

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE  
ODESA NATIONAL MEDICAL UNIVERSITY**

**Department of INTERNAL MEDICINE No.2**

**APPROVED**  
*Vice-rector for scientific and pedagogical work*  
  
Eduard BURLACHKIVSKYI  
September, 01, 2024



**WORK PROGRAM  
“INTERNAL MEDICINE”  
FOR TRAINING OF SPECIALISTS AT THE SECOND (MASTER'S)  
LEVEL OF HIGHER EDUCATION**

**Speciality 222 «Medicine»  
Branch of knowledge 22«Health Care»  
Educational qualification «Master of Medicine»  
Professional qualification «Doctor»**



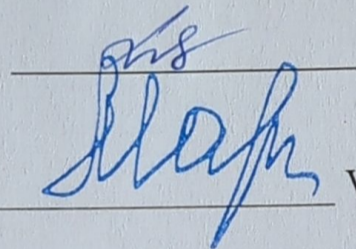
The work program is based on the educational and professional program "Medicine" for the training of specialists of the second (master's) level of higher education in the specialty 222 "Medicine" of the field of knowledge 22 "Health Care", approved by the Academic Council of ONMedU (Minutes No. 10 of June 27, 2024).

Developed by:

- Shtanko V.A. - PhD in Medicine, Associate Professor, Head of the Department of Internal Medicine No.2;
- Tykhonova S.A. - Doctor of Medicine, Professor of the Department of Internal Medicine No. 2;
- Khyzhnyak O.V. - PhD in Medicine, Associate Professor of the Department of Internal Medicine No. 2

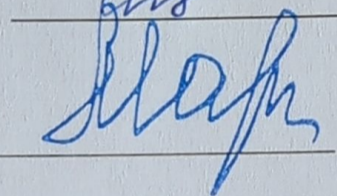
Work program approved at the meeting of the Department of Internal Medicine No. 2 Minutes №1 dated August 27, 2024.

A.i. Head of the Department



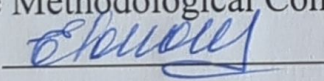
Olena KHYZHNYAK

Agreed with the guarantor of the EPP



Valeriia MARICHEREDA

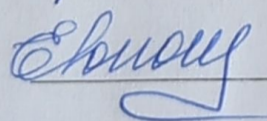
Approved by the Subject-Cycle Methodological Commission for Therapeutic Disciplines of ONMedU Minutes № 1 dated August 30, 2024.

Chairman of the Subject-Cycle Methodological Commission for Therapeutic Disciplines, Doctor of Medicine, Professor  Olena VOLOSHYNA

Revised and approved at the meeting of the Department of Internal Medicine #2  
with postgraduate training

Minutes № 1 dated "02" September 2024 p.

Head of the Department

 OLENA VOLOSHYNA

Revised and approved at the meeting of the Department \_\_\_\_\_

Minutes № \_\_\_\_\_ dated "\_\_\_\_" \_\_\_\_\_ 20\_\_ p.

Head of the Department \_\_\_\_\_

## 1. Description of the course

| Indicators         | Branch of knowledge, specialty, specialization, level of higher education   | Характеристика навчальної дисципліни |
|--------------------|---|--------------------------------------|
| Total amount:      | Branch of knowledge<br>22«Health Care»<br><br>Speciality 222 «Medicine»<br><br>Level of higher education<br>Second «Master of Medicine» | <i>Full time form study</i>          |
| Credits: 4,5       |   | <i>Mandatory discipline</i>          |
| Hours: 135         |   | <i>Study year: 5</i>                 |
| Content modules: 4 |   | <i>Semesters IX - X</i>              |
|                    |   | <i>Lectures (10 h.)</i>              |
|                    |   | <i>Seminars (0 h.)</i>               |
|                    |   | <i>Practical's (80 h.)</i>           |
|                    |   | <i>Laboratory (0 h.)</i>             |
|                    |   | <i>Independent Work (45 h.)</i>      |
|                    | <i>incl. individual task (0 h.)</i>   |                                      |
|                    | <i>Form of final control – differential credit</i>  |                                      |

## 2. The aim and objectives of the discipline, competencies, program learning outcomes.

**The aim:** mastering by the applicant of knowledge and the formation of elements of professional competencies in the field of internal medicine, in particular: rheumatology, nephrology, pulmonology, gastroenterology, and diseases of internal organs during war and peacetime disasters; improvement of skills and competencies acquired in the study of previous disciplines.

### **Objectives:**

1. Formation of skills and abilities: diagnostics, differential diagnostics and principles of management of adult patients with the most common rheumatological, nephrological, pulmonological and gastroenterological diseases, and with pathology of internal organs that occurs during war and peacetime disasters.

2. Improving the skills of substantiating the clinical diagnosis, composing a plan of laboratory and instrumental studies in the management of adult patients with the most common rheumatological, nephrological, pulmonological and gastroenterological diseases, and with pathology of internal organs that occurs during war and peacetime disasters.

3. Mastering the ability to determine the tactics of emergency care, treatment and prevention in adult patients with the most common rheumatological, nephrological, pulmonological and gastroenterological diseases.

4. Mastering the ability to determine the tactics and scope of emergency care, treatment and prevention in adult patients with pathology of internal organs that occurs during war and peacetime disasters, including at the stages of medical care

The process of studying the discipline is aimed at forming elements of the following competencies:

### **Generals (GC):**

GC1. Ability to abstract thinking, analysis and synthesis.

GC 3. Ability to apply knowledge in practical situations.

GC 4. Knowledge and understanding of the subject area and understanding of professional activity.

GC 5. Ability to adapt and act in a new situation.

- GC 6. Ability to make reasonable decisions.
- GC 7. Ability to work in a team.
- GC 8. Ability to interpersonal interaction.
- GC 10. Ability to implement information and communication technologies
- GC 11. Ability to search, process and analyze information from various sources.

**Special ( professional, subject ) competencies (SC):**

- SC1. Ability to collect medical information about the patient and analyze clinical data.
- SC 2. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
- SC 3. Ability to establish a preliminary and clinical diagnosis of the disease.
- SC 4. Ability to determine the necessary mode of work and rest in the treatment and prevention of diseases.
- SC 5. Ability to determine the nature of nutrition in the treatment and prevention of diseases.
- SC 6. Ability to determine the principles and nature of treatment and prevention of diseases.
- SC 7. Ability to diagnose emergency conditions.
- SC 8. Ability to determine tactics and provide emergency medical care.
- SC 9. Ability to carry out medical and evacuation measures.
- SC 10. Ability to perform medical manipulations.
- SC 11. Ability to solve medical problems in new or unfamiliar environments with incomplete or limited information, taking into account aspects of social and ethical responsibility, including early intervention.
- SC 13. Ability to carry out sanitary and hygienic and preventive measures.
- SC 14. Ability to plan and conduct preventive and anti-epidemic measures against infectious diseases.
- SC 15. Ability to conduct an examination of working capacity.
- SC 16. Ability to fill medical documentation, including electronic forms.
- SC 18. Ability to analyze the activities of a doctor, unit, health care institution, ensure the quality of medical care and improve the efficiency of medical resources.
- SC 21. Ability to clearly and unambiguously communicate own knowledge, conclusions and arguments on health problems and related issues to specialists and non-specialists, including students.
- SC 24. Adherence to ethical principles when working with patients and laboratory animals.
- SC 25. To observe professional and academic integrity, to be responsible for the reliability of the scientific results obtained.
- SC 26. Ability to determine the management tactics of persons subject to dispensary supervision.

**Program learning outcomes (PLO):**

- PLO 1. Having a thorough knowledge of the structure of professional activity. Being able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.
- PLO 2. Understanding and knowledge of basic and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.
- PLO 3. Specialized conceptual knowledge that includes scientific achievements in the field of health care and is the basis for research, critical thinking in the field of medicine and related interdisciplinary problems, including the system of early intervention.
- PLO 4. Identifying leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).



PLO 5. Collecting complaints, history of life and diseases, assessing the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluation of the information regarding the diagnosis (according to list 4), taking into account the age of the patient.

PLO 6. Establishing the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis, observing the relevant ethical and legal norms, under the control of the managing physician in the conditions of the health care institution (according to the list 2).

PLO 7. Assigning and analyzing additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).

PLO 8. Determination of the main clinical syndrome or symptom that determines the severity of the victim's/victim's condition (according to list 3) by making a reasoned decision about the person's condition under any circumstances (in the conditions of a health care facility, outside its borders), including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.

PLO 9. Determination of the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the patient's age, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation, including in field conditions, based on a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to justify personalized recommendations under the control of the head physician in the conditions of a medical institution.

PLO 10. Determination of the necessary mode of work, rest and nutrition based on the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.

PLO 14. Determination of tactics and providing emergency medical care in emergencies (according to list 3) in limited time conditions according to existing clinical protocols and standards of treatment.

PLO 17. Performing medical manipulations (according to list 5) in the conditions of a medical institution, at home or work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.

PLO 18. Determination of the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of a person's professional activity, etc. Maintain medical documentation regarding the patient and the contingent of the population based on regulatory documents.

