

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



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

SYLLABUS

EC 11. INTERNAL MEDICINE III

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

"Internal Medicine III" 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".

Authors:

Tovt-Korshynska M. I., MD, Ph.D., Professor, Head of the Department of Internal Medicine (Medical Faculty №2), Rostoka-Reznikova M.V. , MD, PhD, Associate Professor of the Department of Internal Medicine (Medical Faculty №2), Ternushchak T.M. MD, PhD, Associate Professor of the Department of Internal Medicine (Medical Faculty №2), Moskaly O.M., PhD, Associate Professor of the Internal Medicine Department (Medical Faculty №2), Ihnatko O.I., PhD, Associate Professor of the Internal Medicine Department (Medical Faculty №2), Opalenyk S.M., PhD, Associate Professor of the Internal Medicine Department (Medical Faculty №2), Lizanets N.V., PhD, Associate Professor of the Internal Medicine Department (Medical Faculty №2), Shushman I.V., PhD, Associate Professor of the Internal Medicine Department (Medical Faculty №2), Rishko M.V., D.Med.Sci., Professor, Head of the Department of Hospital Therapy (Faculty of Medicine), Derbak M.A., Ph.D., Professor, Head of the Department of Faculty Therapy (Faculty of Medicine), Lemko O.I., Ph.D., Professor of the Department of Faculty Therapy (Faculty of Medicine), Kutsyn O.O., Ph.D., Associate Professor, Head of the Department of Hospital Therapy (Faculty of Medicine), Lazur Y.V., Ph.D., Associate Professor of the Department of Hospital Therapy (Faculty of Medicine).

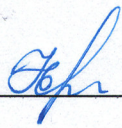
The syllabus was discussed and approved at the meeting of the Department of Internal Medicine

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

Name of indicators	Distribution of academic hours according to the curriculum	
	Full-time study	Extramural form of study
ECTS credits – 12	Year of training:	
Total number of hours – 360	6	-
Number of modules – 7	Semester:	
Weekly academic hours for full-time study: class-room academic hours -6 student's self-study hours - 3	XI, XII	-
	Lectures:	
		-
	Practical classes (seminars):	
		-
Type of final control: credit	Laboratory classes (clinical):	
	240	-
Form of final control: written, oral	Self-study:	
	120	-

2. PURPOSE OF THE EDUCATIONAL SUBJECT

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 with the new 3 / undifferentiated patients. Throughout the course, students examine 6-10 patients weekly under 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 the conduct 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 pulmonological 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 pictures 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.
- 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 peak flowmetry.
- 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 specialists and principles of professional subordination.

3. PREREQUISITES FOR STUDYING THE DISCIPLINE

Prerequisites for studying the discipline "INTERNAL MEDICINE III" 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). 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	PLO 2

	health care.	
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 according to existing clinical protocols and standards of treatment.	PLO 14
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

List 1 (syndromes and symptoms)

- | | |
|--|--|
| 2. acromegaly | 36. cough |
| 3. anemia syndrome | 38. coma |
| 4. anuria and oliguria | 40. internal bleeding |
| 5. arterial hypertension | 41. hemoptysis |
| 6. arterial hypotension | 43. lymphadenopathy |
| 7. chest pain | 46. edema |
| 8. abdominal pain | 47. obesity (+ body weight) |
| 12. vomiting | 51. pneumothorax tense (closed) |
| 13. bronchial obstruction syndrome | 52. pneumothorax nontense (open) |
| 15. pleural effusion | 53. valvular pneumothorax |
| 17. fever | 54. polyuria |
| 18. hemorrhagic syndrome | 55. portal hypertension |
| 19. hypoglycemia | 57. heart rhythm and conduction disturbances |
| 20. hyperglycemia | 58. sudden cardiac arrest |
| 22. hepatomegaly and hepatolienal syndrome | 59. disorders of consciousness |
| 23. headache | 60. skin itching |
| 24. dysuria | 61. urinary syndrome |
| 26. dyspepsia | 64. indigestion syndrome |
| 27. dysphagia | 65. thirst |
| 28. diarrhea | 67. joint syndrome |
| 29. jaundice | 68. convulsions |
| 30. shortness of breath | 69. weight loss |
| 31. asphyxia | 70. cyanosis |
| 32. constipation | 73. gastrointestinal bleeding |
| 35. cardiomegaly | |

