STATE UNIVERSITY
"UZHHOROD NATIONAL UNIVERSITY"
MEDICAL FACULTY 2
Department Of Internal Medicine

"APPROVED"
Dean of the Medical Faculty 2
_____ Vasyl KALIY
"28" 05 2025

SYLLABUS

EC 11. INTERNAL MEDICINE (profile course)

Educational level	**Second (Master)**
Subject area	**22 "Health" / I "Health and Social Welfare"**
Specialty	**222 "Medicine" / I2 "Medicine"**
Educational program	**"General Medicine"**
Discipline status	**Elective**
The language of instruction	**English**

Uzhhorod 2025

"Internal Medicine (profile course)" syllabus for higher education seekers of the subject area 22 "Health" / I "Health and Social Welfare", specialty 222 "Medicine"/ I2 "Medicine", educational program "General medicine".

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Minutes № _11_ of "_28_" __May_ 2025

Head of the Department _____ /Marianna TOVT-KORSHYNSKA/

Approved by the Scientific-Methodical Commission of the Medical Faculty 2

Minutes № _9_ of "*28*" May 2025

Head of the Scientific-Methodical Commission _____ /Nataliia MALETS/

1. DESCRIPTION OF THE COURSE

<table>
<tr><td rowspan="2">Name of indicators</td><td colspan="2">Distribution of academic hours according to the curriculum</td></tr>
<tr><td>Full-time study</td><td>Extramural form of study</td></tr>
<tr><td>ECTS credits – 16</td><td colspan="2">Year of training:</td></tr>
<tr><td>Total number of hours – 480</td><td>6</td><td>-</td></tr>
<tr><td>Number of modules – 7</td><td colspan="2">Semester:</td></tr>
<tr><td rowspan="5">Weekly academic hours for full-time study:

class-room academic hours - 7,5

student's self-study hours - 4,5</td><td>XI, XII</td><td>-</td></tr>
<tr><td colspan="2">Lectures:</td></tr>
<tr><td></td><td>-</td></tr>
<tr><td colspan="2">Practical classes (seminars):</td></tr>
<tr><td></td><td>-</td></tr>
<tr><td rowspan="2">Type of final control: credit</td><td colspan="2">Laboratory classes (clinical):</td></tr>
<tr><td>300</td><td>-</td></tr>
<tr><td rowspan="2">Form of final control: written, oral</td><td colspan="2">Self-study:</td></tr>
<tr><td>180</td><td>-</td></tr>
</table>

2. PURPOSE AND OBJECTIVES OF THE COURSE

The ultimate goals of the course

The purpose of studying the academic discipline "Internal Medicine III" is to achieve and improve knowledge, abilities, skills and other competencies in internal medicine, necessary in professional activities and the ability to use them to solve typical tasks of a doctor, the scope of which is provided by the lists of syndromes and symptoms of diseases, emergency conditions and diseases that require special patient management tactics; laboratory and instrumental research, medical manipulations.
According to the educational program, the study of the discipline contributes to the formation of the following competencies in higher education seekers:
General Competencies:
GC 1. Ability to analysis and synthesis, abstract thinking.
GC 2. Ability to learn and master modern knowledge.
GC 3. Ability to apply knowledge in practical situations.
GC 4. Knowledge and understanding of the subject and professional activity.
GC 5. Ability to adapt the information and manage a new situations.
GC 6. Ability to make informed decisions.
GC 7. Ability to work in a team.
GC 8. Ability to interpersonal interaction.
GC 11. Ability to search, process and analyze information from various sources.

Professional (Special) Competencies:

PC 1. The ability to collect medical information about the patient and analyze clinical data.

PC 2. The ability to determine necessary panel of laboratory and instrumental research and to evaluate their results.

PC 3. The ability to establish a preliminary and a clinical diagnosis of the disease.

PC 4. The ability to determine the required mode of work and rest in the treatment of diseases.

PC 5. The ability to determine therapeutic nutrition in the treatment of diseases.

PC 6. The ability to determine the principles and nature of disease treatment and prevention.

PC 7. The ability to diagnose emergencies.

PC 8. The ability to determine the tactics of providing emergency care.

PC 10.The ability to perform medical manipulations.

PC 11.The ability to solve medical problems in new or unfamiliar environments having incomplete or limited information, taking into account aspects of social and ethical responsibility.

PC 15.The ability to conduct a functional capacity evaluation.

PC 16.The ability to maintain medical records, including those in electronic format.

PC 21.The ability to clearly and unambiguously convey one's own knowledge, conclusions and arguments on health care issues as well as related issues to specialists and non-specialists, in particular to people who are studying.

PC 22.The ability to manage healthcare workflows that are complex, unpredictable and require new strategic approaches.

PC 23.The ability to develop and implement scientific and applied projects in the health care field.

PC 24.To comply with ethical principles when working with patients and laboratory animals.

PC 25.To observe professional and academic integrity, bear responsibility for the reliability of the obtained scientific results.

The educational process requires the student's participation in the management of patients. If you can not get access to patients of any category, students fill the educational Case History of the disease diagnoses / problems within a category. The need for writing such a history is determined as an assistant / associate professor (department head teacher) based on weekly data review of relevant patients in the wards.
The course is conducted in hospitals that provide emergency service. Each student has a weekly basis in a hospital to work in the new 3 / undifferentiated patients. Throughout the course, students examine weekly 6-10 patients under the supervision. The number of patients, responsibility for which lies with the student, determined by the complexity of cases and shown student readiness to participate in the treatment of additional patients. It is expected that students will take a full part in management of at least 2/3 of hospitalized patients.
Additional classes are held during the morning round, lectures and workshops. Assessment of student filling history teacher and statements executed in the process of the patient.
Following the completion of the course the student should know:
• Conduct a survey and physical examination of patients with major cardiac syndromes.
• Develop a plan of examination of patients with heart disease, justify the use of fixed invasive and noninvasive diagnostic techniques used in cardiology, determine the indications and contraindications for their conduct, complications.
• Identify different versions of the course and complications of heart disease.
• To conduct differential diagnosis, justify and formulate diagnosis of major cardiac syndromes based on data analysis of laboratory and instrumental examination.
• Appoint treatment, determine prognosis, conduct primary and secondary prevention of heart disease.
• Conduct a survey and physical examination of patients with major rheumatic syndromes.
• justify the use of fixed invasive and non-invasive diagnostic methods used in rheumatology, to determine the indications and contraindications for their conduct, complications.
• Identify the different variants of rheumatic diseases and complications.
• Develop a plan of examination of patients with rheumatic diseases.
• To conduct differential diagnosis, justify and formulate diagnosis of rheumatic syndromes fixed on the basis of data analysis laboratory and instrumental examination.
• Appoint treatment, determine prognosis, conduct primary and secondary prevention of rheumatic diseases.
• Conduct a survey and physical examination of patients with major pulmonary syndromes.
• Develop a plan of examination of patients with major pulmonary syndromes.
• justify the use of fixed invasive and non-invasive diagnostic methods used in pulmonology, to determine the indications and contraindications for their conduct, complications.
• Based on data analysis laboratory and instrumental examination conduct differential diagnosis of major hpulmonolohichnyh syndromes, formulate and justify the diagnosis of major respiratory diseases.
• Appoint treatment, determine prognosis and conduct primary and secondary prevention of respiratory diseases.
• Conduct a survey and physical examination of patients with major endocrine syndromes.
• justify the use of fixed invasive and non-invasive diagnostic methods used in endocrinology, determine the indications and contraindications for their conduct, complications.

• Develop a plan of examination of patients with major endocrine syndromes.
• To conduct differential diagnosis, justify and formulate diagnosis of major endocrine syndromes.
• Appoint treatment, determine prognosis and conduct primary and secondary prevention of major endocrine diseases.
• Conduct a survey and physical examination of patients with major renal syndromes.
• Major invasive and noninvasive diagnostic methods used in nephrology, indications and contraindications for their conduct, complications.
• Identify the major and atypical variants of complications and diseases of the urinary system.
• Develop a plan of examination of patients with major renal syndromes.
• Based on data analysis laboratory and instrumental examination conduct differential diagnosis, formulate and justify the diagnosis of diseases of the urinary system.
• Appoint treatment, determine prognosis and conduct primary and secondary prevention for diseases of the genitourinary system.
• Conduct a survey and physical examination of patients with major hematologic syndromes.
• justify the use of fixed invasive and non-invasive diagnostic methods used in hematology, indications and contraindications for their conduct, complications.
• Identify typical and atypical clinical picture of major diseases of the blood and blood-forming organs.
• Develop a plan of examination of patients with major hematologic syndromes.
• Based on data analysis laboratory and instrumental examination conduct differential diagnosis, formulate and justify the diagnosis of major diseases of the blood and blood-forming organs.
• prescribe treatment, determine prognosis, conduct primary and secondary prevention of major diseases of the blood and blood-forming organs.

To be able to:
• Register and interpret 12-lead ECG.
• Measure and interpret blood pressure.
• diagnose and assist in fainting.
• diagnose and assist in hypertensive crisis.
• diagnose and assist in arterial hypotension.
• Diagnose and assist with paroxysmal cardiac arrhythmias.
• Diagnose and assist the syndrome Morgagni-Adams-Stokes state.
• Provide cardiopulmonary resuscitation.
• Interpret laboratory parameters in rheumatic diseases (rheumatic tests, autoimmune markers, etc.).
• Interpret data and echocardiographic examination beam inspection of joints and spine.
• Conduct a survey and physical examination of patients with major gastrointestinal syndromes.
• Develop a plan of examination of patients with major gastrointestinal syndromes.
• justify the use of invasive and noninvasive diagnostic techniques used in gastroenterology, determine the indications and contraindications for their conduct, complications.
• To conduct differential diagnosis, justify and formulate diagnosis of major gastrointestinal syndromes based on data analysis of laboratory and instrumental examination.
• Identify key variants of complications and diseases of gastrointestinal tract, hepatobiliary system and pancreas.
• Appoint treatment, determine prognosis, do the primary and secondary prevention for diseases of the alimentary canal, hepatobiliary system and pancreas.
• Diagnose and assist with respiratory failure.
• justify the need to perform pleural puncture.
• Perform peakflowmetry.
• diagnose and assist in urgent situations in endocrinology.
• diagnose and assist in renal failure.
• Diagnose and assist with bleeding due to diseases of the blood and blood-forming organs.
• Identify a group of blood transfused blood components and substitutes.

• demonstrate the moral and ethical principles of medical specialist and principles of professional subordination.

3. PREREQUISITES FOR STUDYING THE DISCIPLINE

Prerequisites for studying the discipline are mastering the following educational subjects (ES) of the educational program (EP):

ES 6.	Medical biology
ES 7	Medical and biological physics
ES 8	Medical chemistry
ES 9.	Bioorganic chemistry
ES 10.	Human anatomy
ES 11.	Histology, Cytology and Embriology
ES 12.	Physiology
ES 14.	Biochemistry
ES 21.	Patophysiology
ES 22.	Pharmacology
ES 23.	Propaedeutics of Internal Medicine
ES 26	Medical Psychology
ES 28.	Radiology
ES 29	Internal medicine, including endocrinology, medical genetics
ES 36	Neurology
ES 37	Psychiatry, narcology
ES 42	Clerkship
ES 43	Internal medicine II, including clinical pharmacology, clinical immunology and allergology, occupational diseases
E53	Clerkship II

4. EXPECTED RESULTS OF EDUCATION

According to the educational program "Internal medicine", study of the educational program discipline must ensure the achievement of higher education applicants such prognostic results of education (**PLO**):

Program Learning Outcomes	**Code PLO**
To have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require knowledge updating and integration. To be responsible for professional development as well as to be able to carry out further professional training with a high level of autonomy.	PLO 1
To understand and possess a decent knowledge of fundamental and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.	PLO 2

To have specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine as well as related interdisciplinary problems.	PLO 3
To distinguish and identify leading clinical symptoms and syndromes (according to the list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the human, human's organs and systems, establish a preliminary clinical diagnosis of the disease (according to the list 2)	PLO 4
To collect complaints, history of life and diseases, evaluate psychomotor and physical development of the patient, state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (according to the list 4), taking into account the age of the patient.	PLO 5
To establish a final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of a clinical and follow-up examination, to carry out differential diagnosis, upholding relevant ethical and legal standards, under the control of the managing physician within the health care facility (according to the list 2).	PLO 6
To assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to the list 4) of patients with diseases of organs and body systems for carrying out differential diagnosis of diseases (according to the list 2).	PLO 7
To determine the main clinical syndrome or preconditions for the severity of the condition of the victim/the injured (according to the list 3) by making a reasoned decision and assessing the person's condition under any circumstances (within or outside a health care facility), both in conditions of emergency and hostilities as well as in field conditions, in conditions of lack of information and limited time.	PLO 8
To determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to the list 2), taking into account the patient's age, within or outside a health care facility and at the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, upholding relevant ethical and legal standards, 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 managing physician within a medical facility.	PLO 9

To determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, upholding relevant ethical and legal standards by making a reasoned decision according to existing algorithms and standard schemes.	PLO 10
To determine tactics and provide emergency medical care in emergency situations (according to the list 3) in limited time conditions according to existing clinical protocols and standards of treatment.	PLO 14
To perform medical manipulations (according to the list 5) within a medical facility, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, upholding relevant ethical and legal standards.	PLO 17
To determine the state of functioning and limitations of a person's vital activities and the duration of work incapacity with the preparation of relevant documents, within a health care facility, based on data about the disease and its history, peculiarities of the person's professional activity, etc. To maintain medical documentation regarding the patient and the contingent of the population on the basis of the regulatory documents.	PLO 18

List 1 (syndromes and symptoms)

2. acromegaly
3. anemia syndrome
4. anuria and oliguria
5. arterial hypertension
6. arterial hypotension
7. chest pain
8. abdominal pain
12. vomiting
13. bronchial obstruction syndrome
15. pleural effusion
17. fever
18. hemorrhagic syndrome
19. hypoglycemia
20. hyperglycemia
22. hepatomegaly and hepatolienal syndrome
23. headache
24. dysuria
26. dyspepsia
27. dysphagia
28. diarrhea
29. jaundice
30. shortness of breath
31. asphyxia
32. constipation
35. cardiomegaly
36. cough
38. coma
40. internal bleeding
41. hemoptysis
43. lymphadenopathy
46. edema
47. obesity (+ body weight)
51. pneumothorax tense (closed)
52. pneumothorax nontense (open)
53. valvular pneumothorax
54. polyuria
55. portal hypertension
57. heart rhythm and conduction disturbances
58. sudden cardiac arrest
59. disorders of consciousness
60. skin itching
61. urinary syndrome
64. indigestion syndrome
65. thirst
67. joint syndrome
68. convulsions
69. weight loss
70. cyanosis

73. gastrointestinal bleeding

List 2 (diseases)

I) Diseases of blood and hematopoietic organs, immune mechanism comprising
disorders
1. anemia
3. hemophilia
4. leukemiae
5. lymphomas
9. idiopathic thrombocytopenic purpura
IV) Cardiovascular system diseases:
40. aortic aneurysms
41. atherosclerosis
43. congenital heart defects
44.essential arterial hypertension
45.secondary arterial hypertension
46. endocarditis
48. ischemic heart disease
49. cardites
50. cardiomyopathy
51. cor pulmonale
52. acquired heart defects
54. pericarditis
55. heart rhythm and conduction disturbances
56. heart failure
58. pulmonary embolism
V) Diseases of respiratory organs and mediastinum:
61. bronchial asthma
62. bronchitis
63. bronchiectatic disease
64. bronchopulmonary dysplasia
66. acute respiratory distress syndrome
67. respiratory failure
68. infectious and destructive lung diseases
69. respiratory failure
71. cystic fibrosis
72. lung and mediastinal neoplasms
73. pleurisy
75. pneumonia
76. pneumothorax
80. chronic obstructive pulmonary disease
VI) Digestive organs diseases:
82. peptic ulcer disease
84. gastroesophageal reflux disease, esophagitis
85. gastritis, duodenitis
86. acute and chronic hepatitis
89. acute and chronic pancreatitis
90. benign diseases of the esophagus
91. enterites, colites
94. neoplasms of the esophagus, stomach, colon, liver and pancreas
95. peptic ulcers of the stomach and duodenum
98. liver failure
99. malabsorption syndrome
100. stenosis of the pylorus of the stomach
102. functional gastrointestinal disorders
104. cholecystitis, cholangitis, gallstone disease, choledocholithiasis
105. cirrhosis of the liver
106. gastrointestinal bleeding
VII) Diseases of the genitourinary system:
107. amyloidosis of the kidneys
110. glomerulonephritis
111. dysmetabolic nephropathies
112. nephrotic syndrome
114. pyelonephritis
116. urolithiasis
117. tubulointerstitial nephritis
119. chronic kidney disease
IX) Connective tissue and musculoskeletal system diseases:
133. acute rheumatic fever
134. dermatomyositis and polymyositis
138. gout
141. rheumatoid arthritis
142. systemic scleroderma
143. systemic lupus erythematosus
144. systemic vasculitis (polyarteritis nodosa, hemorrhagic vasculitis, hypersensitivity vasculitis)
149. chronic rheumatic disease
150. juvenile rheumatoid arthritis
X) Endocrine diseases, nutritional and metabolic disorders:
151. acromegaly and pituitary gigantism
152. hypothyroidism
153. hypotrophy, protein deficiency
154. hypopituitarism
155. thyrotoxicosis
156. endemic goiter
157. diabetes insipidus
158. nodular goiter, tumors of the thyroid gland
159. obesity
160. congenital dysfunction of the cortex of the adrenal glands
161. violation of calcium-phosphorus metabolism, vitamin D metabolism

163. thyroiditis
164. Cushing's disease and syndrome
165. chronic adrenal insufficiency
166. diabetes
167. hypoparathyroidism
168. hyperparathyroidism
169. tumors of the adrenal glands
174. hypogonadism
XI) Infectious and parasitic diseases:
182. viral hepatitis
209. tuberculosis of different localization
210. Lyme disease

List 3 (emergency conditions)

2. hypertensive crisis
3. hypoglycemia (coma)
4. acute respiratory failure
6. acute adrenal insufficiency
8. acute liver failure
9. acute heart failure
12. acute coronary syndrome
15. diabetic coma, including ketoacidotic, hyperosmolar, lactacidemic
20. sudden cardiac arrest
21. collapse
22. loss of consciousness and comatose states
23. renal colic
24. biliary colic
25. acute anaphylactic reactions
26. acute heart rhythm disturbances,
29. venous and arterial thromboembolism
30. convulsive syndrome

List 4 (laboratory and instrumental investigations)

4. urine analysis by Zimnytskyi
5. urine analysis my Nechyporenko
6. alpha-amylase activity in blood and urine, fecal elastase 1
7. blood protein and proteinogram, C-reactive protein
8. blood glucose, glycated hemoglobin,
9. oral glucose tolerance test
10. blood lipid profile
11. blood hormones
12. serum ferritin, iron and copper
13. creatinine, blood and urine urea, glomerular filtration rate
14. blood electrolytes
15. blood aminotransferases
16. total blood bilirubin and its fractions
17. coagulogram
18. blood uric acid
19. blood alkaline phosphatase
27. standard ECG (12 leads)
28. bronchoscopy
29. endoscopic examination of the digestive tract
30. echocardiography and dopplerography
31. feces analysis
32. full blood count
33. urine analysis
34. glucose and acetone in urine
37. sputum analysis
44. microbiological investigation of biological fluids and secretions
46. methods of thyroid gland visualization methods
47. X-ray, contrast angiography
48. abdominal organs visualization methods
49. chest cavity visualization methods
50. genitourinary system visualization methods
54. tuberculin skin test
55. fractional bile investigation and pH-metry of the stomach and esophagus

List 5 (medical procedures)

1. cardiopulmonary resuscitation

2. artificial respiration
3. defibrillation (using a manual automatic cardioverter defibrillator)
4. 12-lead ECG record
5. temporary stop of external bleeding
7. hemostatic tourniquets application and use of hemostatic agents, including field conditions
8. nasogastric and orogastric tube placement
10. medicines administration (intravenous bolus and drip, intraosseous injection), including in field conditions
11. peripheral venous access
12.blood pressure measurement
13. airways patency retrieval
19. clinical examination of the mammary glands
20. thoracocentesis
22. blood groups, Rhesus determination
29. thyroid gland palpation

Expected results of education that must be achieved by students after mastering the discipline “Internal medicine”:

ELO code	Expected learning outcomes of the discipline	PLO code
ELO 1	The ability to carry out professional activities based on updating and integrating knowledge. The ability to be responsible for professional development, as well as to carry out further professional training with a high level of autonomy.	PLO 1
ELO 2	The ability to possess a decent knowledge of basic and clinical biomedical sciences at a level sufficient to solving professional tasks in the field of health care.	PLO 2
ELO 3	Possession of specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine as well as related interdisciplinary problems.	PLO 3
ELO 4	Ability to distinguish and identify leading clinical symptoms and syndromes (according to list 1); according to generally accepted methods, using preliminary medical history data, patient examination data, knowledge about a person, human organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2)	PLO 4

ELO 5	The ability to collect complaints, history of life and diseases, evaluate psychomotor and physical development of the patient, state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (according to the list 4), taking into account the age of the patient.	PLO 5
ELO 6	The ability to establish a final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of a clinical and follow-up examination, to carry out differential diagnosis, upholding relevant ethical and legal standards, under the control of the managing physician within the health care facility (according to the list 2).	PLO 6
ELO 7	Ability to assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to the list 4) of patients with diseases of organs and body systems for carrying out differential diagnosis of diseases (according to the list 2).	PLO 7
ELO 8	Ability to determine the main clinical syndrome or preconditions for the severity of the condition of the victim/the injured (according to the list 3) by making a reasoned decision and assessing the person's condition under any circumstances (within or outside a health care facility), both in conditions of emergency and hostilities as well as in field conditions, in conditions of lack of information and limited time.	PLO 8
ELO 9	Ability to determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to the list 2), taking into account the patient's age, within or outside a health care facility and at the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, upholding relevant ethical and legal standards, by making a reasoned decision according to existing algorithms and standard schemes;	PLO 9
ELO 10	Ability to determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, upholding relevant ethical and legal standards by making a reasoned decision according to existing algorithms and standard schemes.	PLO 10
ELO 11	Ability to determine tactics and provide emergency medical care in emergency situations (according to the list 3) in limited time conditions	PLO 14

	according to existing clinical protocols and standards of treatment.	
ELO 12	Ability to perform medical manipulations (according to the list 5) within a medical facility, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, upholding relevant ethical and legal standards.	PLO 17
ELO 13	Ability to determine the state of functioning and limitations of a person's vital activities and the duration of work incapacity with the preparation of relevant documents, within a health care facility, based on data about the disease and its history, peculiarities of the person's professional activity, etc. To maintain medical documentation regarding the patient and the contingent of the population on the basis of the regulatory documents.	PLO 18

5. ASSESSMENT TOOLS AND METHODS FOR DEMONSTRATING RESULTS OF EDUCATION:

Educational results evaluation forms:
PLO 1 – oral answer.
PLO 2 – clinical examination of the patient (solving clinical problems (oral, written, simulation scenario performance)).
PLO 3 – clinical analysis of the patient (solving clinical problems), test problems, analysis of prescription letters and their correction, simulation scenario performance.
PLO 4 – clinical examination of the patient (solving clinical problems), test tasks, evaluation of laboratory research results, analysis and evaluation of instrumental research results and parameters characterizing the functions of the human body, simulation scenario performance.
PLO 5 – test tasks, solving situational problems, conducting laboratory studies and evaluating their results, analyzing and evaluating the results of instrumental studies and parameters characterizing the functions of the human body, simulation scenario performance.
PLO 6 – patient care, solving test problems, situational problems, evaluation of laboratory research results, analysis and evaluation of instrumental research results and parameters characterizing the functions of the human body, simulation scenario performance.
PLO 7 – analysis of prescription letters and their correction, solving test tasks (oral, written, computer), simulation scenario performance
PLO 8 – Case History, solving test tasks (oral, written), oral interview, simulation scenario performance.
PLO 9 – demonstration of practical skills in providing emergency medical care on a dummy in a simulation center, oral interview.
PLO 10 – demonstration of medical manipulation on a dummy, solving test tasks (oral, written), oral interview.
PLO 11 – clinical examination of the patient (solving clinical problems), solving test problems (oral, written), oral interview, medical informational systems use.

Study results evaluation forms and criteria:

- Forms of current control: clinical examination of the patient (solving clinical problems), solving test tasks, evaluating the results of laboratory tests, analyzing and evaluating the results of instrumental tests, demonstrating medical manipulation on a dummy, oral response.
- Form of module control: conducting and evaluating the modular control work (computer testing, written control work to assess theoretical knowledge and practical skills in accordance with the lists determined by the discipline program), independent work (diary), summation with points of current success and issuing a modular evaluation (points per module).
- Final control: credit.