PLO 21. Searching for the necessary information in the professional literature and databases of other sources, analysing, evaluating and application of this information.

PLO 23. To assess the impact of the environment on human health to assess the state of morbidity of the population.

**As a result of studying the discipline the applicant for higher education must:**

**Know:** etiology, pathogenesis, typical clinical manifestations, diagnosis, principles of differential diagnosis, principles and modern standards of treatment and prevention in adult patients with the most common rheumatological, nephrological, pulmonological and gastroenterological diseases, and with diseases and pathology of internal organs that occur during war and peacetime disasters.

**Be able to:**

- To communicate with the patient and his relatives (guardians), to collect complaints, anamnesis

of life and diseases, to determine risk factors for the development and progression of the most common rheumatological, nephrological, pulmonological and gastroenterological diseases, as well as diseases of internal organs that occur during war and peacetime disasters.

- To assess the general condition of the patient (physical and psychomotor), to provide preventive recommendations for healthy nutrition, optimal level of physical activity, self-control and self-care to adult patients with the most common rheumatological, nephrological, pulmonological and gastroenterological diseases, as well as diseases of internal organs that occur during war and peacetime disasters.
- Conduct clinical examination of adult patients in accordance with modern methods and standards.
- Analyze and interpret the results of laboratory, functional and instrumental studies.
- Develop a program of differential diagnosis and justify the clinical diagnosis.
- Determine the tactics and provide emergency medical care for the most common rheumatological, nephrological, pulmonary and gastroenterological diseases, as well as diseases of internal organs that occur during wartime and peacetime disasters, including at the stages of medical evacuation.
- Determine the nature and principles of treatment of adult patients based on a preliminary clinical diagnosis, adhering to the relevant ethical and legal standards, by making an informed decision according to existing algorithms and standards.
- Perform medical manipulations (according to list 5) for common diseases in adults.
- Maintain medical records for the most common rheumatological, nephrological, pulmonological and gastroenterological diseases, as well as diseases of internal organs that occur during wartime and peacetime disasters, including at the stages of medical evacuation.

### **3. Content of the discipline**

#### **Content module 1.**

#### **Fundamentals of diagnosis, treatment and prevention of major diseases of the musculoskeletal system and connective tissue.**

**Topic 1. Rheumatic fever.** Acute rheumatic fever and chronic rheumatic heart disease. Determination. A role of streptococcus infection and immunological reactivity in development of acute rheumatic fever. Classification. Clinical picture (carditis, polyarthritis, chorea, dermatitis of skin). Value of laboratory and instrumental methods of research. Criteria of diagnostics. Differential diagnosis. Complication. Treatment from the account of degree of activity. Primary and secondary prophylaxis. Prognosis and working capacity.

**Topic 2. Rheumatoid arthritis.** Determination. Etiologic factors, pathogenesis. A role of violations of immune status in development of disease. Classification and nomenclature. A clinical picture is taking into account activity of pathological process, stage of disease, system displays. A value of laboratory and instrumental methods for diagnostics of disease, his stage and activity. Criteria of diagnostics, value of research of synovial liquid. Differential diagnosis. Complication. Strategy of treatment. Base therapy. Tactic of treatment by steroids and NADs. Prophylaxis. Prognosis and working capacity.

**Topic 3. Systemic diseases of connective tissue** (systemic lupus erythematosus, systemic scleroderma, dermatomyositis). Determination. Definition. Etiological factors, pathogenesis. Classification. Clinical picture depending on the lesion of organs and systems. Diagnostic criteria, differential diagnosis. Complications. Principles of treatment. Prevention of the disease. Prognosis and working capacity.

**Topic 4. Systemic vasculitis.** Hemorrhagic vasculitis. Polyarteriitis nodosa. Determination. Etiology, pathogenesis. Clinical displays, criteria of diagnostics. Differential diagnosis. Treatment. Prophylaxis. Prognosis and working capacity.

**Topic 5. Osteoarthritis.** Determination. Etiology, pathogenesis. Classification. A clinical picture depending on overwhelming localization of defeats. Diagnostics. Differential diagnosis. Pharmacological and nonpharmacological treatment. Primary and secondary prophylaxis. Prognosis and working capacity.

**Topic 6. Ankylosing spondylitis. Reactive arthritis.** Definition. Etiology, pathogenesis. Classification. Clinical picture. Clinical manifestations of reactive arthritis of various etiologies. Reiter's syndrome. The value of instrumental and laboratory methods. Criteria for diagnosis. Differential diagnosis. Medical and non-medical treatment. Prevention of the disease. Prognosis and working capacity.

**Topic 7. Gout.** Determination. Etiology, pathogenesis. Classification. Features of joint syndrome and defeat of internal organs. Criteria of diagnosis. Differential diagnosis. Complication. Principles of the differentiated treatment. Prophylaxis. Prognosis and working capacity.

### **Content module 2.**

#### **Fundamentals of diagnosis, treatment and prevention of major diseases of the urinary system.**

**Topic 8. Glomerulonephritis. Renal amyloidosis.** Determination. Etiology, role of streptococcus infection and immunological violations in development of illness. Pathogenesis of basic clinical syndromes. Classification. Clinical displays and diagnostics of separate forms. Differential diagnosis. Complication (eclampsia, acute kidney and chronic kidney insufficiency, ect.). Treatment is taking into account a morphological variant and clinical course. Primary and secondary prophylaxis. Prognosis and working capacity.

Determination, etiology, pathogenesis of renal amyloidosis. Classification. Clinical displays. Criteria of diagnostics. Differential diagnosis. Complication. Treatment. Primary and secondary prophylaxis. Prognosis and working capacity.

**Topic 9. Pyelonephritis, tubulointerstitial nephritis.** Determination. A role of infection is at the inflammatory diseases of kidney and urinoexcretory ways. Primary and second pyelonephritis. Clinical displays. Instrumental and laboratory methods of diagnostics. Differential diagnosis. Complication. Treatment. Primary and secondary prophylaxis. Prognosis and capacity.

Determination, etiology, pathogenesis of tubulointerstitial nephritis. Clinic. Criteria of diagnostics and differential diagnosis. Complication. Treatment. The first aid at acute kidney insufficiency. Primary and secondary prophylaxis. Prognosis and working capacity.

**Topic 10. Chronic kidney disease.** Determination. Etiologic factors. Pathogenesis of defeats of organs and systems, its clinical displays. Concept "chronic kidney disease". Classification. A clinic and changes of laboratory data depending on the stage. Differential diagnosis. Complication. Treatment on the different stages. Renal replacement therapy: hemodialyse, renal transplantation. Indication and contra-indication to renal replacement therapy. Complication. Primary and secondary prophylaxis. Prognosis and working capacity.

**Topic 11. Acute kidney injury.** Determination. Etiologic factors. Pathogenesis of defeats of organs and systems, its clinical features. Classification. Clinic and changes in laboratory parameters depending on the stage. Classification. Clinic and changes in laboratory parameters depending on the stage. Algorithm of emergency care. Primary and secondary prophylaxis.

### **Content module 3.**

#### **Fundamentals of diagnosis, treatment and prevention of major diseases of the respiratory system.**

**Topic 12. Chronic obstructive pulmonary disease.** Definition. The value of smoking, environmental, occupational factors and infection in the development of chronic obstructive

pulmonary disease. Classification. Clinical manifestations. Differential diagnosis. Complications. Treatment. Primary and secondary prevention. Prognosis and working capacity.

**Topic 13. Bronchial asthma.** Definition. Etiology, features of pathogenesis. Classification. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis. Complications. Treatment. Criteria for control. Emergency care during an attack of bronchial asthma. Primary and secondary prevention. Prognosis and working capacity. Definition. Etiology, features of pathogenesis. Classification. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis. Complications. Treatment. Criteria for control. Emergency care during an attack of bronchial asthma. Primary and secondary prevention. Prognosis and working capacity.

**Topic 14. Pneumonias.** Definition. Etiology. Classification. Clinical manifestations and features of the course depending on the pathogen. Data of laboratory and instrumental research methods. Differential diagnosis. Complications (acute respiratory distress syndrome, lung tissue destruction, acute respiratory failure and others). Differentiated treatment. Primary and secondary prevention. Prognosis and working capacity. Lesion of respiratory organs at HIV-infection, COVID-19.

**Topic 15. Plevritis.** Definition. Etiologic factors. Classification. Clinic, changes of instrumental and laboratory data and their feature, depending on a form (dry, exsudative) and etiology. Differential diagnosis. Complication. Indication to pleural puncture and draining of pleural cavity. Treatment. Primary and secondary prophylaxis. Prognosis and working capacity.

**Topic 16. Infectious destructive disease of the bronchopulmonary system.** Definition. Factors that contribute to the development of bronchiectasis, abscess and gangrene of the lungs. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis. Complications of the disease. Treatment. Indications for surgical treatment. Primary and secondary prevention. Prognosis and working capacity.

**Topic 17. Pulmonary insufficiency.** Definition. Classification. Causes of occurrence. Features of the clinical course of various forms. Diagnosis, study of the function of external respiration, arterial and venous blood gases, indicators of the acid-base state of the blood. Differential diagnosis. Treatment tactics. Primary and secondary prevention. Prognosis and working capacity.