List 2 (diseases)

- | | |
|--|---|
| I) Diseases of blood and hematopoietic organs,
immune mechanism comprising
disorders | 56. heart failure |
| 1. anemia | 58. pulmonary embolism |
| 3. hemophilia | V) Diseases of respiratory organs and
mediastinum: |
| 4. leukemias | 61. bronchial asthma |
| 5. lymphomas | 62. bronchitis |
| 9. idiopathic thrombocytopenic purpura | 63. bronchiectatic disease |
| IV) Cardiovascular system diseases: | 64. bronchopulmonary dysplasia |
| 40. aortic aneurysms | 66. acute respiratory distress syndrome |
| 41. atherosclerosis | 67. respiratory failure |
| 43. congenital heart defects | 68. infectious and destructive lung diseases |
| 44. essential arterial hypertension | 69. respiratory failure |
| 45. secondary arterial hypertension | 71. cystic fibrosis |
| 46. endocarditis | 72. lung and mediastinal neoplasms |
| 48. ischemic heart disease | 73. pleurisy |
| 49. carditis | 75. pneumonia |
| 50. cardiomyopathy | 76. pneumothorax |
| 51. cor pulmonale | 80. chronic obstructive pulmonary disease |
| 52. acquired heart defects | VI) Digestive organs diseases: |
| 54. pericarditis | 82. peptic ulcer disease |
| 55. heart rhythm and conduction disturbances | 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, lacticidemic
- 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 | 28. bronchoscopy |
| 5. urine analysis (24 hour urination) | 29. endoscopic examination of the digestive tract |
| 6. alpha-amylase activity in blood and urine, fecal elastase 1 | 30. echocardiography and dopplerography |
| 7. blood protein and proteinogram, C-reactive protein | 31. feces analysis |
| 8. blood glucose, glycated hemoglobin, | 32. full blood count |
| 9. oral glucose tolerance test | 33. urine analysis |
| 10. blood lipid profile | 34. glucose and acetone in urine |
| 11. blood hormones | 37. sputum analysis |
| 12. serum ferritin, iron and copper | 44. microbiological investigation of biological fluids and secretions |
| 13. creatinine, blood and urine urea, glomerular filtration rate | 46. methods of thyroid gland visualization methods |
| 14. blood electrolytes | 47. X-ray, contrast angiography |
| 15. blood aminotransferases | 48. abdominal organs visualization methods |
| 16. total blood bilirubin and its fractions | 49. chest cavity visualization methods |
| 17. coagulogram | 50. genitourinary system visualization methods |
| 18. blood uric acid | 54. tuberculin skin test |
| 19. blood alkaline phosphatase | 55. fractional bile investigation and pH-metry of the stomach and esophagus |
| 27. standard ECG (12 leads) | |

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

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, simulation scenario performance.
- 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		
12	12	12	12	12	12	12	12	12	12	10	70	200

Module 2 – Gastroenterology

Current evaluation and individual work								Module control	Total
T1	T2	T3	T4	T5	T6	T7	Individual work		
17	17	17	17	17	17	17	11	70	200

Module 3 – Pulmonology

Current evaluation and individual work									Module control	Total
T1	T2	T3	T4	T5	T6	T7	T8	Individual work		
15	15	15	15	15	15	15	15	10	70	200

Module 4 – Rheumatology

Current evaluation and individual work				Module control	Total
T1	T2	T3	Individual work		
40	40	40	10	70	200

Module 5 – Endocrinology

Current evaluation and individual work					Module control	Total
T1	T2	T3	T4	Individual work		
30	30	30	30	10	70	200

Module 6 – Nephrology

Поточне оцінювання та самостійна робота					MKP	Current evaluation and individual work
T1	T2	T3	T4	Individual work		
30	30	30	30	10	70	200