The distribution of grades

Module 1 – Cardiology

Current evaluation and individual work											**Module control**	**Total**
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	Individual work		
10	10	10	10	10	10	10	10	10	10	20	80	200

Module 2 – Gastroenterology

Current evaluation and individual work											**Module control**	**Total**
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	Individual work		
10	10	10	10	10	10	10	10	10	10	20	80	200

Module 3 – Pulmonology

Current evaluation and individual work											**Module control**	**Total**
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	Individual work		
10	10	10	10	10	10	10	10	10	10	20	80	200

Module 4 – Rheumatology

Current evaluation and individual work						**Module control**	**Total**
T1	T2	T3	T4	T5	Individual work		
20	20	20	20	20	20	80	200

Module 5 – Endocrinology

Current evaluation and individual work						**Module control**	**Total**
T1	T2	T3	T4	T5	Individual work		
20	20	20	20	20	20	80	200

Module 6 – Nephrology

Current evaluation and individual work						**Module control**	**Total**
T1	T2	T3	T4	T5	Individual work		
20	20	20	20	20	20	80	200

Module 7 – Hematology

Current evaluation and individual work		**Total**

T1	T2	T3	T4	T5	Individual work	**Module control**	
20	20	20	20	20	20	80	200

Evaluation of some educational work divisions

Division of work	Number	Maximal number of points (total)	Number	Maximal number of points (total)	Number	Maximal number of points (total)
	Module 1		**Module 2**		**Module 3**	
Practical classes	10	100	10	100	10	100
Tests (oral, written, electronic) in topics evaluation	10	5	10	5	10	5
Clinical work with simulation patients (clinical cases solving, simulation scenario performance)		5		5		5
Diaries in Case History	9	20	9	20	9	20
Module control work	1	80	1	80	1	80
Total		**200**		**200**		**200**
	Module 4		**Module 5**		**Module 6**	
Practical classes	5	100	5	100	5	100
Tests (oral, written, electronic) in topics evaluation	5	10	5	10	5	10
Clinical work with simulation patients (clinical cases solving, simulation scenario performance)		10		10		10
Diaries in Case History	4	20	4	20	4	20
Module control work	1	80	1	80	1	80
Total		**200**		**200**		**200**
	Module 7					
Practical classes	5	120				
Tests (oral, written, electronic) in topics evaluation	5	14				
Clinical work with simulation patients (clinical cases solving, simulation scenario performance)		10				
Diaries in Case History	1	10				
Module control work	1	70				
Total		**200**				

Evaluation criteria for module control work

The grade for the module (final module test) is defined as the sum of the grades of the current learning activity (in points), independent work (keeping a diary) and the grade of the module test (in points).

The maximum number of points assigned to students for mastering each module is 200, including 120 points for the current educational activity, 10 points for keeping a diary, and 70 points for the module test.
Current control is carried out at each clinical session according to the specific goals of each topic.
Evaluation of current educational activities:
The weight of each topic within one module must be the same, but may be different for different modules of the same discipline and is determined by the number of topics in the module.
When mastering each topic of the module for the current educational activity, the student is given grades on a traditional 4-point scale, which are then converted into points depending on the number of topics in the module. The program used the following conversion system of the traditional evaluation system

Traditional scale	**Points convertation**							
	Module 1	*Module 2*	*Module 3*	*Module 4*	*Module 5*	*Module 6*	*Module 7*	
"5"	10-12	10-12	10-12	21-24	21-24	21-24	21-24	
"4"	8-9	8-9	8-9	16-20	16-20	16-20	16-20	
"3"	6-7	6-7	6-7	12-15	12-15	12-15	12-15	
"2"	0-5	0-5	0-5	0-11	0-11	0-11	0-11	

The maximum number of current success points that a student can gain while studying the module is 120 points. It is calculated by multiplying the number of points corresponding to the grade "5" by the number of topics in the module.
The minimum number of points of the current success rate, which the student must obtain when studying the module, is equal to 60 points. It is calculated by multiplying the number of points corresponding to the grade "3" by the number of topics in the module.
Evaluation of independent work:
Assessment of independent work of students, which is provided for in the topic along with classroom work, is carried out during the current control of the topic in the corresponding classroom lesson.
The evaluation of topics that are assigned only to independent work and are not included in the topics of classroom training sessions is controlled by the performance of the modular control work on the final modular control. At the same time, keeping a diary is evaluated.
Final modular control:
The final module control is carried out after the study of all topics of the module is completed. It is held in the last lesson after the modular control work. The final module test is conducted using computer and written testing. The form of conducting modular control work should be standardized and include control of theoretical and practical training.
The maximum number of points that a student can receive for a modular control work is 70 points: of them: 30 points for testing, 40 points for written control tasks. The modular control work is considered passed if the student has scored at least 45 points.
All students are required to pass the test control of the tests from the bases and booklets of STEP 2. Mandatory test control is considered completed if at least 80% of the offered tests are successfully solved. Students who have not passed the mandatory test control are not allowed to take the final control of the discipline.

Evaluation criteria for the final control of the discipline

The form of final control in the academic discipline "Internal Medicine" is a credit. The traditional grade "passed" is issued only to students who have passed all modules in the discipline. To convert to ECTS ratings in the range from A to E, the average number of points of the seven modules on which the educational discipline is structured is calculated.
A grade of FX ("failed") in the discipline is assigned to students:
- who failed to pass at least one module in the discipline after completing its study;
- who did not score the minimum number of points for the current educational activity;
- who did not pass the modular test.
Such students have the right to repeat the final module control, no more than 2 times according to the schedule established by the dean's office.
Students who received an FX ("failed") in the discipline, but were able to improve their rating to an E before the assessment, are assigned a final grade. Students who had an F grade but upgraded to FX- must take credit. It is possible to raise the grade on the test by one rating position. Moreover, points for successful improvement are assigned below the lower limit of this rating, in the terms determined by the dean's office from the head of the department for all subjects of the subject "Internal Medicine" in the 6th year.

Students who received a grade of F ("failed") at the end of the discipline (did not complete the study program from at least one module, or did not score the minimum number of points for the current study activity from the module) must undergo repeated training according to an individual study plan.

Assessment criteria for module and final control

The criteria for successful completion of student's assessment may be reaching the minimum thresholds for each planned level of control.

Conversion of the into ECTS and traditional scales:

Total number of points	ECTS grade	Traditional scale
180 – 200	**A**	passed
164-179	**B**	
148-163	**C**	
128-147	**D**	
120-127	**E**	
70-119	**FX**	not passed
0-69	**F**	not passed

6. The program of the course

6.1 Contents of the course

Module 1. Cardiology: Introduction to diagnosis, treatment and prevention of major cardiovascular diseases

Topic 1. Basic issues of cardiology. The role of additional diagnosis tools in the cardiovascular system diseases diagnosis.

The method of a patient clinical analysis as a treatment technology. General principles of syndromes diagnosis and differential diagnosis (definition, diagnostic criteria and diagnosis, etiological classification, differential diagnosis algorithm). The urgency of the CVD problem. Fundamentals of anatomy and physiology of the cardiovascular system. Methods of patient examination in cardiovascular pathology. Symptoms and syndromes of CVD. The role of modern laboratory, radiological and instrumental examination methods in the CVD diagnosis.

Topic 2. Management of patients with heart rhythm and conduction disorders.

Clinical and electrocardiographic diagnosis of the main heart rhythm and heart conduction disorders (supraventricular and ventricular paroxysmal tachycardia, atrial fibrillation and flutter, supraventricular and ventricular extrasystoles; atrioventricular blockades of various degrees, blockades of the legs of the bundle of Hiss; sinus node weakness syndrome; Frederick's syndrome; Wolff-Parkinson syndrome - White). Patient management tactics. Additional laboratory and instrumental examination methods (ECG, daily Holter monitoring, Echo-KG, electrophysiological examination; blood electrolytes). Algorithm of etiological differential diagnosis. The main classes of antiarrhythmic agents, indications for their use, side effects. Cardioversion for arrhythmias: methods, indications, contraindications. Invasive and surgical methods of treatment of arrhythmias. Prevention of thromboembolic events in atrial fibrillation. Medical treatment and cardiac stimulation in heart block. Artificial rhythm drivers. ECG during cardiac stimulation.

Topic 3. Management of a patient with shortness of breath. Management of patients with chronic heart failure

Differential diagnosis of shortness of breath and dyspnea. The main diseases and conditions accompanied by shortness of breath: heart failure with a preserved and reduced left ventricular ejection fraction, respiratory failure; pathology of pulmonary vessels, in particular, pulmonary artery thromboembolism and diseases of the chest or respiratory muscles; anemia; hyperventilation syndrome in neuroses and neurocirculatory dystonia; damage to the respiratory center in organic diseases of the brain. Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental examination methods (standard ECG and ECG with physical load, echocardiography, daily Holter monitoring, radiography and CT of the lungs and heart, functional respiratory tests, laboratory biomarkers).. Algorithm of differential diagnosis. Patient management tactics depending on the genesis of shortness of breath. . Non-drug and drug treatment of the main diseases accompanied by shortness of breath.

Definition and diagnosis of heart failure. Classification of heart failure. Algorithm of etiological differential diagnosis. Diagnostic and differential-diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods (X-ray OGK, ECG, Echo-KG, coronary angiography, blood natriuretic peptides level). Patient management tactics depending on the genesis, variant, stage and functional class of heart failure. Modern principles of drug (diuretics, neurohumoral modulators) and non-drug, including surgical (resynchronization therapy, artificial heart, transplantation) treatment of chronic heart failure. Primary and secondary prevention. Forecast and performance.

Topic 4. Management of a patient with cardiomegaly. Management of a patient with myocardiopathies.

Diagnosis and differential diagnosis of cardiomegaly (primary and secondary pathologies of the pericardium; primary, secondary and combined pathologies of the myocardium). Pericarditis. Myocarditis. Cardiomyopathies (dilated, hypertrophic, restrictive, arrhythmogenic dysplasia of the right

ventricle): clinical manifestations, diagnosis (ECG, echocardiography, MRI, myocardial biopsy). Patient management tactics. Non-drug, drug and surgical treatment.

Definition, classification, diagnostic criteria of pulmonary heart. The main diseases and conditions accompanied by pulmonary hypertension: idiopathic, hereditary, associated with taking drugs or toxins, with connective tissue diseases (systemic lupus erythematosus, systemic scleroderma), HIV infection, portal hypertension (cirrhosis of the liver), congenital heart defects in the stage Eisenmeger's syndrome, acquired heart defects (mitral stenosis); associated with lung disease/hypoxia (chronic obstructive pulmonary disease), with diseases limiting the movement of the chest (Bekhterev's disease, kyphosis, kyphoscoliosis); with pulmonary embolism and chronic post-thromboembolic pulmonary hypertension. Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods. Algorithm of differential diagnosis. Patient management tactics. Non-drug and drug treatment of the main diseases accompanied by pulmonary hypertension. Primary and secondary prevention. Forecast and performance.

Topic 5. Management of patients with heart murmurs and defects.

Diagnosis and differential diagnosis of extracardiac and cardiac, functional and organic, systolic, diastolic and systolic-diastolic murmurs. The main diseases and conditions accompanied by systolic and/or diastolic heart murmurs: congenital heart defects (ventricular septal defect, atrial septal defect, patent ductus arteriosus, coarctation of the aorta); acquired heart defects (mitral stenosis, mitral valve insufficiency: primary and secondary, mitral valve prolapse, aortic valve stenosis, aortic valve insufficiency, tricuspid valve insufficiency: primary and secondary, hypertrophic cardiomyopathy). Algorithm of differential diagnosis depending on the type and localization of noise. Etiological differential diagnosis of noise or heart disease. The differential diagnostic value of clinical manifestations and data from additional laboratory and instrumental research methods (ECG, echocardiography, X-ray CG). Patient management tactics depending on the causes of heart murmur, severity of cardiomegaly, presence of heart failure and other complications. Non-drug, drug and surgical treatment. Indications for surgical treatment. Congenital heart defects in adults: features of clinical manifestations, diagnostic methods, approaches to treatment.

Topic 6. Management of patients with arterial hypertension.

Definition, diagnosis and classification of arterial hypertension. The main diseases and conditions accompanied by arterial hypertension: primary (essential, hypertensive disease) and secondary arterial hypertension, in particular, renal (renovascular, renoparenchymatous); endocrine (itsenko-Cushing syndrome and disease, pheochromocytoma, primary hyperaldosteronism, thyrotoxicosis); coarctation of the aorta, isolated systolic arterial hypertension, arterial hypertension during pregnancy. Algorithm of differential diagnosis. Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods. Patient management tactics. Non-drug and drug treatment of the main diseases accompanied by arterial hypertension. Principles of non-drug and drug treatment of hypertension. Cardiovascular risk stratification. Therapeutic algorithms for arterial hypertension, main and additional classes of antihypertensive drugs. Value of combined therapy of arterial hypertension. Peculiarities of managing hypertension in pregnant women. Side effects of hypotensive agents. Primary and secondary prevention. Forecast and performance. Hypertensive crises, peculiarities of treatment tactics. Hypotensive conditions (asymptomatic arterial hypotension, vegetative-vascular dystonia, fainting, collapse, shock. Differential diagnosis of syncopal episodes: reflex syncope, orthostatic hypotension, cardiac syncope. Drawing up an examination plan and patient management tactics. Laboratory and instrumental methods of additional examination. Vasopressor and inotropic agents.

Topic 7. Primary and secondary prevention of atherosclerotic cardiovascular diseases

Cardiovascular mortality as a problem of atherothrombosis. Concept of cardiovascular continuum and general cardiovascular risk, approaches to its assessment. Risk factors of atherosclerosis and its complications. Cardiometabolic syndrome as a civilizational problem. Healthy lifestyle, early identification of risk factors and their elimination as the basis of primary prevention of cardiovascular diseases and cardiovascular mortality. Definition, etiopathogenesis, morphological and clinical parallels and clinical classification of coronary heart disease, features of the clinical course and their diagnosis. Timely diagnosis and adequate non-drug and drug antiatherosclerotic and antithrombotic therapy as the basis of secondary prevention of atherosclerotic cardiovascular diseases and mortality.