### **Content module 3.**

#### **Fundamentals of diagnosis, treatment and prevention of major diseases of the digestive system.**

**Topic 18. Gastroesophageal reflux disease.** Definition. Etiology, pathogenesis. A role of gastroesophageal reflux in development of esophagitis and Barrett's esophagus. Classification. Erosive and non-erosive GERD. Clinic depending on a variant and stage. Criteria of diagnostics, differential diagnostics. Complication. Differentiated therapy. Primary and secondary prophylaxis.

**Topic 19. Gastric dyspepsia and chronic gastritis.** Definition. Etiology, pathogenesis. Role of H.pylori in the origin of gastro-duodenal pathology. Classification. Uninspected and functional dyspepsia. Criteria of diagnosis. A differential diagnosis. The modern going for treatment of functional dyspepsia. Primary and secondary prophylaxis. Prognosis and capacity.

Definition, etiology and pathogenesis of chronic gastritis. Role of H.pylori in the origin of chronic gastritis. Classification. Nonatrophic and atrophic gastritis. A value of endoscopic (with morphology) and X-ray investigation for establishment of diagnosis. The modern going for treatment of different types of chronic gastritis. Primary and secondary prophylaxis. Prognosis and capacity.

**Topic 20. Ulcer disease and other peptic ulcers of stomach and duodenum.** Definition. Role of H.pylori, acido-peptic factor and drugs in the etiology of peptic ulcers and their relapses. Features of course of Hp-positive and Hp-negative ulcers. Complication (perforation, penetration, bleeding, violation of motile function). Value of instrumental and



laboratory methods of diagnostics. Methods of diagnostics of Hp-infection. Eradication therapy. Control of eradication. Medicinal treatment of Hp-negative ulcers. Indication to surgical treatment. Primary and secondary prophylaxis. Prognosis and capacity.

**Topic 21. Disease of small bowel : coeliac disease and other enteropathy.** Definition. Etiology, pathogenesis. Role of unbalance of components of meal, enzymopathy and immune factors. Sprues and maldigestion. Criteria of diagnostics, differential diagnostics. Complication. Differentiated therapy. Primary and secondary prophylaxis. Prognosis and capacity.

**Topic 22. Chronic colon diseases. Irritated bowel syndrome,** determination, Roman criteria of diagnostics. Etiology and pathogenesis. Classification. Clinic of different variants. Diagnostic criteria and criteria of exception of diagnosis. Differential diagnostics. Treatment of different forms. Primary and secondary prophylaxis. Prognosis and capacity. Nonspecific colitis (ulcer colitis colitis and Cron's disease): determination, etiology and pathogenesis. Classification. Features of clinical course depending on the degree of activity, gravity and phase of course. Criteria of diagnostics. Differential diagnosis. Complication and diseases, associated with an ulcerous colitis (sclerosis cholangitis, spondylitis, arthritis, dermatosis).

**Topic 23. Gallstone disease, chronic cholecystitis and functional biliar dyskinesias.** Definition. Etiology, pathogenesis. Value of infection, dysmotilities and dyscholia in development of chronic noncalculous cholecystitis, cholangitis and gallstone disease. Features of clinical course. A role of instrumental methods in diagnostic. Differential diagnosis. Complication. The differentiated treatment is depending on a clinical variant and presence of complications. Indication to surgical treatment. Primary and secondary prophylaxis. Prognosis and capacity.

**Topic 24. Chronic hepatitis.** Determination. Classification. Role of virus, drugs, violations of immune system and alcohol. Methods of diagnostics of viral infection. Autoimmune hepatitis, chronic viral, drug hepatitis. Alcoholic disease of liver. Basic clinic-biochemical syndromes. Features of clinical course and diagnostics of separate forms. Value of morphological, biochemical and radioisotope methods. Differential diagnosis. Complication. Features of treatment of different forms. Primary and secondary prophylaxis. Prognosis and capacity.

**Topic 25. Cirrhosis of liver.** Definition. Value of viral infection, nutritive factors, alcohol, toxic matters and immunological violations. Classification. Features of clinical displays and diagnostics of different variants. Differential diagnosis. Hepatic insufficiency and other complications. Differentiated therapy. Urgent therapy of complications. Primary and secondary prophylaxis. Prognosis and capacity.

**Topic 26. Chronic pancreatitis.** Definition. Value of different etiologic factors. Classification. Features of clinical course, diagnostics and differential diagnostics depending on a form and localization of pathological process. Complication. Research methods in diagnostics of pancreatitis. Differentiated treatment. Primary and secondary prophylaxis. Prognosis and capacity.

#### 4. Structure of the discipline

| Topic  | Hours     |          |          |           |            |           |
|--|-----------|----------|----------|-----------|------------|-----------|
|  | Total     |          |          |           |            |           |
|  |           | Lecture  | Seminar  | Practical | Laboratory | IW        |
| <b>Content module 1.</b>   |           |          |          |           |            |           |
| <b>Fundamentals of diagnosis, treatment and prevention of diseases of the musculoskeletal system and connective tissue</b> |           |          |          |           |            |           |
| Topic 1. Rheumatic fever   | 6         | 0        | 0        | 4         | 0          | 2         |
| Topic 2. Rheumatoid arthritis  | 6         | 0        | 0        | 4         | 0          | 2         |
| Topic 3. Systemic diseases of connective tissue  | 8         | 2        | 0        | 4         | 0          | 2         |
| Topic 4. Systemic vasculitis   | 6         | 0        | 0        | 4         | 0          | 2         |
| Topic 5. Osteoarthritis  | 4         | 0        | 0        | 2         | 0          | 2         |
| Topic 6. Ankylosing spondylitis. Reactive arthritis.   | 6         | 0        | 0        | 4         | 0          | 2         |
| Topic 7. Gout/   | 3         | 0        | 0        | 2         | 0          | 1         |
| Preparing and writing MH   | 1         | 0        | 0        | 0         | 0          | 1         |
| <i>Total for content module 1</i>  | <b>40</b> | <b>2</b> | <b>0</b> | <b>24</b> | <b>0</b>   | <b>14</b> |
| <b>Content module 2.</b>   |           |          |          |           |            |           |
| <b>Fundamentals of diagnosis, treatment and prevention of diseases of the urinary system</b>                               |           |          |          |           |            |           |
| Topic 8. Glomerulonephritis. Renal amyloidosis.  | 6         | 0        | 0        | 4         | 0          | 2         |
| Topic 9. Pyelonephritis, tubulointerstitial nephritis.   | 6         | 0        | 0        | 4         | 0          | 2         |
| Topic 10. Chronic kidney disease   | 8         | 2        | 0        | 4         | 0          | 2         |
| Topic 11. Acute kidney injury  | 3         | 0        | 0        | 2         | 0          | 1         |
| Preparing and writing MH   | 1         | 0        | 0        | 0         | 0          | 1         |
| <i>Total for content module 2</i>  | <b>24</b> | <b>2</b> | <b>0</b> | <b>14</b> | <b>0</b>   | <b>8</b>  |
| <b>Content module 3.</b>   |           |          |          |           |            |           |
| <b>Fundamentals of diagnosis, treatment and prevention of diseases of the respiratory system</b>                           |           |          |          |           |            |           |
| Topic 12. Chronic obstructive pulmonary disease  | 4         | 1        | 0        | 2         | 0          | 1         |
| Topic 13. Bronchial asthma.  | 4         | 1        | 0        | 2         | 0          | 1         |
| Topic 14. Pneumonias.  | 4         | 0        | 0        | 2         | 0          | 2         |

|  |            |           |          |           |          |           |
|--|------------|-----------|----------|-----------|----------|-----------|
| Topic 15. Plevritis and pleural effusion.  | 4          | 0         | 0        | 2         | 0        | 2         |
| Topic 16. Infectious destructive disease of the bronchopulmonary system                        | 4          | 0         | 0        | 2         | 0        | 2         |
| Topic 17. Pulmonary insufficiency.   | 3          | 0         | 0        | 2         | 0        | 1         |
| Preparing and writing MH   | 1          | 0         | 0        | 0         | 0        | 1         |
| <i>Total for content module 3</i>  | <b>24</b>  | <b>2</b>  | <b>0</b> | <b>12</b> | <b>0</b> | <b>10</b> |
| <b>Content module 4.</b>   |            |           |          |           |          |           |
| <b>Fundamentals of diagnosis, treatment and prevention of diseases of the digestive system</b> |            |           |          |           |          |           |
| Topic 18. Gastroesophageal reflux disease.   | 4          | 0         | 0        | 2         | 0        | 2         |
| Topic 19. Gastric dyspepsia and chronic gastritis.   | 4          | 1         | 0        | 2         | 0        | 1         |
| Topic 20. Ulcer disease and other peptic ulcers of stomach and duodenum                        | 4          | 1         | 0        | 2         | 0        | 1         |
| Topic 21. Disease of small bowel : coeliac disease and other enteropathy.                      | 3          | 0         | 0        | 2         | 0        | 1         |
| Topic 22. Chronic colon diseases: IBS and nonspecific colitis.                                 | 5          | 0         | 0        | 4         | 0        | 1         |
| Topic 23. Gallstone disease, chronic cholecystitis and functional biliar dyskinesies.          | 6          | 0         | 0        | 4         | 0        | 2         |
| Topic 24. Chronic hepatitis  | 7          | 1         | 0        | 4         | 0        | 2         |
| Topic 25. Cirrhosis of liver.  | 6          | 1         | 0        | 4         | 0        | 1         |
| Topic 26. Chronic pancreatitis.  | 3          | 0         | 0        | 2         | 0        | 1         |
| Preparing and writing MH   | 1          | 0         | 0        | 0         | 0        | 1         |
| <i>Total for content module 4</i>  | <b>43</b>  | <b>4</b>  | <b>0</b> | <b>26</b> | <b>0</b> | <b>13</b> |
| Differential credit  | <b>4</b>   | <b>0</b>  | <b>0</b> | <b>4</b>  | <b>0</b> | <b>0</b>  |
| <b>TOTAL</b>   | <b>135</b> | <b>10</b> | <b>0</b> | <b>80</b> | <b>0</b> | <b>45</b> |