Module 7 – Hematology

Current evaluation and individual work					Module control	Total
T1	T2	T3	T4	Individual work		
30	30	30	30	10	70	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	120	10	120	10	120
Tests (oral, written, electronic) in topics evaluation	10	7	7	10	8	9
Clinical work with simulation patients (clinical cases solving, simulation scenario performance)		5		7		6

Diaries in Case History	1	10	1	11	1	10
Module control work		70	1	70		70
Total		200		200		200
	Module 4		Module 5		Module 6	
Practical classes	3	120	4	120	4	120
Tests (oral, written, electronic) in topics evaluation		25		20		20
Clinical work with simulation patients (clinical cases solving), simulation scenario performance	3	15	4	10	4	10
Diaries in Case History	1	10	1	10	1	10
Module control work	1	70	1	70		70
Total		200		200		200
	Module 7					
Practical classes	4	120				
Tests (oral, written, electronic) in topics evaluation		20				
Clinical work with simulation patients (clinical cases solving, simulation scenario performance)	4	10				
Diaries in Case History	1	10				
Module control work	1	70				
Разом		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							
	<i>Module 1</i>	<i>Module 2</i>	<i>Module 3</i>	<i>Module 4</i>	<i>Module 5</i>	<i>Module 6</i>	<i>Module 7</i>	
"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 clinical analysis of the patient as a treatment technology. General principles of diagnosis and differential diagnosis of syndromes (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 examination of a patient with a pathology of the cardiovascular system. Symptoms and syndromes of CVD. The role of modern laboratory, radiological and instrumental examination methods in the diagnosis of CVD.

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 His; 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 ejection fraction of the left ventricle, respiratory failure due to violation of bronchial patency and diseases of the lungs and pleura; pathology of pulmonary vessels, in particular, thromboembolism of the pulmonary artery 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 myocardopathies.

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 Eisenmenger'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- \uparrow, \downarrow 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 (osteocondrosis 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- \uparrow, \downarrow 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 (stenokard 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 questions in gastroenterology. Management of a patient 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. Drawing up an examination 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). Patient management tactics depend on the underlying cause. Modern standards of treatment. Primary and secondary prevention. Prognosis and work capacity.

Topic 2. Management of a patient with heartburn and dysphagia.

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.

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 3. Management of patients with diseases of the biliary system (biliary dysfunction, chronic noncalculous cholecystitis, gallstone disease) and abdominal pain (including chronic pancreatitis).

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. Differential diagnosis in 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 4. Management of patients with hepatopathies.

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. Forecast and performance.

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 5. 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 methods of examination (ultrasound, dopplerography, CT scan, 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 6. Management of a patient with chronic diarrhea syndrome, constipation.

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).

Drawing up an 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). Patient management tactics depending on the cause, differentiated therapy. Modern standards of treatment. Primary and secondary prevention. Forecast and performance.

Topic 7. 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 for biliary colic. Final module control.

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

Topic 1. Basic questions of pulmonology and phthysiology. Modern instrumental and laboratory diagnostic methods in pulmonology and phthysiology. Management of patients with cough and hemoptysis.

The main syndromes of pulmonary pathology. Definition of basic concepts. Analysis of modern instrumental and laboratory diagnostic methods in pulmonology and phthysiology, 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. Analysis of some nosologies that may be accompanied by hemoptysis (TB, Goodpasture's syndrome, Wegener's granulomatosis, idiopathic hemosiderosis of the lungs).

Topic 2. Management of patients with persistent pulmonary infiltrate (pulmonary tuberculosis, fungal diseases of the respiratory system).

Modern classification of tuberculosis. Pulmonary tuberculosis and its varieties. Fungal diseases of the respiratory system. Candidiasis: diagnosis, features of the clinical course, treatment tactics. Aspergillosis: forms, features of clinical manifestations, diagnostic algorithm, principles of treatment. Analysis of the differential diagnostic algorithms in pulmonary infiltrates. Informational value of various diagnostic methods (radiological, instrumental, laboratory).

