is carried out with the help of the E-mail department: [anatomy@onmedu.edu.ua](mailto:anatomy@onmedu.edu.ua) , as well as with the help of Viber and Telegram messengers and through the sites [www.anatom.in.ua](http://www.anatom.in.ua) , <https://anatom.ua/><https://meduniver.com/> / **Medical / Anatom**

### **COURSE ANNOTATION**

The discipline "Pathomorphology" is studied in accordance with the Standard of higher education of the second (master's) level of knowledge 22 "Health" specialty 221 "Dentistry" of the educational program of Master of Medicine.

**The subject of the study** discipline "Pathomorphology" , is the structural basis of human diseases for advanced mastering the fundamentals of medicine and clinical picture of the disease then use the obtained knowledge in doctor's practice.

**The purpose of the course:** The purpose of teaching the discipline " Pathomorphology " is to study the microscopic and ultramicroscopic structure of the human body, their development and changes in various living conditions to study the clinic, differential diagnosis and use of knowledge in practice, taking into account age characteristics.

**The main tasks of studying the discipline " Pathomorphology ":**

**Knowledge:** study of typical general pathological processes, the set of which determines the morphological manifestations of diseases; be able to define various pathologies; briefly explain the etiology and pathogenesis, form the basic principles of classification, describe the macro- and microscopic picture taking into account age, name the results, complications and causes of death.

**Understanding:** to explain the patterns of development of various pathologies , to explain the features of macro- and microscopic changes depending on the etiology, form and stage of the disease; to carry out differential diagnosis, to explain the nature of possible complications and results that have developed in the tissues.

**Use of knowledge in practice:** to demonstrate mastery of the terminological apparatus of the discipline, to conduct a macro- and microscopic description of pathological changes, to mark on microphotographs detected pathological changes, to solve educational situational clinical problems using knowledge of pathomorphology.

**Expression of opinions, evaluation of ideas and formation of conclusions:** formation of own conclusions on the results of macro- and microscopic research, expression of opinions on the functional significance of the detected morphological changes, description of the impact of structural changes of affected tissue on other organs, systems and organism as a whole.

Transfer of own understanding and skills: ability to compile knowledge of pathomorphology with coverage of own considerations and formation of conclusions in the form of abstracts and presentations; improving public speaking skills with analysis and synthesis of information.

Ability to continue further independent learning: to use knowledge of pathomorphology to master post-requisite clinical disciplines.

According to the requirements of the Standard, the discipline " Pathomorphology " provides students with the acquisition of competencies :

**Integral competence:** The ability to solve typical and complex specialized problems and problems in the field of health care in the specialty "Dentistry", in professional activities or in the learning process, which involves research and / or innovation and is characterized by complexity and uncertainty of conditions and requirements.

### **General competencies (GC) :**

1. Ability to abstract thinking, analysis and synthesis. 2. Knowledge and understanding of the subject area. and understanding of professional activity. 3. Ability to apply knowledge in practice. 4. Ability to communicate in the state language both orally and in writing. 5. Ability to communicate in English. 6. Skills in the use of information and communication technologies. 7. Ability to search, process and analyze information from various sources. 8. Ability to adapt and act in a new situation. 9. Ability to identify, pose and solve problems. 10. Ability to be critical and self-critical. 11. Ability to work in a team. 12. The desire to preserve the environment. 13. The ability to act socially responsibly and consciously. 14. The ability to exercise their rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, rule of law human and civil liberties in Ukraine. 15. Ability to preserve and increase moral, cultural, scientific values and achievements of society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technology, use different types and forms of motor activities for active recreation and a healthy lifestyle.

### **Professional competencies of the specialty (PC):**

1. Ability to collect medical information about the patient and analyze clinical data .
2. Ability to interpret the results of laboratory and instrumental research.
3. Ability to diagnose: determine the preliminary, clinical, final, concomitant diagnosis, emergencies.
4. Ability to plan and implement measures for the prevention of diseases of organs and tissues of the oral cavity and maxillofacial region.
5. Ability to design the process of providing medical care: to determine the approaches, plan, types and principles of treatment of diseases of organs and tissues of the oral cavity and maxillofacial region.