Topic 8. Management of patients with acute pain in the chest and in the region of the heart (acute conditions).

The main diseases and conditions accompanied by acute chest pain: diseases of the cardiovascular system (acute coronary syndrome: unstable angina, myocardial infarction; acute pericarditis, acute myocarditis, coronaryitis, aortitis, aortic dissection, pulmonary embolism); respiratory diseases (pleurisy, pneumothorax); diseases of the musculoskeletal system (myositis, costochondritis); diseases of the nervous system (shingles, intercostal neuralgia). Concept of acute coronary syndrome, acute myocardial infarction, clinical, electrocardiographic and serological diagnostic criteria. Tactics of reperfusion therapy in acute coronary syndromes. Principles of medical support for acute coronary syndromes. Algorithm of differential diagnosis of acute heart pain according to the LITIH-↑,↓ scheme. The differential diagnostic value of clinical manifestations and data from additional laboratory and instrumental research methods (ECG, echocardiography, radiography of OGK, CT angiography of the lungs, biomarker of myocardial necrosis - troponin, D-dimer). Diagnosis and treatment of PE, aortic dissection, acute pericarditis and pneumothorax.

Topic 9. Management of patients with chronic chest and heart pain (chronic conditions).

The main diseases and conditions accompanied by chronic pain in the chest: diseases of the cardiovascular system (ischemic heart disease, in particular, stable angina pectoris; stenosis of the mouth of the aorta, hypertrophic cardiomyopathy, neurocirculatory dystonia); diseases of the digestive system (gastroesophageal reflux disease, cardiospasm, esophageal spasm, hernia of the esophageal opening of the diaphragm, peptic ulcer of the stomach and duodenum); diseases of the musculoskeletal system (osteochondrosis of the thoracic spine); panic attack syndrome. Typical and atypical angina pectoris, diagnostic criteria. Algorithm of differential diagnosis of chronic heart pain according to the LITIKH-↑,↓ scheme. Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods (ECG with physical load, daily Holter monitoring, stress-Echo-KG, coronary angiography in angina pectoris). Differential diagnosis of heart pain in chronic diseases of the cardiovascular system (stenokar syndrome effects in hypertrophic cardiomyopathy, aortic stenosis), digestive, nervous, musculoskeletal system. Tactics of management of patients with coronary artery disease, angina pectoris depending on the functional class. Endovascular and surgical methods of treatment of angina pectoris. Non-drug and drug treatment of the main diseases accompanied by chronic chest pain.

Topic 10. Management of patients with urgent conditions in cardiology.

Diagnosis, differential diagnosis and emergency care in paroxysmal tachycardia; paroxysms of atrial fibrillation; attacks of Morgani-Edems-Stokes; stoppage of blood circulation and breathing; with a hypertensive crisis; with acute heart failure (cardiac asthma; edematous lungs); in case of fainting; when collapsing; with cardiogenic shock; with pulmonary embolism.

Final module control.

Module 2. Gastroenterology: Management of patients in gastroenterology clinic

Topic 1. Basic principles in gastroenterology. Management of patients with gastric dyspepsia and diseases of the gastroduodenal zone (functional dyspepsia, chronic gastritis, peptic ulcer disease).

Definition, organic and functional dyspepsia, main causes and differential diagnosis. Red flag symptoms. Investigation plan, additional instrumental and laboratory methods of examination (upper endoscopy, ultrasound, general and biochemical analyses). Special examination methods (breathing tests, pH-metry, video capsule endoscopy, x-ray methods). Patients management tactics depending on the underlying cause. Modern standards of treatment. Primary and secondary prevention. Prognosis and work capacity.

Topic 2. Management of a patient with heartburn.

The role of gastroesophageal reflux in the development of esophagitis and Barrett's esophagus. Classification. Erosive and non-erosive GERD. Drawing up an examination plan, PPI test, additional instrumental examination methods (x-ray, upper endoscopy, biopsy, ultrasound, general and biochemical analyses). Long-term conservative, surgical and endoscopic treatment.

Topic 3. Management of a patient with dysphagia.

Differential diagnosis of dysphagia. Red flag symptoms. Drawing up an examination plan, additional instrumental and laboratory methods of examination (x-ray, upper endoscopy, biopsy, ultrasound, general and biochemical analyses). Patient management tactics depending on the cause. Conservative and surgical treatment.

Topic 4. Management of patients with diseases of the biliary system (biliary dysfunction, chronic noncalculous cholecystitis, gallstone disease).

The importance of infection, motility disorders and dyscholia in the development of chronic cholecystitis, cholangitis and gallstone disease. Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods. Algorithm of differential diagnosis. Drawing up an examination plan, the role of instrumental and laboratory methods of examination (ultrasound, endosonography, CT, liver tests. Management tactics and indications for surgical treatment. Primary and secondary prevention. Prognosis and work capacity.

Topic 5. Management of a patient with jaundice and hepatomegaly.

The main diseases and conditions accompanied by jaundice: chronic hepatitis, cirrhosis and liver cancer, hemolytic anemia, gallstone disease, cancer of the head of the pancreas, cancer of the nipple, benign hyperbilirubinemia. Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods. Algorithm of differential diagnosis. Drawing up an examination plan, the role of instrumental and laboratory methods of examination (ultrasound, endosonography, CT, liver tests, viral markers). Patient management tactics depending on the cause, differentiated therapy. Modern standards of treatment. Primary and secondary prevention. Prognosis and work capacity.

Topic 6. Metabolic diseases in gastroenterology.

Differential diagnosis of metabolically associated fatty liver disease (nonalcoholic fatty liver disease). Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods. Algorithm of differential diagnosis. Drawing up an examination plan, the role of instrumental and laboratory methods of examination (ultrasound, endosonography, CT, liver tests, viral markers). Patient management tactics depending on the cause, differentiated therapy. Hepatoprotectors and antiviral therapy. Modern standards of treatment. Indications for endoscopic and surgical treatment (shunt operations, liver transplantation). Primary and secondary prevention. Prognosis and work capacity.

Topic 7. Management of a patient with portal hypertension and ascites

Differential diagnosis of hepato-lienal syndrome and portal hypertension. Differential diagnosis of conditions leading to the development of hepatic encephalopathy. Stages of hepatic encephalopathy. Emergency care for hepatic encephalopathy. The main diseases and conditions leading to the development of portal hypertension and ascites: cirrhosis and liver tumors, right ventricular heart failure, including with constrictive pericarditis; nephrotic syndrome, carcinomatosis of the peritoneum, thrombosis of hepatic veins, thrombosis of the portal vein or its branches and thrombosis, stenosis, obliteration of the inferior vena cava at the level or above the hepatic veins, etc. Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods. Algorithm of differential diagnosis. Drawing up an examination plan, the role of instrumental and laboratory examination methods (ultrasound, dopplerography, CT, liver tests, viral markers). Patient management tactics depending on the cause, differentiated therapy. Modern standards of treatment. Principles of prescribing diuretics. Indications for laparocentesis, surgical treatment. Primary and secondary prevention. Prognosis and work capacity.

Topic 8. Management of a patient with abdominal pain (including chronic pancreatitis).

Differential diagnosis of chronic abdominal pain. Drawing up an examination plan, additional laboratory and instrumental examination methods (X-rays of the gastrointestinal tract, upper and lower endoscopy, ultrasound, general and biochemical analyses). Patient management tactics depending on the cause. Conservative and surgical treatment.

Topic 9. Management of a patient with chronic diarrhea and constipation syndromes.

Differential diagnosis of diarrheal syndrome. Secretory, exudative, dysmotor and functional diarrhea. The main coprological syndromes. Syndromes of malabsorption and maldigestion. Diagnostics for constipation, diarrhea, gastrointestinal bleeding. Constipation in intestinal diseases, intestinal obstruction, anorectal diseases, endocrine and metabolic disorders, neurogenic and psychogenic disorders, nutritional disorders, situational and drug-induced constipation. Management of patients with colonopathies (irritable bowel syndrome, chronic non-ulcerative colitis), immune-inflammatory bowel diseases (ulcerative colitis, Crohn's disease).
Investigation plan, the role of radiological, instrumental and functional examination methods (passage through the small intestine, irrigoscopy, colonoscopy, video capsule endoscopy, breathing tests, stool tests, fecal elastase). Patient management tactics depending on the cause, differentiated therapy. Modern standards of treatment. Primary and secondary prevention. Prognosis and work capacity.

Topic 10. Management of patients with emergency conditions in gastroenterology.

Differential diagnosis of conditions leading to the development of hepatic encephalopathy. Stages of hepatic encephalopathy. Emergency care for hepatic encephalopathy. Acute arterial esophageal bleeding

in peptic ulcers and esophageal erosions, venous bleeding in esophageal varices. Management of a patient with severe pain and dyspeptic syndromes. Emergency care in biliary colic.
Final modular control.

Module 3. Pulmonology. Management of patients in a pulmonary clinic

Topic 1. Basic questions of pulmonology and phthisiology. Modern instrumental and laboratory diagnostic methods in pulmonology and phthisiology.

Main symptoms and syndromes in pulmonology and phthisiology. Pulmonary and respiratory failure. Definition of basic concepts. Analysis of modern instrumental and laboratory diagnostic methods in pulmonology and phthisiology, assessment of their informative value. Analysis of methods of functional examination in the pathology of the broncho-pulmonary system. Work in the office of functional diagnostics. Pulmonary and respiratory insufficiency: definition of terms, main causes of occurrence, role of external respiratory function research and other examination methods.
Modern classification of tuberculosis. Pulmonary tuberculosis and its variants.

Topic 2. Management of patients with pulmonary infiltrate (community acquired pneumonia).

International consensuses and local normative documents information on the etiopathogenesis and classification of pneumonia, evaluation of its severity according to international scales (PORT, CRB-65). Examination plan, the role of instrumental (x-ray) and laboratory examination methods. Types and variants of community acquired pneumonia (acute, protracted, granular, focal, interstitial, pneumonia in persons with immune disorders, aspiration). The principles of nosocomial pneumonias treatment, empiric etiological (antibacterial) treatment depending on the possible causative agent. Characteristics of the main antibiotics groups and their pharmacodynamics. Antibiotics resistance and its prevention. Means of pathogenetic effect in the treatment of pneumonia (pharmacotherapy and non-pharmacotherapy).

Topic 3. Management of patients with pulmonary infiltrate (continued). Management of patients with hospital acquired pneumonia.

Features of the pathogenesis and course of pneumonia associated with SARS COV-2 infection, their classification. Diagnostic process, assessment of inflammatory activity and the homeostasis system features. Management of patients with pneumonia associated with SARS COV-2 infection: antiviral and antibacterial therapy, the role of anticoagulant therapy and agents affecting endothelial dysfunction, the use of special anti-inflammatory therapy (anticytokine drugs), the role of oxygen therapy. Nosocomial pneumonia: features of etiopathogenesis, classification and course. Risk factors for the presence of polyresistant strains of microorganisms. Diagnostic algorithm, Modified Clinical Pulmonary Infection Assessment Scale (CPIS). The choice of etiological treatment tactics depending on possible antibiotic resistance. Means of pathogenetic therapy hospital-acquired pneumonia.

Topic 4. Differential diagnosis of pulmonary infiltrates.

Fungal respiratory diseases. Candidiasis: diagnosis, clinical course features, treatment tactics. Aspergillosis: forms, features of clinical manifestations, diagnostic algorithms, principles of treatment. Differential diagnostic algorithms in pulmonary infiltrates. Informational value of various diagnostic methods (radiological, instrumental, laboratory).

Topic 5. Differential diagnosis of pleural effusion. Management of patients with pleurisy.

Definition of concepts and diagnostic criteria of pleural effusion. Informational value of clinical, instrumental (radiological, USD), laboratory (general clinical, biochemical and immunological) methods of examination, study of pleural punctate. Tactics of diagnostic pleural puncture. Analysis of the differential diagnosis algorithm in the presence of pleural effusion. Dry pleurisy: features of the course and clinical manifestations, examination plan, treatment tactics. Application of non-pharmacotherapy effects. Exudative pleurisy: main etiopathogenetic factors, features of clinical manifestations, plan of diagnostic measures. Management of patients, differentiated etiological and pathogenetic therapy. Relative and absolute indications for thoracocentesis. Clinical analysis of patients (clinical situational problems) with pneumonia and/or pleurisy.

Topic 6. Management of patients with acute purulent and destructive processes in the lungs. Differential diagnosis in case of a cavity in the lungs.

General characteristics of purulent-destructive processes in the lungs, main nosological forms, definition of concepts, classification. The main etiological factors and leading pathogenetic mechanisms. Lung abscess: phases, their characteristics, diagnostic algorithm. Tactics of conservative management: features of etiological and pathogenetic treatment. Complications and their prevention. Indications for surgical treatment. Lungs gangrene. Development and critical manifestations, patient management tactics. Differential diagnosis algorithm for cavity in the lung parenchyma syndrome.

Topic 7. Management of patients with chronic purulent-destructive processes in the lungs. Differential diagnosis of hemoptysis.