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

Data from international consensuses and domestic normative documents on the etiopathogenesis and classification of pneumonia, evaluation of the severity of the process according to international scales (PORT, CRB-65). Drawing up an examination plan, the role of instrumental (x-ray) and laboratory examination methods. Types and variants of the course of non-hospital pneumonias (acute, protracted, granular, focal, interstitial, pneumonia in persons with immune disorders, aspiration). The principles of treatment of nosocomial pneumonias, the choice of etiological (antibacterial) treatment depending on the possible causative agent. 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 (medicinal and non-medicinal).

Topic 4. Management of patients with pulmonary infiltrate (continued). Hospital acquired pneumonia. Viral pneumonias.

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. 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 influence in hospital-acquired pneumonia.

Topic 5. Management of patients with purulent process and pleurisy.

Definition of concepts, 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. 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. Peculiarities of the application of non-medicinal effects. Exudative pleurisy: main etiopathogenetic factors of development, features of clinical manifestations, plan of diagnostic measures. Management of patients, differentiated etiological and pathogenetic therapy. Relative and absolute indications for pleural puncture. Clinical analysis of patients (clinical situational problems) with pneumonia and/or pleurisy.

General characteristics of purulent-destructive processes in the lungs, main nosological forms, definition of concepts, classification. The main etiological factors and leading pathogenetic mechanisms of the development of these processes. Lung abscess: phases of the clinical course, their characteristics, diagnostic algorithm. Tactics of conservative management of patients: features of etiological and pathogenetic treatment. Complications and their prevention. Indications for surgical treatment. Gangrene of the lungs. Peculiarities of development and critical manifestations, patient management tactics. Analysis of the differential diagnosis algorithm for cavity syndrome in the lung parenchyma.

Bronchiectatic disease, primary and secondary bronchiectases: definition. Mechanisms of development of primary bronchiectasis and factors contributing to the emergence of bronchiectasis. Classification of bronchiectasis disease, plan of diagnostic measures, informative 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 of patients with bronchiectasis in the phase of exacerbation and in the phase of remission. Analysis of the differential diagnosis algorithm for hemoptysis. Clinical examination of a patient (situational problems) with purulent-destructive processes in the bronchopulmonary system.

Topic 6. Differential diagnosis in bronchial obstruction syndrome. Management of patients with chronic obstructive pulmonary disease (COPD) and asthma.

Clinical and instrumental methods of confirming the presence of broncho-obstructive syndrome, assessment of its reversibility. Analysis of the 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 severity of COPD 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 managing patients with COPD 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). Data of the international consensus (GINA) and local regulatory documents on etiopathogenesis, features of

development, classification and phenotypes of bronchial asthma. International scales for assessing the course of bronchial asthma. Basic principles of diagnosis and treatment of patients with bronchial asthma depending on its form. Groups of anti-inflammatory and broncholytic agents and their pharmacodynamics. Step-by-step basic treatment of patients according to GINA. The role of SMART therapy in the management of patients with bronchial asthma. Dissection of the algorithm of differential diagnosis in the case of an attack of yaduha. The main reasons for the development of an attack of yaduha and the provision of assistance taking into account the causative factor. Bronchial asthma attack: mechanisms of development, algorithm of providing medical care taking into account its severity. Asthmatic status: definition of concepts, pathogenetic mechanisms of development, classification, features of manifestations according to severity. Pathogenetic justification of the main treatment measures.

Topic 7. 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.

Topic 8. Management of patients with pulmonary hypertension, pulmonary edema. Acute and chronic respiratory failure.

Pulmonary and respiratory failure. . Respiratory failure: definition of concepts, main causes, role pulmonary function testing, ABG, pulse oxymetry and other examination methods. etiopathogenesis, classification, clinical forms, diagnostic methods, principles of patient management. Differential diagnosis algorithm for pulmonary hypertension, pulmonary edema. Final module 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.

The differential diagnosis of arthritis and arthrosis. The plan examination, 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.

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 2. Management of patients with systemic vasculitis.

The 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 3. 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 and adrenal gland pathology.