6. Ability to determine the rational mode of work, rest, diet in patients in the treatment of diseases of organs and tissues of the oral cavity and maxillofacial region.
7. Ability to determine the tactics of management of patients with diseases of organs and tissues of the oral cavity and maxillofacial region with concomitant somatic diseases.
8. Ability to perform medical and dental manipulations.
9. Ability to treat major diseases of organs and tissues of the oral cavity and maxillofacial region.
10. Ability to organize and conduct medical evacuation measures.
11. Ability to determine tactics, methods and provide emergency medical care.
12. Ability to organize and conduct screening examinations in dentistry.
13. Ability to assess the impact of the environment on the health of the population (individual, family, population).
14. Ability to maintain regulatory medical records.
15. Processing of state, social and medical information.
16. Ability to organize and conduct rehabilitation activities and care for patients with diseases of the oral cavity and maxillofacial region.
17. Ability to legally support their own professional activities.
18. Ability to provide domedychnu care protocols tactical medicine.
19. Ability to evaluate the results of autopsy, research of biopsy-section material .
20. Ability to analyze the morphological manifestations of diseases.
21. Ability to analyze the structural basis of the development of diseases and their clinical manifestations, the structural basis of recovery, complications and consequences.
22. Ability to master the methods of pathomorphological research: autopsy , biopsy.

### **Program learning outcomes**

PLO 1. Identify and identify the leading clinical symptoms and syndromes (according to list 1); to establish a probable nosological or syndromic preliminary clinical diagnosis of a dental disease according to standard methods, using preliminary data of the patient's anamnesis, data of the patient's examination, knowledge about the person, his organs and systems .

PLO 2. Collect information about the general condition of the patient, assess the psychomotor and physical development of the patient, the condition of the maxillofacial organs, based on the results of laboratory and instrumental studies to assess information about the diagnosis .

PLO 3. Assign and analyze additional (mandatory and optional) survey methods (laboratory, radiology, functional and / or instrumental) on the list of 5 patients with diseases of organs and tissues of the oral cavity and maxillofacial region for differential diagnostician diseases .

PLO 4. Determine the final clinical diagnosis in accordance with the relevant ethical and legal norms, by making an informed decision and logical analysis of the obtained subjective and objective data of clinical, additional examination, differential diagnosis under the supervision of a doctor in a medical institution .

PLO 5. To diagnose emergencies under any circumstances (at home, on the street, in a medical institution), in an emergency, martial law, lack of information and limited time .

PLO 6. Plan and implement measures for the prevention of dental diseases among the population to prevent the spread of dental diseases.

PLO 7. Analyze the epidemiological situation and carry out measures of mass and individual, general and local drug and non-drug prevention of dental diseases.

PLO 8. To determine the approach, plan, type and principle of treatment of dental disease by making an informed decision according to existing algorithms and standard schemes.

PLO 9. To determine the nature of the regime of work, rest and the necessary diet in the treatment of dental diseases on the basis of preliminary or final clinical diagnosis by making an informed decision according to existing algorithms and standard schemes.

PLO 10. To determine the tactics of managing a dental patient with somatic pathology by making an informed decision according to existing algorithms and standard schemes.

PLO 11. To carry out treatment of the basic stomatologic diseases according to existing algorithms and standard schemes under the control of the doctor of the head in the conditions of medical institution .

PLO 12. Organize medical and evacuation measures among the population, servicemen, in emergency situations, including martial law, during the detailed stages of medical evacuation, taking into account the existing system of medical evacuation support.

PLO 13. Determine the tactics of emergency medical care, using the recommended algorithms, under any circumstances on the basis of a diagnosis of emergency in a limited time .

PLO 14. Analyze and evaluate state, social and medical information using standard approaches and computer information technologies.

PLO 15. Assess the impact of the environment on the health of the population in a medical institution by standard methods.

PLO 16. To form the purposes and to define structure of personal activity on the basis of result of the analysis of certain public and personal needs.

PLO 17. Adhere to a healthy lifestyle, use the techniques of self-regulation and self-control.

PLO 18. To be aware of and guided in their activities by civil rights, freedoms and responsibilities, to raise the general cultural level.

PLO 19. Adhere to the requirements of ethics, bioethics and deontology in their professional activities.