Bronchiectatic disease, primary and secondary bronchiectases: definition. Mechanisms of primary bronchiectases development. Classification of bronchiectasis disease, plan of diagnostic measures, significance of instrumental (bronchoscopy, bronchography, CT, etc.) and laboratory (general clinical, biochemical studies, sputum analysis) methods of monitoring. The main clinical manifestations, complications and their prevention. Tactics of conservative management in exacerbation and remission phases. Differential diagnosis algorithm for hemoptysis. Analysis of some nosologies that may be accompanied by hemoptysis (Goodpasture's syndrome, Wegener's granulomatosis, idiopathic hemosiderosis of the lungs). Clinical examination of a patient (situational problems) with purulent-destructive processes in the bronchopulmonary system.

Topic 8. Management of patients with asthma. Differential diagnosis of asthma attack.

Data of the international consensus (GINA) and local regulatory documents on etiopathogenesis, classification and phenotypes of bronchial asthma. International scales for assessing the course of asthma. Basic principles of diagnosis and treatment in bronchial asthma depending on its form. Groups of anti-inflammatory and broncholytic agents and their pharmacodynamics. Step-wise controller treatment of patients according to GINA. The role of MART therapy in the management of patients with bronchial asthma. Differential diagnosis of an asthma attack. Bronchial asthma attack: mechanisms of development, algorithm of medical care taking into account its severity. Asthmatic status (life threatening asthma): definition of concepts, pathogenetic mechanisms of development, classification, features according to severity. Pathogenetic justification of the main treatment measures.

Topic 9. Differential diagnosis in bronchial obstruction syndrome. Management of patients with chronic obstructive pulmonary disease (COPD).

Clinical and instrumental methods of broncho-obstructive syndrome confirmation, assessment of its reversibility. Differential diagnosis algorithm for broncho-obstructive syndrome. Analysis of some nosologies, which are accompanied by broncho-obstruction syndrome (cystic fibrosis, asthmatic variant of nodular periarteritis, etc.). COPD: data from the International Consensus (GOLD) and domestic regulatory documents on etiopathogenesis and classification. Assessment of COPD severity according to international scales (COPD Assessment Test, Borg scale, modified scale of the Medical Research Council). Systemic manifestations in COPD: definition of concepts, causes of development. Tactics of COPD patients management depending on the defined group (A, B, C, D). Analysis of the differential diagnosis algorithm for prolonged cough. Clinical analysis of patients (situational problems) with broncho-obstructive syndrome (BA, COPD).

Topic 10. Disseminated processes in the lungs: differential diagnosis, features of patient management.

Definition of concepts, basic nosological forms. Informative value of instrumental and laboratory methods of examination in pulmonary dissemination syndrome. Examination plan. Analysis of some nosological forms that may be accompanied by the syndrome of pulmonary dissemination.
Alveolitis (exogenous allergic, toxic, idiopathic): peculiarities of etiopathogenesis, clinical manifestations and treatment of patients. Sarcoidosis: etiopathogenesis, classification, clinical forms, diagnostic methods, principles of patient management. Disseminated processes of a tumor nature: peculiarities of diagnosis and management of patients. Lung lesions in collagenoses: main clinical options. Differential diagnosis algorithm for pulmonary dissemination syndrome.
Final modular control.

Module 4. Rheumatology: Management of patients in rheumatology clinic

Topic 1. Management of patients with joint syndrome.

The differential diagnosis of joint syndrome. The examination plan, additional laboratory and instrumental examination (rheumatic tests, autoimmune markers, X-ray, arthroscopy, echocardiography, MRI). Clinical management of patients depending on the underlying cause. The existing treatment standards. Efficiency and disadvantages of NSAIDs. Indications and contraindications to the use of steroids. Primary and secondary prevention. Prognosis and occupational capability.

Topic 2. Management of patients with joint syndrome.

The differential diagnosis of arthritis and arthrosis. The examination plan, additional laboratory and instrumental examination (autoimmune markers, X-ray, arthroscopy, MRI). Clinical management of patients. The existing treatment standards. The side effects of NSAIDs and steroids. Intraarticular use of drugs. Surgical treatment. Primary and secondary prevention. Prognosis and occupational capability.

Topic 3. Management of patients with arthralgia / myalgia.

The differential diagnosis of arthralgia and myalgia. The examination plan, additional laboratory and instrumental examination (autoimmune markers, biopsy, radiography, echocardiography). Clinical management of patients depending on the underlying cause. Primary and secondary prevention. Prognosis and occupational capability.

Topic 4. Management of patients with systemic vasculitis.

Differential diagnosis of systemic vasculitis (periarteriitis nodosa, Wegener's granulomatosis, Horton's disease, nonspecific aortoarteriitis (Takayasu's disease), hemorrhagic vasculitis (Schonlein-Henoch disease), Goodpasture's syndrome, etc.). Clinical diagnosis of systemic vasculitis. Instrumental and laboratory diagnosis. Management of patients.

Topic 5. Management of patients with fever of unknown origin.

The differential diagnosis of conditions accompanied by the presence of prolonged fever. Existing diagnostic algorithms. The plan examination (radiography, bronchography, CT, bronchoscopy, ultrasound, general and biochemical tests, blood cultures, urine, bile, phlegm). Clinical management of patients depending on the cause, differentiated therapy. Indications for consulting other professionals (TB, oncologist, rheumatologist, infectious diseases, septologist). Pharmacological and non-pharmacological treatment.
Final module control

Module 5. Endocrinology. Management of patients in endocrinology clinic

Topic 1. Management of a patient with diabetes mellitus and diabetes insipidus.

Diabetes mellitus: diagnostic criteria, clinical manifestations, general approaches and goals of treatment. Diagnostic criteria for diabetes and other categories of hyperglycemia. Indications and rules for the glucose tolerance test. Diagnostic value of determination of glycated hemoglobin, fructosamine, C-peptide, glucosuria, ketonuria. Criteria for compensation of metabolism, achievement of normoglycemia. Principles of treatment of pregnant women with diabetes. The main methods of treatment of diabetes, diet therapy, dosed physical activity, serum-lowering pharmacotherapy, teaching the patient self-control. Peculiarities of emergency and planned surgical interventions in patients with diabetes. Regime of insulin therapy: traditional and intensified insulin therapy. Complications of insulin therapy: hypoglycemic states, insulin allergy, post-injection lipodystrophy, insulin resistance, chronic insulin overdose (Somoji syndrome), insulin edema. Clinic, diagnosis and treatment of diabetes insipidus.

Topic 2. Management of a patient with uncompensated diabetes mellitus and complications of diabetes.

Complications of diabetes. Diabetic angiopathies and neuropathies. Classification. Diabetic nephropathy, stages of development, diagnosis, differential diagnosis, treatment and prevention. Diabetic retinopathy: stages of the process, diagnosis, prevention, diagnosis, treatment. Diabetic neuropathy, classification, diagnosis and treatment. Diabetic foot: classification, diagnosis and treatment. Ketoacidotic states of diabetes. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment. Lactic acidosis.

Topic 3. Management of a patient with thyroid pathology.

Thyroid gland size determination. Definition of goiter. The concept of endemic non-toxic and nodular forms of goiter. Diseases accompanied by thyrotoxicosis. Clinical differences of nodular toxic goiter. Justification of the diagnosis of thyrotoxicosis. Medicinal and surgical treatment of toxic goiter, use of

131-iodine for therapeutic purposes. Differential diagnosis of thyroiditis with acute and subacute clinical course. Chronic thyroiditis. Rationale for the diagnosis of autoimmune thyroiditis. Nodular forms of goiter. Monitoring of patients with thyroid nodules. Pathomorphological classification of tumors of the thyroid gland. Justification of the diagnosis of thyroid cancer.

Topic 4. Management of a patient with adrenal gland pathology.

Classification, diagnostic criteria and differential diagnosis of hypercorticism (Cushing's disease and syndrome). Hyperaldosteronism (Kon's syndrome): diagnostic criteria and algorithms, phenotypes, approaches to conservative and surgical treatment. Clinic, diagnosis and treatment of pheochromocytoma.

Topic 5. Management of a patient with metabolic syndrome.

Definition, classification, diagnostic criteria, relevance of the problem all over the world. Drawing up an examination plan, the role of instrumental and laboratory methods of examination, patient management tactics depending on glycemia, body mass index, blood pressure level. Drug and non-drug treatment. Standards of treatment.
Final module control.

Module 6. Nephrology. Management of patients in nephrology clinic

1. Management of urinary syndrome.

Identification and characterization of components of urinary symptoms. The differential diagnosis of hematuria, leukocyturia, proteinuria. The plan survey, the role of radiology, laboratory and instrumental methods of examination (ultrasound, pyelography, X-ray, CT, general and biochemical tests, Nechiporenko urine test). Clinical management of patients depending on the cause, differentiated therapy. Pharmacological and non-pharmacological treatment. The existing treatment standards. Primary and secondary prevention. Prognosis and occupational capability.

2. Management of patients with edema.

The differential diagnosis of edema of different genesis (heart, kidney, nutritional, etc.). The plan survey, the role of instrumental and laboratory examination methods (ultrasound, X-ray, ECG, general and biochemical tests, urine tests). Clinical management of patients depending on the cause, differentiated therapy. Pharmacological and non-pharmacological treatment. Advantages and disadvantages of diuretic therapy. The existing treatment standards. Primary and secondary prevention. Prognosis and occupational capability.

3. Management of chronic renal failure.

Definition and classification. Etiological factors. The term "chronic kidney disease". Classification. Pathogenesis of lesions and systems, their clinical manifestations. Clinical and laboratory parameters change depending on the stage. Differential treatment at different stages. Hemodialysis, renal transplantation. Indications and contraindications for dialysis, complications. Primary and secondary prevention. Prognosis and occupational capability.

4. Management of renal hypertension.

Classification criteria for diagnosis and differential diagnosis of secondary arterial hypertension renal genesis (at renoparenchymal and renovascular disease). The plan survey, the role of instrumental and laboratory methods. Clinical management of patients, medical and non-pharmacological treatment. The existing treatment standards. Primary and secondary prevention. Prognosis and occupational capability.

5. Management of patients with nephrotic syndrome.

Definition, etiology, pathogenesis of nephrotic syndrome. Clinical manifestations. The plan survey, the role of instrumental and laboratory methods. Criteria for the diagnosis and differential diagnosis. Clinical management of patients, medical and non-pharmacological treatment. The existing treatment standards. Primary and secondary prevention. Prognosis and occupational capability.
Final module control.

Module 7. Hematology. Management of patients in the hematology clinic

Topic 1. Management of a patient with anemia.

Definition, classification, diagnostic criteria and differential diagnosis of iron-deficient, folate- and B12-deficient anemia. The main causes of iron deficiency. Examination plan, the role of laboratory tests in iron-deficiency and B12-deficiency anemias diagnosis. Patient management tactics, non-pharmacotherapy and pharmacotherapy. Indications for blood transfusion. Primary and secondary prevention.

Topic 2. Management of a patient with hematological malignancies and leukemoid reaction.

Definition, main causes, classification. Differential diagnosis of leukemia and leukemoid reaction. Principles of differentiated treatment. Bone marrow transplantation. Supportive therapy. Prognosis and performance.

Topic 3. Management of a patient with splenomegaly.

Differential diagnosis in splenomegaly (acute leukemia, chronic myeloblastic leukemia, hemolytic anemia, erythraemia, other hematological diseases) vs patients with circulatory disorders (general and local); with infectious diseases, with diffuse diseases of the connective tissue, with tumors of the spleen, with cysts, abscesses of the spleen, etc.). Instrumental and laboratory diagnostics. Management of a patient depending on the cause.

Topic 4. Management of a patient with coagulopathy.

Differential diagnosis of coagulopathy (hemophilia A and B, von Willebrand disease, antiphospholipid syndrome, Leiden factor V mutation, protein C and S deficiency, antithrombin III deficiency, etc.). Approach to the patient with thrombocytopenia and thrombocytosis. Clinic. Diagnostics. Additional research methods. Interpretation of the coagulogram. The influence of drugs on hemocoagulation processes. Prevention and treatment of thrombosis and hypocoagulation.

Topic 5. Management of a patient with lymphadenopathy.

The main causes of lymphadenopathy. Differential diagnosis of Hodgkin's and non-Hodgkin's lymphomas, enlargement of lymph nodes in other diseases (tuberculosis, sarcoidosis, metastases, SLE, etc.). Patient management tactics, drug and non-drug treatment. Standards of treatment.

Final module control.