Determination of the size of the thyroid gland. 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 ¹³¹I-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.

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 4. 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

Topic 1. Basic issues of nephrology. The role of additional examination methods in diagnosis kidney diseases

General principles of diagnosis and differential diagnosis of main syndromes in nephrology (definition, diagnostic criteria and diagnosis, etiological classification, differential diagnosis algorithm). The basics of anatomy, physiology of the urinary system, the main functions of the kidneys. Clinical and laboratory syndromes of renal failure and kidney diseases. Terminology. Classification of kidney diseases. The concept of CKD is "chronic kidney disease". The role of modern laboratory, radiological and instrumental examination methods in the diagnosis of kidney diseases. Approach to the patient and treatment technologies in nephrology.

Topic 2. 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.

Topic 3. Management of patients with edema and nephrotic syndrome.

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.

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.

Topic 4. Management of chronic renal failure. Renal hypertension.

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.

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.

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. Drawing up an examination plan, the role of laboratory methods of examination in iron-deficiency and B12-deficiency anemias. Patient management tactics, drug and non-drug treatment. 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 work capacity.

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 3. 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 4. 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
11 th , 12 th 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.	10		6	4
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).	8		6	2
Topic 9. Management of patients with chronic chest and heart pain (chronic conditions).	8		6	2
Topic 10. Management of patients with urgent conditions in cardiology.	6		4	2
Final Module Control	4		2	2
Total	90		60	30
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). Dyspepsia differential diagnosis.	8		6	2
Topic 2. Management of a patient with heartburn and dysphagia.	8		6	2
Topic 3. Management of a patient with biliary system diseases (biliary dysfunction, chronic noncalculous cholecystitis, gallstone disease).	8		6	2
Topic 4. Management of patients with hepatopathies (jaundice and hepatomegaly).	8		6	2

Topic 5. Management of a patient with portal hypertension and ascites.	6		4	2
Topic 6. Management of a patient with chronic diarrhea and constipation syndromes.	8		6	2
Topic 7. Management of patients with emergency conditions in gastroenterology.	6		4	2
Final Module Control	3		2	1
Total	55		40	15
Module 3. Pulmonology				
Topic 1. Basic questions of pulmonology and pthisiology. Modern instrumental and laboratory diagnostic methods in pulmonology and pthisiology. Management of patients with cough and hemoptysis.	8		6	2
Topic 2. Management of patients with persistent pulmonary infiltrate (pulmonary tuberculosis, fungal respiratory system diseases).	8		6	2
Topic 3. Management of patients with pulmonary infiltrate (continued). Community acquired pneumonia.	8		6	2
Topic 4. Management of patients with pulmonary infiltrate (continued). Hospital acquired pneumonia. Viral pneumonias.	8		6	2
Topic 5. Management of patients with purulent process and pleurisy.	8		6	2
Topic 6. Differential diagnosis in bronchial obstruction syndrome. Management of patients with chronic obstructive pulmonary disease (COPD) and asthma.	8		6	2
Topic 7. Disseminated processes in the lungs: differential diagnosis, features of patient management.	8		6	2
Topic 8. Management of patients with pulmonary hypertension, pulmonary edema. Acute and chronic respiratory failure.	8		6	2
Final Module Control	4		2	2
Total	68		50	18
Module 4. Rheumatology				
Topic 1. Management of patients with joint syndrome.	9		6	3
Topic 2. Management of patients with systemic vasculitis.	9		6	3
Topic 3. Management of patients with fever of unknown origin.	7		4	3
Final Module Control	5		2	3
Total	30		18	12
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 and adrenal gland pathology.	8		6	2
Topic 4. Management of a patient with metabolic syndrome.	6		4	2
Final Module Control	4		2	2
Total	34		24	10
Module 6. Nephrology				
Topic 1. Basic issues of nephrology. The role of additional examination methods in kidney disease diagnosis.	9		6	3
Topic 2. Management of urinary syndrome.	9		6	3
Topic 3. Management of patients with edema and nephrotic syndrome.	9		6	3