PLO 20. Organize the necessary level of individual safety (own and persons cared for) in case of typical dangerous situations in the individual field of activity

PLO 21. Perform medical manipulations on the basis of preliminary and / or final clinical diagnosis for different segments of the population and in different conditions .

PLO 22. Perform medical dental manipulations on the basis of preliminary and / or final clinical diagnosis for different segments of the population and in different conditions .

PLO 23. Perform manipulations emergency medical care, using the standard procedure for any - circumstances based on the diagnosis. Never declare state in terms of limitations of time.

PLO 24. Evaluate information on the diagnosis in the health care institution, its unit, using knowledge of the structural basis of the disease, based on the results of autopsy and methods of lifelong diagnosis of diseases.

## **COURSE DESCRIPTION**

### *Forms and methods of teaching*

The course will be presented in the form of lectures (16 hours) and practical classes (46 hours), organization of independent work of students (44 hours).

The lecture course covers problematic issues of the relevant sections of pathomorphology. Methods of educational and cognitive activity: explanatory-illustrative method, method of problem statement. This is done using multimedia presentations.

### **Discipline section 1. General pathomorphology .**

Topic 1. Introduction to pathomorphology. Subject and tasks of pathomorphology. Methods and techniques of pathological diagnosis. The main stages of development of pathomorphology. Morphological changes of cells in response to stress and toxic damage (parenchymal / cellular dystrophies). Morphological changes of the extracellular matrix (stroma) in response to damage (stromal vascular dystrophy). Exhaustion of the body. Pathomorphology of accumulation of products of disturbed metabolism. Disorders of iron metabolism and metabolism of hemoglobinogenic pigments, Pathomorphological manifestations of disorders of melanin formation, nucleoprotein and copper metabolism. Calcification (calcification) of tissues. Formation of stones in the organs.

Topic 2. Necrosis-definition, terms and phases of development, consequences. Clinical and morphological forms of necrosis. Pathological anatomy of multiorgan failure. Fundamentals of thanatology. Death, mechanisms, signs. Biological, medical, social aspects due to chronic incurable disease. The concept of thanatogenesis. Structural mechanisms of termination of vital organs during the natural course of the disease.

Topic 3. Final lesson. Practical skills.

Topic 4. Acute circulatory system disorders (acute coronary insufficiency, shock) and systemic disorders of the blood of about running in chronic heart failure and their consequences. Regional circulatory disorders (hyperemia, ischemia, plasmorrhagia, bleeding and hemorrhage). Disorders of lymph formation and circulation. Hemostasis disorders: hemorrhagic syndrome, thrombosis, DIC syndrome. Embolism. Thromboembolism of pulmonary artery thanatogenesis.

Topic 5. Violation of ion-osmotic and water balance, acid-base state.

Topic 6. Inflammation: causes, morphogenesis. Pathomorphology of exudative inflammation. Proliferative (productive) inflammation: with the formation of acute genital warts, around parasitic animals, intermediate productive inflammation, granulomatous inflammation. Specific proliferative inflammation.

Topic 7. Final lesson. Practical experience.

Topic 8 . Molecular pathomorphological bases of the immune response. Immune system in the prenatal and postnatal period. Pathology of immune processes: amyloidosis, hypersensitivity reactions , graft rejection reaction. Immune deficiency. Autoimmune diseases.

Topic 9 . Regeneration. Structural bases of physiological adaptation of organs and cells. Morphology of cell accommodation processes. Compensatory-adaptive processes.

Topic 10 . Oncogenesis . Anatomical and microscopic features and types of growth of benign and malignant tumors. Morphological characteristics of the main stages of development of malignant tumors. Clinical and morphological nomenclature of tumors. Tumors of the epithelium: benign organ-specific epithelial tumors, cancer (features of development and metastasis, the main histological forms). Benign and malignant non-epithelial ( mesenchymal ) tumors. Sarcoma: features of development and metastasis.

Topic 11 . Melanocyte tumors. Tumors of the central nervous system ( astroglial , oligodendroglial , ependymal , neuronal , meningeal ), cranial and paraspinal nerves.

Topic 12. Features of childhood tumors. Embryonic tumors. Germinogenic tumors. Teratomas and teratoblastomas . Tumors of the "adult type".

