

DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY


Department of Internal Medicine N 1

Department of Internal Medicine N 2



“Approved”

First Vice-Rector for scientific and pedagogical work

 prof. M. R. Gzhegotsky

“ 17 ” 09 2021

SYLLABUS OF THE EDUCATIONAL DISCIPLINE

"INTERNAL MEDICINE"

INDIVIDUAL PROFILE COURSE “OBSTETRICS AND GYNECOLOGY”

6 year of study

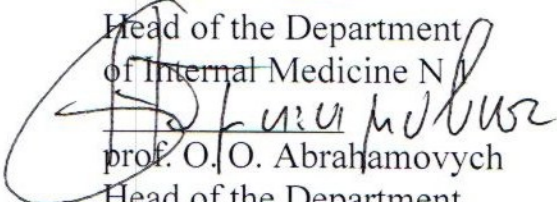
of higher education second (master's) level of specialists' preparing

field of knowledge 22 "Health Care"

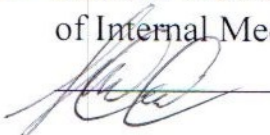
specialties 222 "Medicine"

Discussed and approved
on the methodical meetings
of the Departments of
Internal Medicine N 1 and
Internal Medicine N 2
protocol N 3
dated 16.03.2021

Head of the Department
of Internal Medicine N 1


prof. O. O. Abrahamovych

Head of the Department
of Internal Medicine N 2

 assoc. prof. O. Y. Komarytsya

Approved

by the Profile Methodical Council

on the therapeutic disciplines

protocol N 5 dated 21.03.2021

Head of the Profile Methodical Council

prof. O. M. Radchenko





The working curriculum of the discipline "Internal Medicine" for 6-th year master's students of the Faculty of Medicine, studying at the Danylo Halytsky Lviv National Medical University, specialty "222 Medicine" and "228 Pediatrics" created by the head. Department of Internal Medicine № 1, Prof., Acad. Abrahamovych O.O.; Vice principal of the Department Assoc. Prof., PhD Proniv LM, Assoc. Prof., Ph.D. Pliatsko M.

Changes and additions to the academic discipline program for 2021-2022 academic year

№	Contents of changes (additions)	Date and proroocol № of the department meeting	Notes
1.	The global COVID-19 pandemic. Diagnosis of SARS-CoV-2. Clinical manifestations, prevention and treatment	27.08.2020, protocol № 1	

Head of the Department Prof., Acad. Abrahamovych O. O. _____

Head of the Department Assoc. Prof., PhD O. Y. Komarytsya

INTRODUCTION

The program of study of the discipline "Internal Medicine" is made according to: the educational-professional program (EPP) of preparation of experts of the second (master's) level of higher education Field of knowledge 22 "Health care" specialty 222 "Medicine"

Description of the discipline (abstract)

According to the Curriculum, the end-to-end discipline "Internal Medicine" is carried out in 6 course. The organization of the educational process is carried out according to the European credit transfer system of the organization of the educational process (ECTS).

The program of "Internal Medicine" in the 6-th year involves the study of the basics of internal medicine in its main sections (cardiology, pulmonology, gastroenterology, rheumatology, nephrology, hematology, emergency conditions). Emphasis is placed on the study of etiology, pathogenesis, clinic, diagnosis, treatment and prevention of major and most common diseases of the internal organs, as well as improving practical skills, including a clinical and physical examination of the patient, identification of basic symptoms and syndromes, clinical and diagnostic interpretation standard and additional laboratory and instrumental studies in normal and pathology, differential diagnosis according to the syndrome and nosological principles, determining the tactics of emergency care in case of emergencies, principles of treatment, planning a prevention strategy and prognosis, as well as medical manipulations.

Approximate duration of practical classes - 6.0 hours. The main purpose of this course is to teach students the basics of internal medicine. Students participate in the diagnostic and treatment process of patients under the guidance of teachers of the department. It is also provided to master / get acquainted with the procedures most often used in the practice of internal medicine. Practical classes, clinical tours with assistants, associate professors and professors of the department are the main part of this course. Each student records and reports the clinical results of the patient's examination to the assistant on a daily basis and writes a patient card. Types of classes according to the curriculum are a) practical classes, b) independent work of students.