Topic 4. Management of chronic kidney disease.	7		4	3
Final Module Control	5		2	3
Total	39		24	15
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, splenomegaly.	10		6	4
Topic 3. Management of a patient with coagulopathy.	10		6	4
Topic 4. Management of a patient with lymphadenopathy.	8		4	4
Final Module Control	6		2	4
Total	44		24	20
Total for educational discipline	360		240	120
Including simulation training			66	27,5%

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.	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 (simulation training).	2
14	Management of patients with heart defects.	2
15	Clinical examination of a patient with heart murmur and defect.	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.	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.	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.	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	8

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 - simulation training.	2
2	Management of a patient with functional dyspepsia. Diagnostics of dyspepsia.	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. Red flag symptoms. Management of a patient with esophagitis, including esophageal cancer, diffuse esophageal spasm, achalasia of the cardia, esophageal diverticula etc. Examination plan (simulation training).	2
5	Management of patients with GERD. Data of laboratory and instrumental research methods. Diagnosis criteria, differential diagnosis. Differentiated therapy of GERD. Primary and secondary prevention.	2
6	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
7	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
8	Management of patients with jaundice and chronic hepatitis. Modern treatment standards. Hepatoprotectors and antiviral therapy. 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) - simulation training.	2
9	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

10	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. 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
11	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
12	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. Management of a patient with portal hypertension and ascites: principles of prescribing diuretics. Indications for laparocentesis, surgical treatment. Primary and secondary prevention. Prognosis and work capacity.	2
13	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
14	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). Primary and secondary prevention of non-alcoholic fatty liver disease. Forecast and performance	2
15	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).	2
16	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. Diagnostics for constipation, diarrhea, gastrointestinal bleeding - simulation training.	2
17	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
18	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
19	Management of a patient with an urgent condition in gastroenterology (in upper gastrointestinal tract). Conservative and surgical treatment - simulation training.	2

20	Management of a patient with severe abdominal pain and dyspeptic syndromes. Emergency care in biliary colic and hepatic encephalopathy - simulation training.	2
21	Final module control	2
	TOTAL	42
	INCLUDING SIMULATION TRAINING	14

Module 3. Pulmonology

№	Topic	Number of hours
1	Basic questions of pulmonology. Additional diagnosis tools in pulmonology and phthiology, assessment of their significance.	2
2	Respiratory failure: definition of terms, main causes, role of pulmonary function testing and other examination methods simulation training.	2
3	International consensuses and local regulatory documents summary in pneumonia etiopathogenesis and classification, evaluation of the severity of the process according to international scales. Patient examination plan, diagnostic criteria.	2
4	Types and variants of community acquired pneumonias (acute, protracted, granular, focal, interstitial, pneumonia in persons with immune disorders, aspiration). 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
5	Features of SARS COV-2 associated pneumonia pathogenesis and course, diagnostic process, assessment of inflammatory activity and homeostasis. 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.	2
6	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.	2
7	Fungal lesions of the respiratory system, variants. Candidiasis: diagnosis, clinical course features, treatment tactics. Aspergillosis: forms, features of clinical manifestatos, diagnostic algorithm, principles of treatment.	2
8	Differential diagnosis algorithm for pulmonary infiltrates. Informational value of various diagnostic methods (radiological, instrumental, laboratory) - simulation training).	2
9	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.	2
10	Clinical analysis of patients (clinical situations) with pneumonia and/or pleurisy - simulation training.	2
11	Management of patients with dry and exudative pleurisy: features of clinical	2

	course, examination plan, differentiated etiological and pathogenetic therapy. Indications for pleural puncture. Non-pharmacological therapy features.	
12	Differential diagnosis algorithm and treatment strategy in the lung parenchyma cavity syndrome.	2
13	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
14	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).	2
15	Clinical examination of a patient (situational problems) with purulent-destructive processes in the bronchopulmonary system simulation training.	2
16	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.	2
17	Differential diagnosis algorithm in case of asthma attack. The main causes of an asthma attack and emergency care depending on the cause.	2
18	Management of patients with bronchial asthma attack and life-threatening asthma (status asthmaticus).	2
19	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
20	Management of patients with chronic obstructive pulmonary disease (COPD). Clinical and instrumental methods of confirming the presence of bronchospasm obstructive 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
21	Clinical analysis of patients (situational problems) with bronchial obstruction syndrome (asthma, COPD) simulation training..	2
22	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
23	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
34	Final module control	2
	TOTAL	42
	INCLUDING SIMULATION TRAINING	14