Topic 13 . Organ-specific tumors of the epithelium.

Topic 14 . Diseases of the musculoskeletal system. Parathyroid osteodystrophy, osteopetrosis , Paget 's disease , fibrous dysplasia, osteomyelitis, joint disease, muscular dystrophy, myasthenia. Bone-forming and cartilaginous tumors.

Topic 15 . Anemia. Thrombocytopathy . Tumors of hematopoietic and lymphatic proliferative tissue.

Topic 16 . Final lesson. Practical skills .

### **Section of the discipline - 2. Special pathomorphology .**

Topic 17 . Atherosclerosis and arteriosclerosis. Coronary heart disease. Hypertension and arteriosclerosis . Hypertension and symptomatic hypertension. Systemic connective tissue diseases with autoimmunization : rheumatism, systemic lupus erythematosus, rheumatoid arthritis, systemic scleroderma, dermatomyositis , ankylosing spondylitis .

Topic 18. Endocardial and myocardial diseases: cardiomyopathies , endocarditis, myocarditis, acquired heart defects.

Topic 19 . Systemic vasculitis, nodular nodosa , arteritis Takayasu , temporal ( giant cell ) arteritis, granulomatosis Wegener , obliteratsiynny thromboangiitis , Kawasaki disease, Purpura Shenlyayn-Henoch disease syndrome and Raynaud's . Sjogren 's syndrome .

Topic 20 . Cerebrovascular diseases. Postreanimation encephalopathy and brain death syndrome .

Topic 21 . Respiratory diseases.

Topic 22 . Diseases of the esophagus, stomach and intestines. Diseases of the liver, biliary system and pancreas.

Topic 23 . Kidney disease. Topic Hypothalamic-pituitary disorders. Pathology of the adrenal glands. Pathology of the thyroid gland. Pathology of the endocrine system of the pancreas.

Topic 24 . Diseases of the female and male reproductive systems. Pathology of pregnancy, postpartum and placenta. Illnesses ryuvannya breast cancer.

Topic 25 . Pre- and perinatal pathology.

Topic 26 . Pathology of changes in food-related diseases. Radiation sickness, nosocomial illness. Occupational diseases.

Topic 27 . Final lesson. Practical skills .

Topic 28 . Diseases of the hard tissues of the tooth (caries, non-carious lesions), pulpitis, periodontitis , periostitis, osteomyelitis of the jaw bones. Periodontal diseases, inflammatory diseases of the lips, tongue, gums, oral mucosa.

Topic 29 . Malformations of the face, neck and oral organs .

Topic 30 . Salivary gland diseases - clinical and morphological features of salivary glands, inflammatory diseases, autoimmune diseases , salivary stone disease, tumors and tumor-like diseases of salivary glands. Tumors and tumor processes of the oral mouth and jaw bones odontogenic and neodontoheenni tumor, papilloma, cancer of the oral mouth, precancerous changes (leukoplakia) nonepithelial tumors, tumors of the jaw bone (osteoblastoklastoma , osteoma, osteosarcoma, fibrous dysplasia , heruvizm ), jaw cysts (follicular cyst, keratocyst , eruption cyst).

Topic 31. Precancerous changes and tumors of the lips, tongue, soft tissues of the oral cavity.

Topic 32 . Clinical and morphological features of the organs of the dental system and oral cavity.

Topic 33 . Dental manifestations of other diseases

Topic 34 . Final lesson. Practical skills .

Topic 35 . General concepts of human infectious pathology. Classification of infectious diseases. Intestinal infectious diseases. Viral airborne infections. HIV and AIDS.

Topic 36 . Diseases caused by protozoa and helminths.

Topic 37 . Rabies. Rickettsiosis . Prion infections. Quarantine infections.

Topic 38 . Infections of childhood. Tuberculosis. Sepsis. Syphilis.

Topic 39 . Final lesson. Practical skills .

Topic 40 . Preparation for final control for the year .

#### **List of recommended reading:**

Basic:

1. Атлас мікропрепаратів з патоморфології / І.І. Старченко, Б.М. Филенко, Н.В. Ройко та ін.; ВДНЗУ “УМСА”.- Полтава, 2018.-190с.