## 5. Topics of lectures / seminars / practical / laboratory classes

### 5.1. Topics of lectures

| №  | Topic   | КІЛ-ТЬ<br>ГОДИН |
|--|---|-----------------|
| <b>Content module 1. Fundamentals of diagnosis, treatment and prevention of diseases of the musculoskeletal system and connective tissue</b> |   |                 |
| 1.   | Topic 3. Systemic diseases of connective tissue<br>Lecture 1.   | 2               |
| <b>Content module 2. Fundamentals of diagnosis, treatment and prevention of diseases of the urinary system</b>                               |   |                 |
| 2.   | Topic 10. Chronic kidney disease<br>Lecture 2.  | 2               |
| <b>Content module 3. Fundamentals of diagnosis, treatment and prevention of diseases of the respiratory system</b>                           |   |                 |
| 3.   | Topics 12_13. Chronic obstructive pulmonary disease. Bronchial asthma.<br>Lecture 3.  | 2               |
| <b>Content module 4. Fundamentals of diagnosis, treatment and prevention of diseases of the digestive system</b>                             |   |                 |
| 4.   | Topics 19-20. Gastric dyspepsia and chronic gastritis. Ulcer disease and other peptic ulcers of stomach and duodenum.<br>Lecture 4. | 2               |
| 5.   | Topics 24-25. Chronic hepatitis. Cirrhosis of liver.<br>Lecture 5.  | 2               |
|  | <b>Total</b>  | <b>10</b>       |

### 5.2. Topics of seminars

Seminars are not provided

### 5.3. Topics of practical lessons

| №   | Topic  | Hours |
|-----|--|-------|
| 1.  | Topic 1. Practical lesson 1. Rheumatic fever.                        | 2     |
| 2.  | Topic 1. Practical lesson 1. Rheumatic fever.                        | 2     |
| 3.  | Topic 2. Practical lesson 3. Rheumatoid arthritis.                   | 2     |
| 4.  | Topic 2. Practical lesson 4. Rheumatoid arthritis.                   | 2     |
| 5.  | Topic 3. Practical lesson 5. Systemic diseases of connective tissue. | 2     |
| 6.  | Topic 3. Practical lesson 6. Systemic diseases of connective tissue. | 2     |
| 7.  | Topic 4. Practical lesson 7. Systemic vasculitis.                    | 2     |
| 8.  | Topic 4. Practical lesson 8. Systemic vasculitis.                    | 2     |
| 9.  | Topic 5. Practical lesson 9. Osteoarthritis.                         | 2     |
| 10. | Topic 6. Practical lesson 10. Ankylosing spondylitis.                | 2     |
| 11. | Topic 6. Practical lesson 11. Reactive arthritis.                    | 2     |
| 12. | Topic 7. Practical lesson 12. Gout.                                  | 2     |
| 13. | Topic 8. Practical lesson 13. Glomerulonephritis.                    | 2     |
| 14. | Topic 8. Practical lesson 14. Renal amyloidosis.                     | 2     |
| 15. | Topic 9. Practical lesson 15. Pyelonephritis.                        | 2     |
| 16. | Topic 9. Practical lesson 16. Tubulointerstitial nephritis.          | 2     |
| 17. | Topic 10. Practical lesson 17. Chronic kidney disease.               | 2     |
| 18. | Topic 10. Practical lesson 18. Chronic kidney disease.               | 2     |

|     |  |           |
|-----|--|-----------|
| 19. | Topic 11. Practical lesson 19. Acute kidney injury.  | 2         |
| 20. | Topic 12. Practical lesson 20. Chronic obstructive pulmonary disease.                                      | 2         |
| 21. | Topic 13. Practical lesson 21. Bronchial asthma.   | 2         |
| 22. | Topic 14. Practical lesson 22. Pneumonias.   | 2         |
| 23. | Topic 15. Practical lesson 23. Plevritis and pleural effusion.   | 2         |
| 24. | Topic 16. Practical lesson 24. Infectious destructive diseases of bronchopulmonary system.                 | 2         |
| 25. | Topic 17. Practical lesson 25. Pulmonary insufficiency.  | 2         |
| 26. | Topic 18. Practical lesson 26. Gastroesophageal reflux disease.  | 2         |
| 27. | Topic 19. Practical lesson 27. Gastric dyspepsia and chronic gastritis.                                    | 2         |
| 28. | Topic 20. Practical lesson 28. Ulcer disease and other peptic ulcers of stomach and duodenum.              | 2         |
| 29. | Topic 21. Practical lesson 29. Diseases of small bowel: coeliac disease and other enteropathy.             | 2         |
| 30. | Topic 22. Practical lesson 30. Chronic colon diseases: IBS and nonspecific colitis.                        | 2         |
| 31. | Topic 22. Practical lesson 31. Chronic colon diseases: IBS and nonspecific colitis.                        | 2         |
| 32. | Topic 23. Practical lesson 32. Gallstone disease, chronic cholecystitis and functional biliar dyskinesias. | 2         |
| 33. | Topic 23. Practical lesson 33. Gallstone disease, chronic cholecystitis and functional biliar dyskinesias. | 2         |
| 34. | Topic 24. Practical lesson 34. Chronic hepatitis.  | 2         |
| 35. | Topic 24. Practical lesson 35. Chronic hepatitis.  | 2         |
| 36. | Topic 25. Practical lesson 36. Cirrhosis of liver.   | 2         |
| 37. | Topic 25. Practical lesson 37. Cirrhosis of liver.   | 2         |
| 38. | Topic 26. Practical lesson 38. Chronic pancreatitis.   | 2         |
| 39. | <i>Differential credit</i>   | 4         |
|     | <b>Total</b>   | <b>80</b> |

#### 5.4. Topics of laboratory classes:

Laboratory classes are not provided.

### 6. Independent work of a higher education applicant

| №  | Topic title / types of tasks   | Hours |
|----|--|-------|
| 1. | Topic 1. Preparation to PL<br>Mastering the skills of interpreting biochemical blood tests (acute phase indicators, total protein and protein fractions)<br>Mastering the skills and interpretation of auscultation data in acquired rheumatic heart disease<br>Familiarization with the procedure and interpretation of echocardiographic examination data in rheumatic heart disease | 2     |
| 2. | Topic 2. Preparation to PL<br>Mastering the skills of interpreting the data of immunological blood tests (RF, anti-CCP)<br>Mastering the skills of interpreting radiological examination of joints on the topic  | 2     |
| 3. | Topic 3. Preparation to PL<br>Mastering the skills of interpreting biochemical blood tests (CK)<br>Mastering the skills of interpreting the data of immunological blood tests  | 2     |