Module 4. Rheumatology

№	Topic	Number of hours	№
		денна	
1	Introduction to rheumatology. Diagnostic methods in rheumatology	2	
2	Management of patients with joint syndrome (simulation training).	2	
3	Management of patients with systemic lupus erytematosus (simulation training).	2	
4	Management of patients with gout and osteoarthritis (simulation training).	2	
5	Management of patients with systemic sclerosis, dermatomyositis and polymyositis.	2	
6	Management of patients with rheumatic polymyalgia and fibromyalgia	2	
7	Management of patients with major vessels vasculites (giant cell arteriitis, Takaiasu's and Kawasaki's diseases).	2	
8	Fever of unknown origin differential diagnosis algorithms (simulation training).	2	
9	Final module control	2	
	TOTAL	18	
	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	Diseases accompanied by thyrotoxicosis. Nodular toxic goiter. Medicinal and surgical treatment of toxic goiter, use of ¹³¹ -iodine for therapeutic purposes (simulation training).	2
9	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 (simulation training).	2
10	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	2

	surgical treatment. Clinic, diagnosis and treatment of pheochromocytoma.	
11	Metabolic syndrome: definition, classification, diagnostic criteria, urgency of the problem. 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
12	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 syndrome. Differential diagnosis with hematuria, leukocyturia, proteinuria (simulation training).	2
2	Treatment of patients with glomerulonephritis	2
3	Management of patients with pyelonephritis	2
4	Differential diagnosis of edema and nephrotic syndrome	2
5	Treatment of nephrotic syndrome (simulation training)	2
6	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.	2
7	Kidney replacement therapy: hemodialysis, kidney transplantation. Indications and contraindications for hemodialysis, complications.	
8	Treatment of patients with chronic kidney disease (simulation training)	2
9	Management of patients with renovascular arterial hypertension	2
10	Management of patients with renoparenchymal arterial hypertension	2
11	Management of patients with tubulo-interstitial kidney disease	2
12	Final module control	2
	TOTAL	24
	INCLUDING SIMULATION TRAINING	6

Module 7. Hematology

№	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 leukemiae	2
6	Management of patients with chronic leukemiae	2
7	Treatment of hematological malignancies (simulation training)	2
8	Management of patients with leukemoid reaction	2

9	Management of patients with bleeding - hemophilia, von Willebrand's disease, thrombocytopenia (simulation training).	2
10	Management of patients with thrombophilias (antiphospholipid syndrome, factor V Leiden mutation, protein C and S deficiency, antithrombin III deficiency).	2
11	Management of patients with lymphadenopathy (simulation training).	2
12	Final module control	2
	TOTAL	24
	INCLUDING 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.	4
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.	5
4	Topic 4. Management of a patient with cardiomegaly. Management of a patient with myocardiopathies.	5
5	Topic 5. Management of patients with heart murmurs and defects.	5
6	Topic 6. Management of patients with arterial hypertension.	5
7	Topic 7. Primary and secondary prevention of atherosclerotic cardiovascular diseases	4
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	4
	TOTAL	48

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).	2
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.	2
6	Topic 6. Metabolic diseases in gastroenterology.	2
7	Topic 7. Management of a patient with portal hypertension and ascites	2

8	Topic 8. Management of a patient with abdominal pain (including chronic pancreatitis).	2
9	Topic 9. Management of a patient with chronic diarrhea and constipation syndromes. .	2
10	Topic 10. Management of patients with emergency conditions in gastroenterology.	2
11	Final module control	1
	TOTAL	21