2. Добраякісні новоутворення кісток щелепно-лищевої ділянки у дітей / П.І. Ткаченко, І.І.Старченко, С.О. Білокін [та ін.] – П.: “УМСА”, 2016. – 85с.

3. Загальна патоморфологія / І.І. Старченко, Н.В. Ройко, Б.М. Филенко [та ін.] – Полтава, 2016. – 136с.

4. Зербіно Д. Д. Патоморфологія та гістологія : атлас / Д. Д. Зербіно, М. М. Багрій, Я. Я. Боднар, В. А. Діброва. – Вінниця : Нова Книга, 2016. – 800с.

5. Інтерпритація біопсій в педіатрії / под. ред. А.Н. Хусейн; пер. с англ. под общей ред. Ф.Г. Забозлаева. – М.: Практическая медицина, 2019. – 448с.

6. Криволапов Ю.А. Макроскопическое исследование биопсийного и операционного материала. Руководство для врачей-патологоанатомов / под. ред. Ю.А. Криволапова. – М.: Практическая медицина, 2019. – 352с.



7. Методики морфологічних досліджень / М.М. Багрій, В.А. Діброва, О.Г. Пападинець, М.І. Грищук; за ред. М.М. Багрія, В.А. Діброви. – Вінниця: Нова Книга, 2016. – 328с.

8. Новоутворення щелепно-лищевої ділянки у дітей / П.І. Ткаченко, І.І. Старченко, С.О. Білоконь та ін. – Полтава: Тов. “АСМІ” – 2018. – 190с.

9. Основи патології за Роббінсом: у 2 томах. Том 1 / Віней Кумар, Абул К. Аббас, Джон К. Астер; переклад 10-го англ. видання. Видавництво: Всеукраїнське спеціалізоване видавництво “Медицина”. – Х П. – 2019. – 420с.

10. Основи патології за Роббінсом: у 2 томах. Том 2 / Віней Кумар, Абул К. Аббас, Джон К. Астер; переклад 10-го англ. видання. Київ. Видавництво: Всеукраїнське спеціалізоване видавництво “Медицина”. – 2020. – 523с.

11. Патоморфологія. Загальна патоморфологія: навчальний посібник / за ред. Я.Я. Бондара, В.Д. Волошина, А.М.Романюка. В.В.Гаргіна - Нова Книга, 2020. - 248 с.

12. Патоморфологія основних захворювань серцево-судинної системи: навчальний посібник / І.І. Старченко, Б.М. Филенко, Н.В. Ройко. – Полтава: “УМСА”. – 2019. – 150с.

13. Практикум з біопсійно-секційного курсу / І.І. Старченко, А.П. Гасюк, С.А. Проскурня [та ін.] – Полтава, 2016. – 160с.

14. Старченко І.І. Патоморфологія: збірник тестових завдань: навч. посіб. / І.І. Старченко, Н.В. Ройко, Б.М. Филенко, С.А. Проскурня; “УМСА”. – Полтава, 2020. – 239с.

15. Старченко І.І. Патоморфологія основних захворювань щелепно-лищевої ділянки : навч. посіб. / І.І. Старченко, Б.М. Филенко, В.В.Черняк ; “УМСА”. – Вінниця : Нова Книга, 2019. – 128с.

16. Старченко І.І. Спеціальна патоморфологія (базовий курс) для студентів медичних факультетів вищих медичних навчальних закладів III-IV рівнів акредитації / І.І. Старченко, Н.В. Ройко, Б.М. Филенко. – Полтава, 2017. – 174с.

17. Туффаха С. А. Муин Иммуногистохимия в диагностике опухолей / С. А. Туффаха Муин, С. Г. Гичка, Гуски Ганс. – "Книга плюс", 2018. – 336с.

18. Essentials of pathology : textbook / Ya. Vodnar, A. Romanyuk, V. Voloshyn, V. Gargine - Kharkiv, "Planeta-Print" Ltd, 2020.- 219p.

#### Additional:

1. Патоморфологія : нац. підруч. / В.Д. Марковський, В.О. Туманський, І.В. Сорокіна [та ін.]; за ред. В.Д. Марковського, В.О. Туманського. – К.: ВСВ «Медицина», 2015. – 936с.