6.2. **Structure of educational discipline**

Names of Modules and Topics	Number of hours			
	Total	including		
		Lectures	Practical	Individual work
11th, 12th semester				
Module 1				
Topic 1. Basic issues of cardiology. The role of additional diagnosis tools in the cardiovascular system diseases diagnosis.	8		6	2
Topic 2. Management of patients with heart rhythm and conduction disorders.	10		6	4
Topic 3. Management of a patient with shortness of breath. Management of patients with chronic heart failure.	8		6	2
Topic 4. Management of a patient with cardiomegaly. Management of a patient with myocardiopathies.	8		6	2
Topic 5. Management of patients with heart murmurs and defects.	10		6	4
Topic 6. Management of patients with arterial hypertension.	10		6	4
Topic 7. Primary and secondary prevention of atherosclerotic cardiovascular diseases.	8		6	2
Topic 8. Management of patients with acute pain in the chest and in the region of the heart (acute conditions).	10		6	4
Topic 9. Management of patients with chronic chest and heart pain (chronic conditions).	10		6	4
Topic 10. Management of patients with urgent conditions in cardiology.	8		4	4
Final Module Control	10		2	8
Total	**100**		**60**	**40**
Module 2. Gastroenterology				
Topic 1. Basic principles in gastroenterology. Management of patients with gastric dyspepsia and diseases of the gastroduodenal zone (functional dyspepsia, chronic gastritis, peptic ulcer disease).	10		6	4
Topic 2. Management of a patient with heartburn.	8		6	2
Topic 3. Management of a patient with dysphagia.	8		6	2
Topic 4. Management of patients with diseases of the biliary system (biliary dysfunction, chronic noncalculous cholecystitis, gallstone disease).	8		6	2
Topic 5. Management of a patient with jaundice and hepatomegaly.	11		6	5
Topic 6. Metabolic diseases in gastroenterology.	10		6	4
Management of a patient with portal hypertension and ascites.	11		6	5
Topic8. Management of a patient with abdominal pain (including chronic pancreatitis).	10		6	4

Topic 9. Management of a patient with chronic diarrhea and constipation syndromes.	10		6	4
Topic 10. Management of patients with emergency conditions in gastroenterology.	8		4	4
Final Module Control	6		2	4
Total	**100**		**60**	**40**
Module 3. Pulmonology				
Topic 1. Basic questions of pulmonology and phthisiology. Modern instrumental and laboratory diagnostic methods in pulmonology and phthisiology.	10		6	4
Topic 2. Management of patients with pulmonary infiltrate (community acquired pneumonia).	10		6	4
Topic 3. Management of patients with pulmonary infiltrate (continued). Management of patients with hospital acquired pneumonia.	10		6	4
Topic 4. Differential diagnosis of pulmonary infiltrates.	10		6	4
Topic 5. Differential diagnosis of pleural effusion. Management of patients with pleurisy.	8		6	2
Topic 6. Management of patients with acute purulent and destructive processes in the lungs. Differential diagnosis in case of a cavity in the lungs.	10		6	4
Topic 7. Management of patients with chronic purulent-destructive processes in the lungs. Differential diagnosis of hemoptysis.	8		6	2
Topic 8. Management of patients with asthma. Differential diagnosis of asthma attack.	10		6	4
Topic 9. Differential diagnosis in bronchial obstruction syndrome. Management of patients with chronic obstructive pulmonary disease (COPD).	10		6	4
Topic 10. Disseminated processes in the lungs: differential diagnosis, features of patient management.	8		4	4
Final Module Control	6		2	4
Total	**100**		**60**	**40**
Module 4. Rheumatology				
Topic 1. Management of patients with joint syndrome.	8		6	2
Topic 2. Management of patients with joint syndrome.	8		6	2
Topic 3. Management of patients with arthralgia / myalgia.	8		6	2
Topic 4. Management of patients with systemic vasculitis.	8		6	2
Topic 5. Management of patients with fever of unknown origin.	6		4	2
Final Module Control	6		2	4
Total	**44**		**30**	**14**
Module 5. Endocrinology				
Topic 1. Management of a patient with diabetes mellitus and diabetes insipidus.	8		6	2
Topic 2. Management of a patient with uncompensated diabetes mellitus and complications of diabetes.	8		6	2
Topic 3. Management of a patient with thyroid pathology.	8		6	2
Topic 4. Management of a patient with adrenal gland pathology.	8		6	2
Topic 5. Management of a patient with metabolic syndrome.	6		4	2
Final Module Control	4		2	2
Total	**42**		**30**	**12**
Module 6. Nephrology				

Topic 1. Management of urinary syndrome.	8		6	2
Topic 2. Management of patients with edema.	10		6	4
Topic 3. Management of chronic renal failure.	10		6	4
Topic 4. Management of renal hypertension.	8		6	2
Topic 5. Management of patients with nephrotic syndrome.	6		4	2
Final Module Control	4		2	2
Total	**46**		**30**	**16**
Module 7. Hematology				
Topic 1. Management of a patient with anemia.	10		6	4
Topic 2. Management of a patient with hematological malignancies and leukemoid reaction.	10		6	4
Topic 3. Management of a patient with splenomegaly.	8		6	2
Topic 4. Management of a patient with coagulopathy.	10		6	4
Topic 5. Management of a patient with lymphadenopathy.	6		4	2
Final Module Control	4		2	2
Total	**48**		**30**	**18**
Total for educational discipline	**480**		**300**	**180**
Including simulation training			**88**	**29%**

6.3. Topics of practical classes

Module 1. Cardiology

№	Topic	Number of hours
1	Initial control. Basic questions: clinical analysis of the patient as a treatment technology. General principles of diagnosis and differential diagnosis of syndromes. The urgency of the CVD problem.	2
2	Fundamentals of anatomy and physiology of the cardiovascular system. Symptoms and CVD syndromes. Method of examination of a patient with cardiac pathology The role of additional examination methods.	2
3	Clinical examination of a cardiac patient (simulation training).	2
4	ECG record and analysis algorithm	2
5	Management of patients with heart rhythm disorders.	2
6	Management of patients with impaired cardiac conduction (simulation training).	2
7	Management of a patient with shortness of breath.	2
8	Management of patients with chronic heart failure (simulation training)..	2
9	Clinical examination of a patient with chronic heart failure.	2
10	Management of a patient with cardiomegaly. Cor pulmonale	2
11	Management of a patient with cardiomyopathies.	2
12	Clinical analysis of a patient with cardiomyopathy.	2
13	Management of patients with heart murmurs.	2
14	Management of patients with heart defects.	2
15	Clinical examination of a patient with heart murmur and defect (simulation training).	2
16	Management of patients with arterial hypertension.	2
17	Principles of optimal antihypertensive therapy.	2
18	Clinical examination of a patient with arterial hypertension (simulation training)..	2

19	Cardiovascular mortality as a problem of atherothrombosis. Concept of cardiovascular continuum and general cardiovascular risk, approaches to its assessment. Risk factors of atherosclerosis and its complications. Cardiometabolic syndrome as a civilizational problem.	2
20	Healthy lifestyle, early identification of risk factors and their elimination as the basis of primary prevention of cardiovascular diseases and cardiovascular mortality.	2
21	Morphological and clinical parallels and clinical classification of coronary heart disease, features of the clinical course and their diagnosis. Diagnosis and non-pharmacological and pharmacotherapy of antiatherosclerotic, antithrombotic therapy as the basis of secondary prevention of atherosclerotic cardiovascular diseases and mortality.	2
22	Management of patients with acute chest pain (simulation training)..	2
23	Management of patients with acute coronary syndrome	2
24	Clinical examination of a patient with myocardial infarction.	2
25	Management of patients with chronic chest pain (simulation training)..	2
26	Management of patients with stable forms of coronary heart disease.	2
27	Clinical examination of a patient with angina or cardiac pain.	2
28	Emergency conditions in cardiology (simulation training).	2
29	Management of patients with syncope	2
30	Module control work. Final module control	2
	TOTAL	**60**
	INCLUDING SIMULATION TRAINING	**16**

Module 2. Gastroenterology

№	Topic	Number of hours
1	Basic issues of gastroenterology. Management of a patient with gastric dyspepsia and diseases of the gastroduodenal zone.	2
2	Management of a patient with functional dyspepsia. Diagnostics of dyspepsia (simulation training).	2
3	Management of a patient with chronic gastritis, peptic ulcer disease	2
4	Management of a patient with heartburn. Differential diagnosis of heartburn and dysphagia (simulation training).	2
5	Management of patients with GERD. Data of laboratory and instrumental research methods. Diagnosis criteria, differential diagnosis	2
6	Management of patients with GERD. Differentiated therapy of GERD. Primary and secondary prevention.	2
7	Management of a patient with dysphagia. Differential diagnosis of dysphagia.	2
8	Management of a patient with dysphagia. Red flag symptoms. Examination plan.	2
9	Management of a patient with esophagitis, including esophageal cancer, diffuse esophageal spasm, achalasia of the cardia, esophageal diverticula etc.	2
10	Management of patients with biliary dysfunction (simulation training).	2
11	Management of patients with biliary dysfunction. Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods in diseases of the biliary system. Algorithm of differential diagnosis.	2
12	Management of a patient with chronic noncalculous cholecystitis, cholelithiasis. Examination plan, the role of instrumental and laboratory methods of examination (ultrasound, endosonography, CT, liver tests, viral markers). Patient management tactics depending on the cause, differentiated therapy. Modern standards of treatment. Primary and secondary prevention. Prognosis and work capacity.	2

13	Management of patients with jaundice and chronic hepatitis. Modern treatment standards. Hepatoprotectors and antiviral therapy (simulation training).	2
14	Management of patients with benign hyperbilirubinemia, cancer of the head of the pancreas, cancer of the nipple. Examination plan, the role of instrumental and laboratory methods of examination (ultrasound, endosonography, CT, liver tests, viral markers). Patient management tactics depending on the cause, differentiated therapy. Modern standards of treatment. Primary and secondary prevention. Forecast and performance.	2
15	Management of patients with cirrhosis and liver cancer Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods. Algorithm of differential diagnosis.	2
16	Management of a patient with portal hypertension and ascites: differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods. Algorithm of differential diagnosis. Examination plan, the role of instrumental and laboratory examination methods (ultrasound, dopplerography, CT, liver tests, viral markers). Patient management tactics depending on the cause, differentiated therapy. Modern standards of treatment .	2
17	Management of a patient with hepatomegaly and hepatolienal syndrome depending on the cause, differentiated therapy. Modern standards of treatment. Indications for endoscopic and surgical treatment (shunt operations, liver transplantation).	2
18	Management of a patient with portal hypertension and ascites: cirrhosis and liver tumors, right ventricular heart failure, incl. with constrictive pericarditis; nephrotic syndrome, carcinomatosis of the peritoneum, thrombosis of hepatic veins, thrombosis of the portal vein or its branches and thrombosis, stenosis, obliteration of the inferior vena cava at the level or above the hepatic veins, etc.	2
19	Management of a patient with hepatic encephalopathy. Stages of hepatic encephalopathy. Examination plan, the role of instrumental and laboratory methods of examination (ultrasound, Doppler, CT, liver biopsy, liver tests, viral markers).	2
20	Management of a patient with portal hypertension and ascites: principles of prescribing diuretics. Indications for laparocentesis, surgical treatment (simulation training). Primary and secondary prevention. Prognosis and work capacity.	2
21	Metabolic-associated diseases in gastroenterology. Differential diagnosis of metabolically associated fatty liver disease (nonalcoholic fatty liver disease). Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods.	2
22	Management of patients with non-alcoholic fatty liver disease. Algorithm of differential diagnosis. Examination plan, the role of instrumental and laboratory methods of examination (ultrasound, endosonography, CT, liver tests, viral markers).	2
23	Management of patients with non-alcoholic fatty liver disease. Primary and secondary prevention of non-alcoholic fatty liver disease. Prognosis and performance.	2
24	Management of a patient with abdominal pain (with chronic pancreatitis). Differential diagnosis of chronic abdominal pain. Examination plan, additional laboratory and instrumental examination methods (X-rays of the gastrointestinal tract, upper and lower endoscopy, ultrasound, general and biochemical analyses) (simulation training).	2
25	Management of a patient with chronic diarrhea syndrome. Differential diagnosis of diarrheal syndrome. Secretory, exudative, dysmotor and functional diarrhea. The main coprological syndromes. Malabsorption syndromes and maldigestion.	2

	Diagnostics for constipation, diarrhea, gastrointestinal bleeding (simulation training).	
26	Management of a patient with constipation in intestinal diseases, intestinal obstruction, anorectal diseases, endocrine and metabolic disorders, neurogenic and psychogenic disorders, nutritional disorders, situational and drug-induced constipation (simulation training).	2
27	Management of patients with colonopathies (irritable bowel syndrome, chronic non-ulcerative colitis), immune-inflammatory bowel diseases (ulcerative colitis, Crohn's disease). Examination plan, the role of radiological, instrumental and functional examination methods (passage through the small intestine, irrigoscopy, colonoscopy, video capsule endoscopy, breathing tests, stool tests, fecal elastase). Modern standards of treatment. Primary and secondary prevention. Prognosis and work capacity.	2
28	Management of a patient with an urgent condition in gastroenterology (in upper gastrointestinal tract). Conservative and surgical treatment (simulation training).	2
29	Management of a patient with severe abdominal pain and dyspeptic syndromes. Emergency care шт biliary colic and hepatic encephalopathy (simulation training).	2
30	Final module control	2
	TOTAL	**60**
	INCLUDING SIMULATION TRAINING	**20**