|     |   |   |
|-----|---|---|
|     | (SCL-70, (ANA, dsDNA, Sm-antigen)<br>Familiarization with the procedure and interpretation of echocardiographic examination data in inflammatory pericardial disease (polyserositis syndrome in SLE)  |   |
| 4.  | Topic 4. Preparation to PL<br>Mastering the skills of interpreting biochemical blood tests (acute phase indices, total protein and protein fractions)<br>Mastering the skills of palpation of peripheral arteries   | 2 |
| 5.  | Topic 5. Preparation to PL<br>Mastering the skills of interpreting X-ray examination of joints on the topic (see list 3, bank of X-rays of patients with joint syndrome)  | 2 |
| 6.  | Topic 6. Preparation to PL<br>Mastering the skills of interpreting serological blood tests<br>Mastering the skills of interpreting radiological examination of joints, sacroiliac joints on the topic   | 2 |
| 7.  | Topic 7. Preparation to PL<br>Mastering the skills of interpreting biochemical blood tests (uric acid)<br>Mastering the skills of interpreting radiological examination of joints on the topic<br>Preparation and writing of medical history  | 2 |
| 8.  | Topic 8. Preparation to PL<br>Mastering the skills of interpreting the data of laboratory methods tests (general urine analysis, daily proteinuria, complete blood count, total protein and protein fractions, creatinine, glomerular filtration rate, cholesterol, blood electrolytes)   | 2 |
| 9.  | Topic 9. Preparation to PL<br>Mastering the skills of interpreting the data of laboratory methods research (general urine analysis, urine analysis by Nechiporenko and Zimnitsky, microbiological examination of urine, creatinine, glomerular filtration rate, uric acid)<br>Mastering the skills of interpretation of kidney ultrasound data                        | 2 |
| 10. | Topic 10. Preparation to PL<br>Mastering the skills of interpreting the data of laboratory methods tests (general urine analysis, general blood test, total protein and protein fractions, creatinine, glomerular filtration rate, blood electrolytes).   | 2 |
| 11. | Topic 11. Preparation to PL<br>Mastering the skills of interpreting the data of laboratory methods research (general urine analysis, general blood test, total protein and protein fractions, creatinine, glomerular filtration rate, blood electrolytes).<br>Preparation and writing of medical history  | 2 |
| 12. | Topics 12-13. Preparation to PL<br>Mastering the skills and interpretation of auscultation data in bronchoobstructive syndrome.<br>Mastering the skills of interpreting the spirometry data.  | 2 |
| 13. | Topic 14. Preparation to PL<br>Mastering the skills of interpretation of sputum analysis (microscopic, bacteriological, bacterioscopic examination), determination of sensitivity to antibiotics.<br>Mastering the skills and interpretation of auscultation data in lung lesions.<br>Mastering the skills of interpretation of chest radiography in two projections. | 2 |
| 14. | Topic 15. Preparation to PL   | 2 |



|     |   |   |
|-----|---|---|
|     | <p>Mastering the skills of interpreting the data of chest X-ray on the topic.</p> <p>Mastering the skills and interpretation of auscultation data in pleural lesions.</p> <p>Mastering the skills of interpreting the analysis of pleural fluid (microscopic, bacteriological and bacterioscopic examination).</p>  |   |
| 15. | <p>Topic 16. Preparation to PL</p> <p>Mastering the skills of interpreting the data of chest X-ray on the topic.</p> <p>Mastering the skills of interpreting a complete blood count, sputum analysis (bacteriological, microscopic, determination of sensitivity to antibiotics).</p>   | 2 |
| 16. | <p>Topic 17. Preparation to PL</p> <p>Mastering the skills of interpreting the composition of arterial blood gases.</p> <p>Mastering the skills and interpretation of auscultation data at PE.</p> <p>Preparation and writing of medical history</p>  | 2 |
| 17. | <p>Topic 18. Preparation to PL</p> <p>Mastering the skills of interpreting the data of 24-hour esophageal pH monitoring on the topic.</p> <p>Mastering the skills of interpreting the endoscopic picture of the esophagus.</p>  | 2 |
| 18. | <p>Topics 19-20. Preparation to PL</p> <p>Mastering the skills of interpreting the results of breath tests with a stable isotope (<sup>13</sup>C-urea).</p> <p>Mastering the skills of interpreting the study of acid formation (intra-gastric topographic express pH-metry, daily pH monitoring).</p> <p>Mastering the skills of interpreting the results of esophagogastroduodenoscopy with biopsy on the topic.</p> <p>Mastering the skills of interpreting the endoscopic picture of the stomach and duodenum.</p>  | 2 |
| 19. | <p>Topics 21-22. Preparation to PL</p> <p>Mastering the skills of interpreting the results of the coprocytogram.</p> <p>Mastering the skills of interpreting the results of enzyme-linked immunosorbent assay for antibodies to tissue transglutaminase and gliadin peptides in celiac disease (ELISA method), hydrogen tests.</p> <p>Mastering the skills of interpreting the endoscopic picture of the colon.</p>   | 2 |
| 20. | <p>Topic 23. Preparation to PL</p> <p>Mastering the skills of interpreting ultrasound data of the liver, bile ducts and gallbladder on the topic.</p> <p>Mastering the skills of interpreting the data of microscopic and biochemical examination of bile obtained by duodenal probing.</p>   | 2 |
| 21. | <p>Topics 24-25. Preparation to PL</p> <p>Mastering the skills of interpreting the data of general and biochemical blood tests (total protein, protein fractions, bilirubin and its fractions, ALT, AST, alkaline phosphatase activity).</p> <p>Mastering the skills of evaluating the results of serological blood tests (serum markers of viral hepatitis, polymerase chain reaction for the detection of virus in the blood serum, qualitative and quantitative analysis, genotyping of the virus).</p> <p>Mastering the skills of interpreting the data of ultrasound of the liver, gallbladder, pancreas, spleen and portal system vessels (Doppler) on the topic.</p> | 3 |
| 22. | <p>Topic 26. Preparation to PL</p> <p>Mastering the skills of interpreting the data of a complete blood count,</p>  | 2 |

|  |   |           |
|--|---|-----------|
|  | urine (a-amylase), biochemical blood test (elastase 1, a-amylase), fecal elastase 1.<br>Mastering the skills of evaluating the results of carbohydrate metabolism research (glucose, insulin, C-peptide, pancreatic polypeptide, blood glucagon; test with sugar load, galactose, D-xylose).<br>Preparation and writing of medical history. |           |
|  | <b>Total</b>  | <b>45</b> |

## 7. Training methods

**Practical lessons:** test control in the KROK-2 format and discussion of the results of the test control, interrogation, solving clinical situational tasks, practicing patient examination skills, training exercises on differential diagnosis of the most common diseases in adults, practicing skills in performing manipulations according to the list of 5, instruction and skills mastering on simulation models.

**Independent work:** work with the recommended basic and additional literature, with electronic information resources, independent work with the bank of test tasks Krok-2, independent mastering of communication skills with the patient and his relatives (guardians), work with the bank of laboratory and instrumental research results, examination of thematic patients together with the attending physician, mastering of practical skills using a cardiorespiratory simulator of the patient (Harvey) under the supervision of the teacher.

## 8. Forms of control and assessment methods (including criteria for assessing learning outcomes)

**Current control:** oral survey, testing, evaluation of practical skills, evaluation of activity during practical lessons.

**Final control:** differentiated credit.

**Current control assessment during practical lessons:**

1. Assessment of theoretical knowledge on the topic of the lesson:
  - methods: survey, solving a clinical case
  - maximal mark - 5, minimal mark - 3, unsatisfactory mark - 2.
2. Assessment of practical skills and manipulations on the topic of the lesson:
  - methods: assessment of the correctness of practical skills
  - maximal mark - 5, minimal mark - 3, unsatisfactory mark - 2.
3. Evaluation of work with a thematic patient:
  - methods: assessment of: a) communication skills with the patient and his relatives, b) completeness and correctness of the appointment and interpretation of laboratory and instrumental studies, c) compliance with the algorithm of differential diagnosis, d) justification of the clinical diagnosis, e) composing a treatment plan in accordance with modern standards;
  - maximal mark - 5, minimal mark - 3, unsatisfactory mark - 2.

The mark for one practical lesson is the arithmetic mean of all components and can only have an integer value (5, 4, 3, 2), which is rounded by the statistical method.

### Criteria for the current assessment during the practical lesson

| Grade | Assessment criteria  |
|-------|--|
| «5»   | The applicant is fluent in the material, actively participates in the discussion and solution of the situational clinical case, confidently demonstrates practical skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental studies, expresses his opinion on the topic of the lesson, demonstrates clinical thinking. |
| «4»   | The applicant is good in the material, participates in the discussion and solution of the situational clinical case, demonstrates practical skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental research data with some errors, expresses his opinion on the topic of the lesson, demonstrates clinical thinking. |
| «3»   | The applicant has insufficient knowledge of the material, hesitantly participates in the discussion and solution of the situational clinical case, demonstrates practical skills   |



|     |  |
|-----|--|
|     | during the examination of the patient and the interpretation of clinical, laboratory and instrumental research data with significant errors.   |
| «2» | The applicant does not know the material, does not participate in the discussion and solution of the situational clinical case, does not demonstrate practical skills during the examination of the patient and the interpretation of clinical, laboratory and instrumental studies. |

Only those applicants who have fulfilled the requirements of the curriculum in the discipline, have no academic debt and their average score for current academic activities in the discipline is at least 3.00 are allowed to take the final control in the form of a differentiated test.