2. Основні стоматологічні захворювання : навчальний посібник : у 2 ч. Ч. 1. Карієс, пульпіт, періодонтит, періостит, остеомієліт / А. М. Романюк, Є. В. Кузенко, О. І. Кузенко та ін. – Суми : Сумський державний університет, 2014. – 51 с.

3. Основні стоматологічні захворювання : навчальний посібник : у 2 ч. Ч. 2. Захворювання пародонта / А. М. Романюк, Є. В. Кузенко, О. І. Кузенко та ін. –

Суми : Сумський державний університет, 2014. – 52 с.

4. Одонтогенные кисты и опухоли (диагностика и лечение) / В.А. Семкин, И.И. Бабиченко. - М. : ГЭОТАР- Медиа, 2017. - 160 с.

5. Kumar V. Robbins Basic Pathology / Kumar V., Abbas A.K., Aster J.C. – Canada: Elsevier Health Sciences, 2013 – 910 p.

4. Odontogenic cysts and tumors (diagnosis and treatment) / VA Semkin , II Babichenko . - М.: GEOTAR- Media , 2017. - 160 p.

5. Kumar V. Robbins Basic Pathology / Kumar V., Abbas AK, Aster J.C. - Canada : Elsevier Health Sciences , 2013 - 910 p.

## **EVALUATION**

### **Criteria for assessing the current educational activities of the student**

When assessing the mastery of each topic, the student is graded on a 4-point (traditional) scale ("2", "3", "4", "5"). Components of traditional assessment:

#### **1. Survey - 50% of the assessment (2 assessment points).**

The survey is evaluated as follows:

0 points - the student does not know the answer to the question or refuses to answer.

1 point - the student answers the question, but makes significant mistakes or did not answer in full.

2 points - the student in full and unmistakably answered the question.

The student has the right to receive 1 additional point for active participation in the survey (additions to questions that other students could not answer), but in the amount of not more than 3 points for the survey.

**2. Control of practical skills and abilities** (analysis of macro- and microscopic changes of organs and systems in diseases) - 50% assessment (2 assessment points).

The control of practical skills is assessed as follows:

0 points - the student did not perform or incorrectly performed practical skills and abilities;

1 point - the student performed practical skills and abilities, but made significant mistakes;

2 points - the student correctly performed practical skills and abilities.

**3. Independent work of students** , which is provided by the topic of the lesson along with classroom work, is assessed during the current control of the topic in the relevant lesson. Assimilation of topics that are submitted only for independent work is checked during the final control .

At the end of the study subjects current progress is calculated as the average current score is the mean arithmetic all student assessments obtained by traditional scale rounded to two (2) decimal places (eg, 4.76).

### **Final control of mastering (general lesson, exam)**

The obligatory component of the curriculum is the final test control in the discipline, which includes 50 test questions (for 30 minutes), as an indicator of students' acquisition of knowledge. Compilation of the final test control takes place at the last practical lesson in the discipline at Center for Information Analysis and Internal Quality Control of Education (CIAIQCE) according to the schedule of the

educational department, approved by the rector of the university. The student must provide the correct answers by at least 90% (45 questions). A paper copy of the results of test control in the discipline signed by the head of the Center is sent to the department. The teacher files a statement in the Journal of attendance and student performance and puts assessments of current performance for the last lesson in the discipline, converting the results on the following scale:

- grade "excellent" - 50 correct answers;
- grade "good" - 47-49 correct answers;
- assessment of "satisfactory" - 45-46 correct answers;
- score "unsatisfactory" - 44 correct answers and less

A student who has not passed the final test control in the discipline is considered to have not completed the program in the discipline.

Only those students who do not have academic debts and have an average score of at least 3.00 for their current academic activity are allowed to take the final attestation (exam).

The student's exam is assessed on a 4-point (traditional) scale.