Module 3. Pulmonology

№	Topic	Number of hours
1	Topic 1. Basic questions of pulmonology and phthiology. Modern instrumental and laboratory diagnostic methods in pulmonology and phthiology.	2
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.	2
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.	2
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.	2
9	Topic 9. Differential diagnosis in bronchial obstruction syndrome. Management of patients with chronic obstructive pulmonary disease (COPD).	2
10	Topic 10. Disseminated processes in the lungs: differential diagnosis, features of patient management.	2
11	Final module control	2
	TOTAL	26

Module 4. Rheumatology

№	Topic	Number of hours
1	Topic 1. Management of patients with joint syndrome.	2
2	Topic 2. Management of patients with arthralgia / myalgia.	2
3	Topic 3. Management of patients with systemic vasculitis.	2
4	Topic 4. Management of patients with fever of unknown origin.	2
5	Final module control	1
	TOTAL	9

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 and adrenal gland pathology.	4
4	Topic 4. Management of a patient with metabolic syndrome.	2
5	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.	2
3	Topic 3. Management of chronic renal failure.	2
4	Topic 4. Management of renal hypertension.	2
5	Topic 5. Management of patients with nephrotic syndrome.	2
	Final module control	2
	TOTAL	12

Module 7. Hematology

№	Topic	Number of hours
1	Topic 1. Management of a patient with anemia.	2
2	Topic 2. Management of a patient with hematological malignancies and leukemoid reaction.	2
3	Topic 3. Management of a patient with splenomegaly.	2
4	Topic 4. Management of a patient with coagulopathy.	2
5	Topic 5. Management of a patient with lymphadenopathy.	2
	Final module control	2
	TOTAL	12

7. TOOLS, EQUIPMENT AND SOFTWARE

The educational discipline "Internal Medicine" (specialist course) involves the care of patients. Devices for measuring blood pressure, pulse oximeters, thermometers, spatulas, rapid test systems, phonendoscopes, electrocardiograph, echocardiograph, Holter ECG monitoring system, daily blood pressure monitoring system, peak flow meters, microprocessor diagnostic complex (computer spiograph), are used for the educational process. electroencephalograph, electrical stimulators, dummies. Students also get to know the work of the catheterization laboratory, the electrophysiology laboratory, and the endoscopic office.

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 skill exercises, medical manipulations, video films
- results of laboratory and instrumental research methods
- dummies, phantoms
- questions, problems, assignments or cases for current and final control.
- electronic bank of test tasks, bank of test tasks on paper media, situational tasks.
- software: a computer program for X-TLS testing with an open license
- UzhNU e-learning website e-learn.uzhnu.edu.ua.

8. RECOMMENDED SOURCES OF INFORMATION

Methodical Support

1. 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.
2. 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.
3. Principles of internal medicine (endocrinology, gastroenterology, hematology, pulmonary diseases). Study guide for 4th course students / Edited by prof Svitlana Smiyan. – 2021. – 474 p.

Basic sources

4. 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
5. 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.
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7. Medical Genetics 6th Edition by Lynn B. Jorde, John C. Carey, Michael J. Bamshad. - Elsevier, 2019. – 352 p.
8. 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.
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Additional sources

1. COPD: manual for students (according to GOLD recommendations) / I.V.Shushman, M.I.Tovt-Korshynska. // IC of CCCH – Uzhhorod, 2018. – 24p
2. I.V.Shushman, M.I.Tovt-Korshynska. Asthma: manual for students (according to GINA recommendations).– Uzhhorod, 2018.- 24p.
3. Endocrinology / R. Silver, J. Burton, A. Parikh // MCOQE Review Notes and Lecture Series.
4. Gastroenterology Essentials / T.M. Hanych, M.I. Tovt-Korshynska, M.V. Rostoka-Reznikova. – Uzhhorod, 2019. – 127 p.
5. Hemoptysis: differential diagnosis / Tovt-Korshynska, M.V. Rostoka-Reznikova. – Uzhhorod, 2019. – 40 p.
6. 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.
7. 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. <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.

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 _____

(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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(underline the correct variant)

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