#### **Assessment of learning outcomes during differential credit**

| <b>Content of assessed activity</b>      | <b>Points</b> |
|--|---------------|
| Answer to theoretical questions.         | 2             |
| A practical task based on the OSCE type. | 3             |

#### **Criteria for the learning outcomes assessment during final control (differential credit)**

| <b>Grade</b> | <b>Assessment criteria</b>  |
|--------------|---|
| Excellent    | The applicant correctly, accurately and fully completed all the tasks of the final control, clearly and logically answered the questions. Thoroughly and comprehensively knows the content of theoretical material, fluent in professional and scientific terminology. Logically thinks and formulates an answer, freely uses the acquired theoretical knowledge in the analysis of practical tasks. When solving a clinical problem, correctly interpreted the anamnesis data, the results of clinical, laboratory and instrumental studies, correctly answered all the questions posed and convincingly justified his/her point of view, could offer and justify an alternative solution to certain issues. When solving a practical task of the OSCE type, correctly demonstrated the implementation of practical skills, accurately followed the algorithm for their implementation.  |
| Good         | The applicant has completed all the tasks of the final control, clearly and logically answered the questions. Sufficiently deeply and comprehensively knows the content of theoretical issues, knows professional and scientific terminology. Thinks logically and formulates an answer, uses the acquired theoretical knowledge in the analysis of practical tasks. But when teaching some questions, there is not enough depth and argumentation, makes minor mistakes that are eliminated by the applicant himself when the examiner points them out. When solving the clinical task, he/she made minor mistakes or inaccuracies in the interpretation of anamnesis data, the results of clinical, laboratory and instrumental studies, answered all the questions without significant errors, fully justified his/her point of view, but the proposal of an alternative option caused difficulties. When solving a practical task of the OSCE type, he made minor mistakes in the algorithm and technique of performing the skill, corrected at the direction of the teacher. |
| Satisfactory | The applicant has not fully completed all the tasks of the final control, the answers to additional and leading questions are unclear, vague. Has the basic amount of theoretical knowledge, inaccurately uses professional and scientific terminology. Experiences significant difficulties in building an independent logical answer, in applying theoretical knowledge in the analysis   |

|                |   |
|----------------|---|
|                | of practical tasks. There are significant errors in the answers. When solving a clinical task, he/she interpreted the anamnesis data, the results of clinical, laboratory and instrumental studies with errors, did not know some details, made inaccuracies in answering questions, did not correctly substantiate his/her answers and interpreted the wording, had difficulties in performing tasks and suggesting alternatives. When solving a practical task of the OSCE type, he made significant errors in the algorithm and technique of performing the skill.   |
| Unsatisfactory | The applicant did not complete the tasks of the final control, in most cases did not answer additional and leading questions. He did not master the main volume of theoretical knowledge, showed a low level of proficiency in professional and scientific terminology. Answers to questions are fragmentary, inconsistent, illogical, unable to apply theoretical knowledge in the analysis of practical tasks. There are a significant number of gross errors in the answers. When solving a clinical case, he/she could not interpret the obtained anamnesis data, the results of clinical, laboratory and instrumental studies, answer the questions, or made significant mistakes in the answers; could not justify his/her decisions or did it unconvincingly. He did not offer alternative options. When solving a practical task of the OSCE type, he/she did not demonstrate or made gross mistakes and errors in the algorithm and technique of performing the skill. |

### 9. Distribution of points received by applicants for higher education

The obtained grade point average for the discipline for students who have successfully completed the work program of the discipline is converted from the traditional four-point scale to points on a 200-point scale, as shown in the table:

#### Conversion of traditional assessment to multi-point scale

| National scale | Point for discipline |
|----------------|----------------------|
| «5»            | 185 – 200            |
| «4»            | 151 – 184            |
| «3»            | 120 – 150            |
| «2»            | < 120                |

A multi-point scale (200-point scale) characterizes the actual performance of each student in mastering the educational component. The conversion of the traditional grade (grade point average for a discipline) into a 200-point scale is performed by the University's Information Technology Department.

According to the points obtained on a 200-point scale, the achievements of applicants are evaluated according to the ECTS rating scale. Further ranking on the ECTS rating scale allows to evaluate the achievements of applicants in the educational component who study in one course of one specialty, according to the points they received.

The ECTS scale is a relative and comparative rating system that establishes the applicant's belonging to the group of the best or worst among the reference group of fellow students (faculty, specialty). Grade A on the ECTS scale cannot be equal to grade A, and grade B cannot be equal to grade B, etc. When converting from a multi-point scale, the limits of grades "A", "B", "C", "D", "E" on the ECTS scale do not coincide with the limits of grades "5", "4", "3" on the traditional scale. Applicants who have received grades "FX" and "F" ("2") are not included in the list of ranked applicants. The grade "FX" is assigned to applicants who have scored the minimum number of points for current academic activities, but who have not been credited with the final

control. The grade "F" is assigned to applicants who have attended all classes in the discipline, but have not gained an average score (3.00) for current academic activities and are not allowed to take the final control.

Applicants enrolled in the same course (one specialty), based on the number of points gained in the discipline, are ranked on the ECTS scale as follows:

### **Conversion of traditional grade in the discipline and the sum of points to the ECTS scale**

| ECTS scale | Statistical indicator      |
|------------|----------------------------|
| "A"        | The best 10% of applicants |
| "B"        | The next 25% of applicants |
| "C"        | The next 30% of applicants |
| «D»        | The next 25% of applicants |
| "E"        | The last 10% of applicants |

## **10. Methodological support**

- Work program of the discipline
- Syllabus
- Methodical guides of lectures
- Methodical guides for practical lessons
- Multimedia presentations
- Situational clinical tasks
- Tasks for ISW (workbook, questions, situational tasks, bank of thematic X-rays, CTs, MRIs, ECGs, echocardiography, FGDS protocols, laboratory results)
- Electronic bank of test tasks
- Diagnostic equipment (see Appendices 1 and 2)

## **11. Questions for preparation for the final control in the form of a differential test**

1. Acute rheumatic fever. Definition. The role of streptococcal infection and immunological reactivity in the development of acute rheumatic fever. Classification. Clinical picture (carditis, polyarthritis, chorea, skin lesions). The value of laboratory and instrumental research methods. Criteria for diagnosis. Differential diagnosis. Complications. Treatment taking into account the degree of activity. Primary and secondary prevention. Prognosis and working capacity.
2. Systemic lupus erythematosus. Definition. Etiological factors and pathogenesis. Classification. Clinical manifestations depending on the damage to organs and systems and disease activity. The value of laboratory, including immunological, research methods. Diagnostic criteria. Differential diagnosis. Complications. Principles of treatment taking into account the degree of activity. Pulse therapy. Prevention of the disease. Prognosis and working capacity.
3. Systemic connective tissue diseases (systemic scleroderma, dermatomyositis). Definition. Etiological factors, pathogenesis. Classification. Clinical picture depending on the lesion of organs and systems. Diagnostic criteria, differential diagnosis. Complications. Principles of treatment. Prevention of the disease. Prognosis and working capacity.
4. Systemic vasculitis. Hemorrhagic vasculitis (vasculitis Schoenlein-Genoch), hypersensitive vasculitis, polyarteritis nodosa. Definition. Etiology, pathogenesis. Clinical manifestations, diagnostic criteria. Differential diagnosis. Treatment of the disease. Prevention of the disease. Prognosis and working capacity.
5. Rheumatoid arthritis. Definition. Etiology, pathogenesis. The role of immune status disorders

- in the development of the disease. Classification. Clinical picture taking into account the activity of the pathological process, stage of the disease, systemic manifestations. The value of laboratory and instrumental methods for diagnosing the disease, its stage and activity. Diagnostic criteria, the value of the study of synovial fluid. Differential diagnosis. Complications of the disease. Treatment strategy. Basic therapy. Tactics of treatment with glucocorticoids and nonsteroidal anti-inflammatory drugs. Prevention of the disease. Prognosis and working capacity.
6. Osteoarthritis. Definition. Etiology, pathogenesis. Classification. Clinical picture depending on the predominant localization of lesions. Diagnosis. Differential diagnosis. Medical and non-medical treatment. Primary and secondary prevention. Prognosis and working capacity.
  7. Gout. Definition. Etiology, pathogenesis. Classification. Features of joint syndrome and damage to internal organs. Criteria for diagnosis. Differential diagnosis. Complications. Medical and non-medical treatment. Prevention of the disease. Prognosis and working capacity.
  8. Seronegative spondyloarthropathies (ankylosing spondyloarthritis, reactive arthritis). Ankylosing spondyloarthritis. Definition. Etiology, pathogenesis. Classification. Clinical picture. The value of instrumental and laboratory methods. Diagnostic criteria. Differential diagnosis. Medical and non-medical treatment. Prevention of the disease. Prognosis and working capacity. Reactive arthritis. Definition. Etiology, pathogenesis. Classification. Clinical manifestations of reactive arthritis of various etiologies. Reiter's syndrome, the value of laboratory and instrumental diagnostic methods. Diagnostic criteria, differential diagnosis. Treatment, role of antibiotic therapy. Primary and secondary prevention. Prognosis and working capacity.
  9. Glomerulonephritis. Definition. Etiology, role of streptococcal infection and immunological disorders in the development of the disease. Pathogenesis. Classification. Clinical manifestations and diagnosis of individual forms. Differential diagnosis. Complications (eclampsia, acute left ventricular failure, etc.). Treatment taking into account the morphological variant and clinical course. Primary and secondary prevention. Prognosis and working capacity.
  10. Amyloidosis. Definition. Etiology. Pathogenesis. Classification. Clinical manifestations of renal amyloidosis. Diagnostic criteria. Differential diagnosis. Complications. Treatment. Primary and secondary prevention. Prognosis and working capacity.
  11. Pyelonephritis. Definition. The role of infection in inflammatory diseases of the kidneys and urinary tract. Classification. Clinical manifestations. Instrumental and laboratory diagnostic methods. Differential diagnosis. Complications. Treatment. Primary and secondary prevention. Prognosis and working capacity.
  12. Tubulointerstitial nephritis. Definition. Etiology. Pathogenesis. Clinical manifestations. Diagnostic criteria and differential diagnosis. Complications. Treatment. Primary and secondary prevention. Prognosis and working capacity.
  13. Acute kidney injury. Chronic kidney disease. Definition. Etiological factors. Pathogenesis of lesions of organs and systems, their clinical manifestations. Classification. Clinic and changes in laboratory parameters depending on the stage. Differential diagnosis. Complications. Treatment at different stages. Renal replacement therapy: hemodialysis, kidney transplantation. Indications and contraindications to renal replacement therapy, complications. Primary and secondary prevention. Prognosis and working capacity.
  14. Chronic obstructive pulmonary disease. Definition. The importance of smoking, environmental, occupational factors and infection in the development of chronic obstructive pulmonary disease. Classification. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis. Complications. Treatment. Primary and secondary prevention. Prognosis and working capacity.
  15. Bronchial asthma. Definition. Etiology, features of pathogenesis. Classification. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis.