- the grade "excellent" is given to the student who systematically worked during academic year, showed during examination various and deep knowledge of a program material, is able to successfully carry out practical tasks on the description of macro- and micropreparations, has mastered the maintenance of the basic and additional literature, has understood interrelation of separate sections of the discipline, their importance for the future profession, showed creative abilities in understanding and using educational material, showed the ability to independently update and replenish knowledge; level of competence - high (creative);

- the grade "good" is given to the student who has shown full knowledge of educational program material, successfully carries out the practical tasks provided by the program on the description of macro- and micropreparations, has mastered the basic literature recommended by the program, has shown sufficient knowledge of discipline and is capable of their independent updating. and renewal in the course of further training and professional activities; level of competence - sufficient (constructive-variable);

- the grade "satisfactory" is given to the student who has shown knowledge of the basic educational program material in the volume necessary for the further training and the subsequent work on a profession, copes with performance of practical tasks on the description of macro- and micropreparations provided by the program, has made separate mistakes theoretical questions and in the performance of practical tasks, but has the necessary knowledge to overcome mistakes under the guidance of a research and teaching staff; level of competence - average (reproductive);

- the grade "unsatisfactory" is given to the student who did not show sufficient knowledge of the basic educational program material, made fundamental mistakes in performance of the practical tasks provided by the program on the description of macro- and micropreparations, cannot use knowledge at the further training without the help of the teacher. independent work; level of competence - low (receptive-productive).

To assess the discipline as a whole on a 4-point traditional (national) scale, the average score for the discipline is first calculated as the arithmetic mean of the two components:

- 1) the average current score as the arithmetic of all current estimates;
- 2) traditional grade for the exam.

The average score for the discipline is translated into the traditional grade from the discipline on a 4-point scale and is regarded as the ratio of this arithmetic mean to the percentage of mastering the required amount of knowledge in the discipline.

The obtained average score for the discipline allows you to convert to a score on a 200-point scale.

Thus, the student receives two grades: the first - on the traditional 4-point scale and the second - on a 200-point system.

The multi-point scale characterizes the actual success of each student in mastering the discipline. Conversion of the traditional grade from the discipline to 200-point is performed by the information and computer center of the university program "Contingent" according to the formula: the average score of the discipline x 40.

Thus we get:

National Assessment	Points
«5»	185-200
«4»	151-184
«3»	120-150

The ECTS rating scale evaluates the achievements of students in the discipline who study in one course of one specialty, in accordance with the points obtained by them, by ranking, namely:

ECTS score Statistical indicator

ECTS assessment	Statistical indicator
"A"	the best 10% of students
"B"	the next 25% of students
"C"	the next 30% of students
« D »	the next 25% of students
" E "	the last 10% of students

The ECTS scale establishes the student's belonging to the group of the best or worst among the reference group of classmates (faculty, specialty), ie his rating. When converting from a multi-point scale, as a rule, the limits of grades "A", "B", "C", "D", "E" do not coincide with the limits of grades "5", "4", "3" on the traditional scale.

Students who receive grades " Fx " and "F" ("2") are not included in the list of ranked students. Such students automatically receive a score of "E" after re-assembly. The grade " Fx " is given to students who scored the minimum number of points for the current educational activity, but who did not pass the final

control. Grade "F" is given to students who have attended all classes in the discipline, but did not score an average score (3.00) for current academic activities and are not admitted to the final control.

## **COURSE POLICY**

**Deadline and recompilation policy :** Timely completion of the tasks set by the teacher in a timely manner is mandatory. For late performance of the task during the current / final control of knowledge the student receives an unsatisfactory grade. Reassignment is carried out according to the approved schedule with the permission of the dean's office.

**Policy on academic integrity:** independent performance of all types of work, tasks, forms of control provided by the work program of this discipline; providing reliable information about the results of their own educational (scientific) activities, used research methods and sources of information; copying and plagiarism are not allowed.

**Attendance policy:** attendance at lectures and practical classes is mandatory, exceptions are possible only if an individual study schedule is approved for an individual student. Late classes are not allowed. The omission of classes, regardless of the reason for the omission, the student of higher education works for the teacher in accordance with the schedule of consultations and practice of missed classes.

**Mobile devices:** the use of a mobile phone, tablet or other mobile devices during the lesson is not allowed (except in cases provided by the curriculum and guidelines of the teacher).

**Behavior in the audience:** observance of silence among students at lectures, exclusion - students' questions to the teacher regarding the explanation of the material ; working discussion atmosphere in practical classes during the survey; adherence to the ethics of academic relations.