Module 3. Pulmonology

№	Topic	Number of hours
1	Basic questions of pulmonology. Additional diagnosis tools in pulmonology and phthisiology, assessment of their significance.	2
2	Methods of functional examination in pathology of the broncho-pulmonary system. Work in the office of functional diagnostics.	2
3	Respiratory failure: definition of terms, main causes of occurrence, role of external respiratory function research and other examination methods (simulation training).	2
4	Data from international consensuses and local regulatory documents regarding the etiopathogenesis and classification of pneumonia, evaluation of the severity of the process according to international scales. Patient examination plan, diagnostic criteria.	2
5	Types and variants of community acquired pneumonias (acute, protracted, granular, focal, interstitial, pneumonia in persons with immune disorders, aspiration).	2
6	Management of patients with community-acquired pneumonia. Characteristics of the main groups of antibiotics used in the treatment of nosocomial pneumonias and their pharmacodynamics. Antibiotic resistance and its prevention. Means of pathogenetic effect in the treatment of pneumonia (pharmacotherapy and non-pharmacological therapy) (simulation training).	2
7	Features of the pathogenesis and course of pneumonia associated with SARS COV-2 infection, their classification. Peculiarities of the diagnostic process, assessment of inflammatory activity and the homeostasis system.	2
8	Management of patients with pneumonia associated with SARS COV-2 infection: antiviral and antibacterial therapy, the role of anticoagulant therapy and agents affecting endothelial dysfunction, the use of special anti-	2

	inflammatory therapy (anticytokine drugs), the role of oxygen therapy (simulation training).	
9	Management of patients with hospital-acquired pneumonia: features of etiopathogenesis, classification and course. Diagnostic algorithm. Risk factors for polyresistant strains of microorganisms. Etiological treatment tactics depending on possible antibiotic resistance. Means of pathogenetic influence in hospital-acquired pneumonia (simulation training).	2
10	Fungal lesions of the respiratory system, variants. Candidiasis: diagnosis, clinical course features, treatment tactics.	2
11	Aspergillosis: forms, features of clinical manifestatios, diagnostic algorithm, principles of treatment.	2
12	Differential diagnosis algorithm for pulmonary infiltrates. Informational value of various diagnostic methods (radiological, instrumental, laboratory).	2
13	Management of patients with pleural effusion: diagnostic criteria for the presence of pleural effusion. Informational value of clinical, instrumental (radiological, USO), laboratory (general clinical, biochemical and immunological) methods of examination, study of pleural punctate. Algorithm of differential diagnosis in the presence of pleural effusion (simulation training).	2
14	Management of patients with dry and exudative pleurisy: features of clinical course, examination plan, differentiated etiological and pathogenetic therapy. Indications for pleural puncture. Non-pharmacological therapy features	2
15	Clinical analysis of patients (clinical situations) with pneumonia and/or pleurisy.	2
16	General characteristics of purulent and destructive processes in the lungs, main nosological forms, classification. The main etiological factors and pathogenetic mechanisms of their development .	2
17	Management of patients with lung abscess and gangrene: diagnostic algorithm, tactics of conservative treatment. Complications and their prevention. Indications for surgical treatment.	2
18	Differential diagnosis algorithm in cavity in the lung parenchyma syndrome.	2
19	Management of patients with primary and secondary bronchiectases. Mechanisms of primary bronchiectasis development. Classification of bronchiectases, plan of examination. The main clinical manifestations, complications and their prevention. Tactics of conservative management of patients with bronchiectasis in exacerbation and remission.	2
20	Differential diagnosis algorithm for hemoptysis. Analysis of some diseases that may be accompanied by hemoptysis (Goodpasture's syndrome, Wegener's granulomatosis, idiopathic hemosiderosis of the lungs) (simulation training).	2
21	Clinical examination of a patient (situational problems) with purulent-destructive processes in the bronchopulmonary system (simulation training).	2
22	The data of the international consensus (GINA) and local normative documents in etiopathogenesis, features of development, classification and phenotypes of bronchial asthma. Basic principles of diagnosis and treatment of patients with bronchial asthma. Step-by-step basic treatment of patients according to GINA in patient management (simulation training).	2
23	Differential diagnosis algorithm in case of asthma attack. The main causes of an asthma attack and emergency care depending on the cause (simulation training).	2
24	Management of patients with bronchial asthma attack and life-threatening	2

	asthma (status astmaticus).	
25	Differential diagnosis in broncho-obstructive syndrome. Analysis of some nosologies, which are accompanied by broncho-obstruction syndrome (cystic fibrosis, asthmatic variant of nodular periarteritis, etc.).	2
26	Management of patients with chronic obstructive pulmonary disease (COPD). Clinical and instrumental methods of confirming the presence of bronchospasm bstructive syndrome, assessment of its reversibility. International consensus (GOLD) and domestic regulatory documents on etiopathogenesis and classification of COPD. Systemic manifestations in COPD: definition of concepts, causes of development. Tactics of managing patients with COPD depending on the defined group (A, B, C, D).	2
27	Clinical analysis of patients (situational problems) with bronchial obstruction syndrome (asthma, COPD) .	2
28	Management of patients with alveolitis (exogenous allergic, toxic, idiopathic): peculiarities of etiopathogenesis, clinical manifestations and treatment of patients. Management of patients with sarcoidosis: etiopathogenesis, classification, clinical forms, diagnostic methods, principles of patient management.	2
29	Algorithm of differential diagnosis in pulmonary dissemination syndrome. Definition of concepts, basic nosological forms. Informative value of instrumental and laboratory methods of examination in pulmonary dissemination syndrome. Examination plan (simulation training).	2
30	Final module control	2
	TOTAL	**60**
	INCLUDING SIMULATION TRAINING	**20**

Module 4. Rheumatology

№	Topic	Number of hours
1	Introduction to rheumatology.	2
2	Investigation methods in rheumatology.	2
3	Management of patients with rheumatoid arthritis (simulation training).	2
4	Management of patients with systemic lupus erythematosus (simulation training).	2
5	Management of patients with gout.	2
6	Management of patients with deforming osteoarthritis.	2
7	Management of patients with systemic scleroderma .	2
8	Management of patients with dermatomyositis and polymyositis	2
9	Management of patients with seronegative arthritis and spondyloarthropathies	2
10	Management of patients with polymyalgia rheumatica and fibromyalgia	2
11	Management of patients with vasculitis of large vessels (giant cell arteritis, Takayasu disease, Kawasaki disease)	2
12	Management of patients with ANCA-associated vasculitis	2
13	Management of patients with antiphospholipid antybody syndrome	2
14	Diagnostic algorithms in fever of unknown origin (simulation training)	2
15	Management of patients with systemic connective tissue diseases (simulation training)	2
	TOTAL	**30**
	INCLUDING SIMULATION TRAINING	**8**

Module 5. Endocrinology

№	Topic	Number of hours
1	Diabetes mellitus: classification, diagnostic criteria, clinical manifestations, general approaches and goals of treatment. Principles of treatment of pregnant women with diabetes	2
2	The main methods of diabetes treatment, diet, physical activity, sugar-lowering pharmacotherapy, education of the patient in self-control. Features of emergency and planned surgical interventions in patients with diabetes .	2
3	Modes of insulin therapy: traditional and intensified insulin therapy. Complications of insulin therapy. Clinic, diagnosis and treatment of diabetes insipidus.	2
4	Complications of diabetes. Diabetic angiopathies and neuropathies, diabetic nephropathy, diabetic retinopathy, diabetic neuropathy, diabetic foot.	2
5	Ketoacidotic states in diabetes.	2
6	Hyperosmolar conditions in diabetes. Lactic acidosis.	2
7	Treatment of patients with type 1 and type 2 diabetes (simulation training).	
8	Semiotics of thyroid diseases. Treatment of patients with goiter (simulation training).	2
9	Diseases accompanied by thyrotoxicosis. Nodular toxic goiter. Medicinal and surgical treatment of toxic goiter, use of 131-iodine for therapeutic purposes.	2
10	Management of patients with hypothyroidism. Differential diagnosis of thyroiditis. Rationale for the diagnosis of autoimmune thyroiditis. Nodular forms of goiter. Monitoring of patients with thyroid nodules. Principles of diagnosis and treatment of thyroid cancer.	2
11	Classification, diagnostic criteria and differential diagnosis of hypo- and hypercorticism (Adisson's, Cushing's disease and syndrome) (simulation training).	2
12	Hyperaldosteronism (Kon's syndrome): diagnostic criteria and algorithms, phenotypes, approaches to conservative and surgical treatment. Clinic, diagnosis and treatment of pheochromocytoma.	2
13	Metabolic syndrome: definition, classification, diagnostic criteria, urgency of the problem.	2
14	Examination plan for patients with metabolic syndrome, the role of instrumental and laboratory examination methods, patient management tactics depending on glycemia, body mass index, blood pressure level. Drug and non-drug treatment (simulation training).	2
15	Final module control	2
	TOTAL	**30**
	INCLUDING SIMULATION TRAINING	**8**

Module 6. Nephrology

№	Topic	Number of hours
1	Urinary syndrome: Definition and characteristics of components of urinary	2

	syndrome. Differential diagnosis with hematuria, leukocyturia, proteinuria (simulation training).	
2	Treatment of patients with glomerulonephritis	2
3	Management of patients with pyelonephritis	2
4	Differential diagnosis of edema	2
5	Differential diagnosis in nephrotic syndrome (simulation training)	2
6	Treatment of nephrotic syndrome	2
7	The concept of "chronic kidney disease". Classification. Pathogenesis of lesions of organs and systems, their clinical manifestations. Clinic and changes in laboratory indicators depending on the stage.	
8	Kidney replacement therapy: hemodialysis, kidney transplantation. Indications and contraindications for hemodialysis, complications.	2
9	Treatment of patients with chronic kidney disease (simulation training)	4
10	Treatment of patients with diabetic nephropathy.	2
11	Management of patients with renovascular arterial hypertension (simulation training).	2
12	Management of patients with renoparenchymal arterial hypertension	2
13	Management of patients with tubulo-interstitial kidney disease	2
14	Final module control	2
	TOTAL	**30**
	ІNCLUDING SIMULATION TRAINING	**8**

Module 7. Hematology

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№	Topic	Number of hours
1	Introduction to hematology. Semiotics of hematopoietic system diseases. Methods of examination of patients in hematology.	2
2	Clinical and laboratory evaluation of anemias. Management of patients with iron deficiency anemia.	2
3	Management of patients with B-12, foliodeficiency anemia.	2
4	Treatment of patients with anemia (simulation training).	2
5	Management of patients with acute leukemiaes	4
6	Management of patients with chronic leukemiaes	
7	Management of patients with multiple myeloma	2
8	Treatment of hematological malignancies (simulation training)	2
9	Management of patients with splenomegaly	2
10	Management of patients with leukemoid reaction	2
11	Management of patients with bleeding (hemophilia, von Willebrand's disease, thrombocytopenia) .	2
12	Management of patients with thrombophilias (antiphospholipid syndrome, factor V Leiden mutation, protein C and S deficiency, antithrombin III deficiency)	2
13	Management of patients with bleeding and thrombosis (simulation training)	2
14	Management of patients with lymphadenopathy (simulation training).	2
14	Management of patients with lymphoma	2
15	Final module control	2
	TOTAL	**30**
	ІNCLUDING SIMULATION TRAINING	**8**

6.4 Self-study

Module 1. Cardiology

№	Topic	Number of hours
1	Topic 1. Basic issues of cardiology. The role of additional diagnosis tools in the cardiovascular system diseases diagnosis.	2
2	Topic 2. Management of patients with heart rhythm and conduction disorders.	4
3	Topic 3. Management of a patient with shortness of breath. Management of patients with chronic heart failure.	2
4	Topic 4. Management of a patient with cardiomegaly. Management of a patient with myocardiopathies.	2
5	Topic 5. Management of patients with heart murmurs and defects.	4
6	Topic 6. Management of patients with arterial hypertension.	4
7	Topic 7. Primary and secondary prevention of atherosclerotic cardiovascular diseases	2
8	Topic 8. Management of patients with acute pain in the chest and in the region of the heart (acute conditions).	4
9	Topic 9. Management of patients with chronic chest and heart pain (chronic conditions).	4
10	Topic 10. Management of patients with urgent conditions in cardiology.	4
	Final module control	8
	TOTAL	**40**

Module 2. Gastroenterology

№	Topic	Number of hours
1	Topic 1. Basic principles in gastroenterology. Management of patients with gastric dyspepsia and diseases of the gastroduodenal zone (functional dyspepsia, chronic gastritis, peptic ulcer disease).	4
2	Topic 2. Management of a patient with heartburn.	2
3	Topic 3. Management of a patient with dysphagia.	2
4	Topic 4. Management of patients with diseases of the biliary system (biliary dysfunction, chronic noncalculous cholecystitis, gallstone disease).	2
5	Topic 5. Management of a patient with jaundice and hepatomegaly.	5
6	Topic 6. Metabolic diseases in gastroenterology.	4
7	Topic 7. Management of a patient with portal hypertension and ascites	5
8	Topic 8. Management of a patient with abdominal pain (including chronic pancreatitis).	4
9	Topic 9. Management of a patient with chronic diarrhea and constipation syndromes. .	4
10	Topic 10. Management of patients with emergency conditions in gastroenterology.	4
11	Final module control	4
	TOTAL	**40**