- Complications. Treatment. Emergency care during an attack of bronchial asthma. Primary and secondary prevention. Prognosis and working capacity.
16. Pneumonia. Definition. Etiology. Classification. Clinical manifestations and features of the course depending on the pathogen. Data of laboratory and instrumental research methods. Differential diagnosis. Complications (acute respiratory distress syndrome, lung tissue destruction, acute respiratory failure and others). Differentiated treatment. Primary and secondary prevention. Prognosis and working capacity.
  17. Pleurisy. Definition. Etiological factors. Classification. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis. Complications. Indications for pleural puncture and drainage of the pleural cavity. Treatment. Primary and secondary prevention. Prognosis and working capacity.
  18. Infectious and destructive diseases of the lungs. Definition. Factors that contribute to the development of bronchiectasis, abscess and gangrene of the lungs. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis. Complications of the disease. Treatment. Indications for surgical treatment. Primary and secondary prevention. Prognosis and working capacity.
  19. Respiratory failure. Definition. Classification. Causes of occurrence. Features of the clinical course of various forms. Diagnosis, study of the function of external respiration, arterial and venous blood gases, indicators of the acid-base state of the blood. Differential diagnosis. Treatment tactics. Primary and secondary prevention. Prognosis and working capacity.
  20. Gastroesophageal reflux disease. Definition. Etiology, pathogenesis. Classification. Erosive and non-erosive GERD. Clinical manifestations depending on the variant and stage. Data of laboratory and instrumental research methods. Diagnostic criteria, differential diagnosis. Complications. Differentiated therapy. Primary and secondary prevention.
  21. Dyspepsia. Definition of dyspepsia. Etiology and pathogenesis. The role of *H. pylori* in the occurrence of gastroduodenal pathology. Classification. Unexplored and functional dyspepsia. Criteria for diagnosis. Differential diagnosis. Modern approaches to the treatment of functional dyspepsia. Primary and secondary prevention. Prognosis and working capacity.
  22. Chronic gastritis. Definition, etiology and pathogenesis of chronic gastritis. The role of *H. pylori* in the occurrence of chronic gastritis. Classification. Clinical manifestations, data of laboratory and instrumental research methods. The value of endoscopic (with morphology) research. Modern approaches to the treatment of different types of chronic gastritis. Primary and secondary prevention. Prognosis and working capacity.
  23. Peptic ulcer of the stomach and duodenum. Definition. The main causes of peptic ulcers (*H. pylori*, medications, etc.). Classification. Clinical manifestations. Complications (perforation, penetration, bleeding, stenosis, malignization). The value of instrumental and laboratory diagnostic methods. Methods of diagnosis of *Hp*-infection. Tactics of patient management. Eradication therapy, control of eradication efficiency. Drug therapy of *Hp*-negative ulcers. Indications for surgical treatment. Primary and secondary prevention. Prognosis and working capacity.
  24. Celiac disease and other enteropathies. Definition. Etiology, pathogenesis. The role of intolerance to food components, immune factors and enzymopathies (intolerance to lactose, fructose, galactose, etc.). Malabsorption and maldigestion syndromes. Diagnostic criteria, differential diagnosis. Complications. Differentiated therapy. Primary and secondary prevention. Prognosis and working capacity.
  25. Inflammatory diseases of the intestine. Ulcerative colitis and Crohn's disease: definition, etiology and pathogenesis. Classification. Features of the clinical course depending on the degree of activity, severity and phase of the course. Laboratory and instrumental diagnostics. Diagnostic criteria, differential diagnosis. Intestinal and extraintestinal complications and diseases associated with inflammatory bowel disease (toxic dilatation, perforation, sclerosing cholangitis, spondylitis, arthritis, dermatosis, uveitis, etc.) Treatment. Primary and secondary prevention. Prognosis and working capacity.

26. Irritable bowel syndrome, definition. Etiology and pathogenesis. Classification. Clinical manifestations of different variants. Roman diagnostic criteria. Differential diagnosis. Treatment of various forms. Primary and secondary prevention. Prognosis and working capacity.
27. Cholelithiasis, chronic cholecystitis and functional biliary disorders. Definition. Etiology, pathogenesis. The importance of infection, motor disorders and dyscholia in the development of chronic cholecystitis, cholangitis and gallstone disease. Classification. Features of the clinical course. Laboratory and instrumental diagnostic methods. Differential diagnosis. Complications of cholelithiasis. Treatment. Indications for surgical treatment. Primary and secondary prevention. Prognosis and working capacity.
28. Chronic hepatitis. Definition. Classification. The role of persistence of the virus, toxic and drug agents, immune disorders and alcohol. Methods of diagnosis of viral infection. Autoimmune hepatitis, chronic viral, toxic (drug) hepatitis. Alcoholic liver disease. The main clinical and biochemical syndromes. Features of the clinical course and diagnosis of individual forms. Differential diagnosis. Complications of the disease. Features of treatment of various forms. Primary and secondary prevention. Prognosis and working capacity.
29. Cirrhosis of the liver. Definition. The importance of viral infection, nutritional factors, alcohol, toxic substances and immune disorders. Classification. Features of clinical manifestations and diagnosis of different variants. Differential diagnosis. Liver failure and other complications. Differentiated therapy. Emergency therapy in case of complications. Primary and secondary prevention. Prognosis and working capacity.
30. Chronic pancreatitis. Definition. The importance of various etiological factors. Classification. Features of clinical course, diagnosis and differential diagnosis depending on the form and localization of the pathological process. Complications. Research methods in the diagnosis of pancreatitis. Differentiated treatment. Primary and secondary prevention. Prognosis and working capacity.

## **THE LIST PRACTICAL SKILLS WHICH ARE CHECKED DURING FINAL CONTROL**

### **1. Skills of gathering information about the patient**

- 1.1. Collect data on patient complaints, medical history, life history (including professional history), in a health care facility, its unit, using the results of the interview with the patient, according to the standard scheme of the patient.
- 1.2. Under any circumstances (in a health care facility, its unit, in the field), using knowledge about the person, his organs and systems, according to certain algorithms:
  - 1.2.1. Collect information about the general condition of the patient (consciousness, constitution) and appearance (examination of the skin, subcutaneous fat layer, palpation of lymph nodes, thyroid and mammary glands);
  - 1.2.2. Examine the state of the cardiovascular system (examination and palpation of the heart and superficial vessels, determination of percussion boundaries of the heart and blood vessels, auscultation of the heart and blood vessels);
  - 1.2.3. Examine the condition of the respiratory organs (examination of the chest and upper respiratory tract, palpation of the chest, percussion and auscultation of the lungs);
  - 1.2.4. Examine the condition of the abdominal organs (examination of the abdomen, palpation and percussion of the intestines, stomach, liver, spleen, palpation of the pancreas, kidneys, finger examination of the rectum);
  - 1.2.5. Examine the condition of the musculoskeletal system (examination and palpation);
  - 1.2.6. Examine the condition of the genitourinary system
2. Ability to schedule examinations and evaluate the results of laboratory and instrumental studies, taking into account the results of collecting information about the patient in a health care facility, its unit, using a standard procedure, using knowledge about the person, his organs and systems, based on laboratory results and instrumental research (according to list 4).



### **3. Ability to establish a preliminary and clinical diagnosis of the disease.**

3.1. In the conditions of the health care institution and its subdivision to be able to identify and record the leading clinical symptom or syndrome (according to list 1) by making an informed decision, using preliminary data on complaints and medical history, physical examination data, adhering to relevant ethical and legal norms;

3.2. Be able to establish the most probable or syndromic diagnosis of the disease (according to list 2) by making an informed decision, by comparing with standards, using previous patient history and examination of the patient, based on the leading clinical symptom or syndrome, using knowledge about the person, his organs and system, adhering to the relevant ethical and legal norms.

3.3. Carry out differential diagnosis of diseases (according to list 2) by making an informed decision, according to a certain algorithm, using the most probable or syndromic diagnosis, data from laboratory and instrumental examination of the patient.

3.4. Establish a clinical diagnosis (according to list 2) by making an informed decision and logical analysis, using the most probable or syndromic diagnosis, laboratory and instrumental examination of the patient, the conclusions of differential diagnosis, knowledge of man, his organs and systems, adhering to ethical and legal norms.

### **4. Ability to determine the principles of treatment of diseases**

4.1. Determine the nature of treatment (conservative, operative) of the disease (according to list 2), in a health care facility on the basis of a preliminary clinical diagnosis, using knowledge about the person, his organs and systems, adhering to relevant ethical and legal norms, by making an informed decision existing algorithms and standard schemes.

4.2. Determine the principles of treatment of the disease (according to list 2), in a health care facility based on a preliminary clinical diagnosis, using knowledge about the person, his organs and systems, adhering to relevant ethical and legal norms, by making informed decisions according to existing algorithms and standard schemes .

**5. Ability to diagnose an emergency**(according to list 3) by making an informed decision and assessment of the person's condition, under any circumstances (at home, on the street, health care facility, its unit), including in emergency situations, in conditions of lack of information and limited time, using standard methods of physical examination and possible history, knowledge of the person, his organs and systems, adhering to the relevant ethical and legal norms.

**6. Ability to determine the tactics of emergency medical care** under any circumstances, using knowledge of the person, his organs and systems, adhering to the relevant ethical and legal norms, by making an informed decision, based on the diagnosis of emergency (according to list 3) for a limited time using standard schemes.

**7. Ability to provide emergency medical care** under any circumstances, using knowledge of the person, his organs and systems, adhering to the relevant ethical and legal norms, by making an informed decision, based on a diagnosis of emergency (list 3) for a limited time according to with certain tactics, using standard schemes.

**9. Perform medical manipulations** (according to list 5) in a medical institution, at home or at work on the basis of a previous clinical diagnosis and / or indicators of the patient's condition, using knowledge of the person, his organs and systems, adhering to relevant ethical and legal norms, by making informed decisions and using standard methods.

**10. The ability to determine the necessary mode of work and rest in the treatment of the disease** (according to list 2), in a health care facility, at the patient's home on the basis of a previous clinical diagnosis, using knowledge of the person, his organs and systems, adhering to relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes .

**13. Ability to conduct a working capacity examination:** to determine the presence and severity of limitations of life, type, degree and duration of disability with the issuance of relevant documents in the health care institution on the basis of data on the disease and its course, features of professional activity.

**14. Ability to fill in and keep medical records:** under the conditions of the health care institution, its subdivision: to prepare an annual report on personal production activities, using official accounting documents, in a generalized form, to keep medical records of the patient and the population inpatient medical card, extract from inpatient medical card, procedural sheet, using standard technology, based on regulatory documents.

**I. Interpretation of laboratory and instrumental studies (according to list 4)**

- analysis of ascitic fluid
- general blood test
- analysis of pleural fluid
- analysis of synovial fluid
- urine analysis by Zimnitsky
- urine analysis by Nechiporenko
- urine test for diastase and blood test for  $\alpha$ -amylase
- multimoment fractional study of bile and pH-metry of the stomach and esophagus
- histomorphological examination of biopsy of parenchymal organs (kidneys, liver)
- blood glucose, glycated hemoglobin
- study of external respiratory function
- general fecal analysis
- general blood test
- general urine analysis
- general sputum analysis
- total blood bilirubin and its fractions
- creatinine, blood urea, glomerular filtration rate
- coagulogram
- blood lipid profile
- blood alkaline phosphatase
- methods of instrumental visualization of bones and joints
- methods of instrumental visualization of chest cavity organs
- methods of instrumental visualization of genitourinary system organs
- methods of instrumental visualization of abdominal organs
- microbiological examination of biological fluids and secretions
- fecal pancreatic elastase
- procalcitonin
- blood proteins and their fractions
- pulse oximetry, acid-base status and blood gases
- serological reactions in autoimmune diseases
- blood uric acid
- C-reactive protein
- standard ECG (in 12 leads)
- tests to detect *Helicobacter pylori*
- blood transaminases
- blood electrolytes
- endoscopic examination of the bronchi
- endoscopic examination of the digestive tract
- echocardiography and dopplerography
- ferritin, iron and copper of blood serum
- fractional study of gastric juice, bile and pH-metry of the stomach

**II. Medical manipulations (according to list 5)**

23. perform indirect heart massage
24. perform artificial respiration

25. restore the patency of the airways
26. perform conicotomy
27. perform a pleural puncture
28. measure blood pressure
29. restore airway patency
30. provide peripheral venous and intraosseous access
31. to carry out finger examination of the rectum
32. to temporarily stop external bleeding
33. administer medicinal substances (intravenous jet and drip, intraosseous), including in the field
34. install nasogastric and orogastric probes
35. perform defibrillation using a manual automatic defibrillator-cardioverter
36. perform bladder catheterization with a soft probe
37. register a standard ECG in 12 leads

### III. Providing assistance in case of emergency (according to list 3)

1. Asthmatic status
2. Acute respiratory failure
3. Acute heart failure
4. Attack of paroxysmal tachycardia
5. Morgan-Adams-Stokes syndrome
6. Hypertensive crisis
7. Collapse
8. Acute liver failure
9. Acute renal failure
10. Gastrointestinal bleeding

## 12. Recommended literature

### Basic:

1. Davidson's Principles and Practice of Medicine 23rd Edition. Editors: Stuart Ralston, Ian Penman, Mark Strachan Richard Hobson. – Elsevier, 2018. – 1440 p.
2. Internal Medicine = Внутрішня медицина. Т1: Підручник для студентів медичних і фармацевтичних факультетів вищої освіти закладів України. Рекомендовано вченою радою ВНМУ ім М. Пирогова / за ред.: Станіславчук М.А., Серкова В.К.— 2019. — 408 с.
3. Internal Medicine=Внутрішня медицина. Т2: Підручник для студентів медичних і фармацевтичних факультетів вищої освіти закладів України. Рекомендовано вченою радою ВНМУ ім М. Пирогова / Станіславчук М.А., Серкова В.К. (за ред.)- 2019. — 360 с.
4. Medical diagnosis and treatment, 48<sup>th</sup> edition / M.A. Papadakis, S.J. McPhee. - Mc Grow Hill Education, 2019. - 1884 p.
5. The Brigham Intensive Review of Internal Medicine, 3d edition / A.K.Singh, J. Loscalzo. Elsevier, 2019. – 1283 p.
6. Rheumatology Secrets, 4<sup>th</sup> edition / S.G. West, J. Kolfenbach. - Elsevier, 2020. - 744 p.
7. Comprehensive Clinical Nephrology, 6<sup>th</sup> edition / J. Feehally, J. Floege, M. Tonelli, R.J. Johnson. – Elsevier, 2019. – 1570 p.
8. Essentials of Clinical Pulmonology / P.L. Shah, F. J. Herth, Y.C. Garry Lee, G.J. Criner. – CRC Press, 2019. – 755 p.
9. Evidence-based Gastroenterology and Hepatology, 4<sup>th</sup> edition / John W. D. McDonald, Brian G. Feagan, Rajiv Jalan, Peter J. Kahrilas – Wiley Blackwell, 2019. – 806 p.
10. Handbook of Liver Disease, 4<sup>th</sup> edition / Lawrence S. Friedman, Paul Martin. – Elsevier, 2018. – 512 p.

**Additional:**

1. Diagnosis and Treatment of Adults with Community-acquired Pneumonia. An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America [Электронный ресурс] / [JP Metlay Joshua P, GW Waterer, LC Ann та ін.]. - 2019. - Режим доступу до ресурсу: <https://www.atsjournals.org/doi/ref/10.1164/rccm.201908-1581ST>
2. Macleod's Clinical Examination, 14<sup>th</sup> edition. Ed. by J. Alastair Innes, A.R. Dover, K. Fairhurst. Elsevier - 2018. - 402 p.
3. USMLE Step 2 CK Lecture Notes 2017: Internal Medicine (Kaplan Test Prep). - 2016. - Published by Kaplan Medical. - 474 p.
4. Hutchison's Clinical Methods, 24<sup>th</sup> edition / M. Glynn, W.M. Drake. – Elsevier, 2018 – 506 p.
5. Making Sense of Lung Function Tests, 2d edition / J. Dakin, M. Mottershaw, E. Kourтели. – CRC Press, 2017. – 204 p.
6. Diagnostic and Therapeutic Procedures in Gastroenterology: An Illustrated Guide, 2d edition / S. Sridhar & G. Y. Wu. – Humana Press, 2019. – 671 p.

**13. Electronic information recourses:**

1. <https://www.aasld.org> – American Association of Study Liver Diseases
2. <http://www.eagen.org/> - European Association for Gastroenterology, Endoscopy and Nutrition
3. <http://www.ers-education.org/guidelines.aspx> - European Respiratory Society
4. <http://www.gastro.org/> - American Gastroenterological Association (AGA)
5. [www.ginasthma.org](http://www.ginasthma.org) – Global Initiative for Asthma
6. <http://goldcopd.org>. – Global Initiative for COPD
7. [www.ama-assn.org](http://www.ama-assn.org) – American Medical Association
8. [www.who.int](http://www.who.int) – World Health Organization
9. <http://bma.org.uk> – British Medical Association