Module 3. Pulmonology

№	Topic	Number of hours
1	Topic 1. Basic questions of pulmonology and phthisiology. Modern instrumental and laboratory diagnostic methods in pulmonology and phthisiology.	4
2	Topic 2. Management of patients with pulmonary infiltrate (community acquired pneumonia).	4
3	Topic 3. Management of patients with pulmonary infiltrate (continued). Management of patients with hospital acquired pneumonia.	4
4	Topic 4. Differential diagnosis of pulmonary infiltrates.	4
5	Topic 5. Differential diagnosis of pleural effusion. Management of patients with pleurisy.	2
6	Topic 6. Management of patients with acute purulent and destructive processes in the lungs. Differential diagnosis in case of a cavity in the lungs.	4
7	Topic 7. Management of patients with chronic purulent-destructive processes in the lungs. Differential diagnosis of hemoptysis.	2
8	Topic 8. Management of patients with asthma. Differential diagnosis of asthma attack.	4
9	Topic 9. Differential diagnosis in bronchial obstruction syndrome. Management of patients with chronic obstructive pulmonary disease (COPD).	4
10	Topic 10. Disseminated processes in the lungs: differential diagnosis, features of patient management.	4
11	Final module control	4
	TOTAL	**40**

Module 4. Rheumatology

№	Topic	Number of hours
1	Topic 1. Management of patients with joint syndrome.	2
2	Topic 2. Management of patients with joint syndrome.	2
3	Topic 3. Management of patients with arthralgia / myalgia.	2
4	Topic 4. Management of patients with systemic vasculitis.	2
5	Topic 5. Management of patients with fever of unknown origin.	2
	Final module control	4
	TOTAL	**14**

Module 5. Endocrinology

№	Topic	Number of hours
1	Topic 1. Management of a patient with diabetes mellitus and diabetes insipidus.	2
2	Topic 2. Management of a patient with uncompensated diabetes mellitus and complications of diabetes.	2
3	Topic 3. Management of a patient with thyroid pathology.	2
4	Topic 4. Management of a patient with adrenal gland pathology.	2

5	Topic 5. Management of a patient with metabolic syndrome.	2
	Final module control	2
	TOTAL	**12**

Module 6. Nephrology

№	Topic	Number of hours
1	Topic 1. Management of urinary syndrome.	2
2	Topic 2. Management of patients with edema.	4
3	Topic 3. Management of chronic renal failure.	4
4	Topic 4. Management of renal hypertension.	2
5	Topic 5. Management of patients with nephrotic syndrome.	2
	Final module control	2
	TOTAL	**16**

Module 7. Hematology

№	Topic	Number of hours
1	Topic 1. Management of a patient with anemia.	4
2	Topic 2. Management of a patient with hematological malignancies and leukemoid reaction.	4
3	Topic 3. Management of a patient with splenomegaly.	2
4	Topic 4. Management of a patient with coagulopathy.	4
5	Topic 5. Management of a patient with lymphadenopathy.	2
	Final module control	2
	TOTAL	**18**

6.5. Individual tasks

Not required by the program.

7. TOOLS, EQUIPMENT AND SOFTWARE

Devices for measuring blood pressure, phonendoscopes, glucometers RIGHTEST BIONIME GM550 with test strips ELSA/GS550, (2019), electrocardiograph, spirograph, peak flow meters, computer spirometry, pulse oximeters, thermometers, rapid test systems, mannequins are used for the educational process.

Students also get to know the operation of the endoscopy room and functional diagnostics room, where there is a gastrointestinal videoscope Olympus GIF-XP170N, Olympus GIF-H170 (2018) and a video colonoscope CF-H170L/I (2018), ultrasound system CX50, Philips Ultrasound, Inc, Label PN 453561952821 , (2022) (in use with the Ukrainian National University) and a biodensitometer for determining body components (in joint use with the Department of Physiology).

In addition, didactic materials are used:

- plans of practical classes
- tasks for independent work
- methodological instructions/recommendations for students and teachers

- algorithms of treatment and provision of emergency care (according to the standards of evidence-based medicine)
- algorithms for performing practical skills, medical manipulations, video films
- results of laboratory and instrumental research methods
- dummies, phantoms
- questions, situational tasks, assignments or cases for current and final control.
- electronic bank of test tasks, situational tasks.
- laptop (type #1) Lenovo V15-ADA
- stationary personal computer No. 2 FC 210;
- UzhNU e-learning website e-learn.uzhnu.edu.ua.

8. RECOMMENDED SOURCES OF INFORMATION

Methodical Support

1. Harrison's Principles of Internal Medicine 20/E (Vol. 1 & vol. 2) (ebook) 20 th edition / Dennis L. Kasper , Anthony S. Fauci , Stephen L. Hauser , Dan L. Longo, J. Larry Jameson, Joseph Loscalzo. – McGraw Hill Professional, 2018. – 4048 p, 3528 p
2. Davidson's Principles and Practice of Medicine / Edited by Stuart H Ralston, Ian D Penman, Mark WJ Strachan, Richard P Hobson, 23 edition. – Elsevier, 2018. – 1440 p.
3. COPD: manual for students (according to GOLD recommendations) / I.V.Shushman, M.I.Tovt-Korshynska. // IC of CCCH – Uzhhorod, 2018. – 24p

Basic sources

1. Emery and Rimoin's Principles and Practice of Medical Genetics and Genomics. Clinical Principles and Applications. 7th Edition . Editors: Reed Pyeritz, Bruce Korf, Wayne GrodyeBook ISBN: 9780128126844. Academic Press, 2018. – 412 p.
2. Internal Medicine: in 2 books. Book 1. Diseases of the Cardiovascular and Respiratory Systems: textbook / N.M. Seredyuk, I.P. Vakaliuk, R.I. Yatsyshyn et al. – 2019. – 664 p.
3. Internal Medicine: in 2 books. Book 2. Diseases of the Digestive System, Kidney, Rheumatic and Hematological Diseases/ N.M. Seredyuk, I.P. Vakaliuk, R.I. Yatsyshyn et al. – 2020. – 464 p.
4. Brady W.J., Lipinski M.J. et al. Electrocardiogram in Clinical Medicine 1st edition, USA: Wiley Blackwell, 2020. – 473 p.
5. The Merck Manual of Diagnosis and Therapy / Edited by Robert S. Porter., 20th Revised edition London : Elsevier Health Sciences, 2018. – 3500 p.
6. OXFORD HANDBOOK OF Endocrinology and Diabetes, EDITED BY Katharine Owen Associate Professor of Diabetes and Honorary Consultant Physician, Oxford Centre for Diabetes, Endocrinology and Metabolism, Radcliffe Department of Medicine, University of Oxford, Oxford, UK Helen Turner Consultant in Endocrinology, Oxford Centre for Diabetes, Endocrinology and Metabolism, Oxford University Hospitals NHS Trust, Churchill Hospital, Oxford, UK John Wass Professor of Endocrinology, University of Oxford, Oxford, UK. - 4th edition, 2022.
7. Williams Manual of Hematology, edited by Marshall A. Lichtman, James P. Wilmot Kenneth Kaushansky, Josef T. Prchal, Marcel M. Levi, Linda J. Burns, David C. Linch. - 10th edition, 2022.
8. Respiratory Disease Series: Diagnostic Tools and Disease Managements, edited by Hiroyuki Nakamura, Kazutetsu Aoshiba, Keisaku Fujimoto. - 2019.

Additional sources

1. I.V.Shushman, M.I.Tovt-Korshynska. Asthma: manual for students (according to GINA recommendations).– Uzhhorod, 2018.- 24p.
2. Endocrinology / R. Silver, J. Burton, A. Parikh // MCOQE Review Notes and Lecture Series.
3. Gastroenterology Essentials / T.M. Hanych, M.I. Tovt-Korshynska, M.V. Rostoka-Reznikova. – Uzhhorod, 2019. – 127 p.
4. Hemoptysis: differential diagnosis / Tovt-Korshynska, M.V. Rostoka-Reznikova. – Uzhhorod, 2019. – 40 p.
5. How to write a Case History. Manual for students / Tovt-Korshynska M.I., Rostoka-Reznikova M.V., Bletskan V.T., Pityulich V.M., Tymko L.I. // IC of CCCH, 2017. – Uzhhorod. – 36p.

6. Pocket guide of Type 2 Diabetes Mellitus / By I.V.Shushman, M.I.Tovt-Korshynska.- Uzhhorod:UzhNU,2018

Information Internet resources

1. https://decisionpoint.medscape.com/ - Clinical Guidelines, Expert Perspectives
2. https://www.medscape.com/public/about - the leading online global destination for physicians and healthcare professionals worldwide, offering the latest medical news and expert perspectives; essential point-of-care drug and disease information; and relevant professional education and CME.
3. https://www.medscape.com/gastroenterology Gastroenterology Basic Information
4. https://ehaweb.org/ European Hematology Association
5. https://ginasthma.org/gina-reports/ GINA Report, Global Strategy for Asthma Management and Prevention.
6. https://goldcopd.org/2022-gold-reports-2/ GLOBAL STRATEGY FOR PREVENTION, DIAGNOSIS AND MANAGEMENT OF COPD: 2022 Report
7. https://www.pulmonolrespirjournal.com/ Journal of Pulmonology
8. https://ueg.eu/about/who-we-are United European Gastroenterology (UEG) organization
9. https://www.journal-of-hepatology.eu/ Journal of Hepatology
10. https://professional.diabetes.org Education program. Podcasts. News about DM.
11. http://guidelines.diabetes.ca/cpg International guidelines for DM
12. https://www.thyroid.org/professionals/ata-professional-guidelines/ International guidelines for diseases of Thyroid gland
13. http://press.endocrine.org/journal/endo Medical Journal about endocrine system.
14. https://www.omim.org/ OMIM: Online Mendelian Inheritance in Man. An Online Catalog of Human Genes and Genetic Disorders. OMIM is a comprehensive, authoritative compendium of human genes and genetic phenotypes that is freely available and updated daily. The full-text, referenced overviews in OMIM contain information on all known mendelian disorders and over 16,000 genes. OMIM focuses on the relationship between phenotype and genotype. It is updated daily, and the entries contain copious links to other genetics resources.
15. http://ceo.medword.net/ **CLINICAL EYE OPENERS (CEO)** is a veritable **clinical gallery** of images and videos illustrating clinical signs interpreted as signals to accelerate the recognition of potential causes (etiology), mechanisms (pathogenesis), natural history (patterns of past, present and prospective symptoms and clinical prognosis) – **CEO is NOT** a source of information to formulate diagnoses or therapies
16. International Birth Defects Information System (I.B.I.S.) – IBIS is a multi-lingual website dedicated to promoting better care and prevention of birth defects through information sharing (ibis-birthdefects.org) International Birth Defects Information System (I.B.I.S.). IBIS is a multi-lingual website dedicated to promoting better care and prevention of birth defects through information sharing
17. https://www.marchofdimes.org/ March of Dimes. March of Dimes, the nation's leader in mom and baby health. March of Dimes acquires and analyzes maternal and infant health data and program data to show the current state of the health crisis to inform research and policy change.
18. https://www.cdc.gov/ncbddd/birthdefects/surveillancemanual/index.html CDC Centers for Disease Control and Prevention. CDC is the nation's leading science-based, data-driven, service organization that protects the public's health. For more than 70 years, we've put science into action to

help children stay healthy so they can grow and learn; to help families, businesses, and communities fight disease and stay strong; and to protect the public's health.

19. https://rarechromo.org/ Unique. Understanding Rare Chromosome and Gene Disorders. An international group, supporting, informing and networking with anyone affected by a rare chromosome disorder or an autosomal dominant single gene disorder and with any interested professionals).

20. https://www.orpha.net/consor/cgi-bin/index.php ORPHANET. The portal for rare diseases and orphan drugs. Orphanet is a unique resource, gathering and improving knowledge on rare diseases so as to improve the diagnosis, care and treatment of patients with rare diseases. Orphanet aims to provide high-quality information on rare diseases, and ensure equal access to knowledge for all stakeholders. Orphanet also maintains the Orphanet rare disease nomenclature (ORPHAcode), essential in improving the visibility of rare diseases in health and research information systems.

21. https://rarediseases.org/?s=A&post_type=rare-diseases NORD (National Organization for Rare Disorders), a 501(c)(3) organization, is a patient advocacy organization dedicated to individuals with rare diseases and the organizations that serve them. NORD, along with its more than 300 patient organization members, is committed to the identification, treatment, and cure of rare disorders through programs of education, advocacy, research, and patient services.

Appendix

Results of the further review of the syllabus

The syllabus was re-approved on 20___ / 20___ academic year unchanged; with changes (Appendix___).

(underline the correct variant)

Minutes № ____ of "____" _____ 20 ___ Head of the Department _____ _____

(Signature) (Surname, initials)

The syllabus was re-approved on 20___ / 20___ academic year unchanged; with changes (Appendix ___).

(underline the correct variant)

Minutes № ____ of "____" _____ 20 ___ Head of the Department _____ _____

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The syllabus was re-approved on 20___ / 20___ academic year unchanged; with changes (Appendix ___).

(underline the correct variant)

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