Thematic plans of practical classes and independent work reveal the problematic issues of the relevant sections of internal medicine.

Practical classes are held on the clinical basis of the department. Methods of organizing practical classes in internal medicine require:

- to make the student a participant in the process of providing medical care to patients from the moment of their hospitalization, examination, diagnosis, treatment to discharge from the hospital;
- to master professional practical skills; skills of teamwork of students, doctors, other participants in the process of providing medical care;
- to form in the student, as in the future specialist, an understanding of responsibility for the level of their training, its improvement during training and professional activities.

For the implementation of the relevant module specified in the first lesson, it is necessary to provide the student with a detailed plan of work in the clinic and provide conditions for its implementation.

This plan should include:

- research that the student must master (or get acquainted with);
- algorithms (protocols) of examinations, diagnosis, treatment, prevention following the standards of evidence-based medicine;
- supervision of patients to be carried out by the student during the study of the discipline;
- reports of the patient's medical history in the study group, at clinical rounds, practical conferences.

Patient management involves:

- 1) clarification of the patient's complaints, medical history and life, surveying organs and systems;
- 2) conducting a physical examination of the patient and determining the main symptoms/syndromes of the disease;
- 3) analysis of the results of laboratory and instrumental research;

- 4) diagnosis;
- 5) appointment of treatment;
- 6) determination of primary and secondary prevention measures;
- 7) report on the results of the examination of the patient by a team of students in the study group, analysis under the guidance of the teacher of the correctness of diagnosis, differential diagnosis, scheduled examination, treatment tactics, assessment of prognosis and performance, prevention.

It is recommended to conduct practical classes with the inclusion of:

- 1) control of the initial level of knowledge with the help of test questions, compiled in the format of a question with 5 answer options, of which 1 - correct and checking workbooks;
- 2) management of 1-2 patients with diseases and conditions corresponding to the subject of the lesson, followed by discussion of the correctness of diagnosis, differential diagnosis and treatment with the use of evidence-based medicine and in accordance with National and European guidelines and protocols;
- 3) consideration of the results of additional research methods (laboratory and instrumental) used in the diagnosis and differential diagnosis, consideration of which is provided by the topic of practical training;
- 4) control of the final level of knowledge on the test tasks made in the A format.

During the practical classes, students are recommended to keep protocols, in which it is necessary to enter brief information about the patients examined during the practical lesson, diagnosis, examination plan and prescribed treatment.

Independent and individual work of students is 21% of the curriculum, is an integral part of educational activities and is included in the ECTS credits of each module and discipline as a whole. It includes:

- preparation for practical classes;
- implementation and protection of ISRS;
- preparation and writing of medical history;
- mastering practical skills;
- preparation for final control;
- writing a workbook on the topic of the lesson.

Teachers of the department provide an opportunity to carry out independent work. During practical classes and final control, control and evaluation of its implementation are carried out.

The Department of Internal Medicine has the right to make changes to the curriculum within 15%. Assimilation of the topic (current control) is controlled in practical classes, assimilation of content modules (intermediate control) - in practical final classes. It is recommended to use the following tools to assess the level of student preparation: test tasks, solving situational problems, conducting laboratory tests and evaluating their results, analysis and evaluation of instrumental research and parameters that characterize the functions of the human body, control of practical skills and medical manipulations.

The final control is made at the last practical lesson to the teacher of the department according to the schedule approved at the educational and methodical meeting of the department. Assessment of student success in the discipline is a rating and is set on a multi-point scale, taking into account the assessment of the mastery of individual modules.

For those students who want to improve their grades in the discipline, upon completion of the study of the discipline, the curriculum provides a deadline for reshaping.

The subject of study is etiopathogenesis, diagnosis, treatment, prevention and emergency care in the clinic of internal medicine.

Interdisciplinary links: based on students' study of human anatomy, medical biology, histology, cytology and embryology, pathomorphology, physiology, pathophysiology, medical and biological

physics, bioorganic and biological chemistry, microbiology, virology and immunology, pharmacology, clinical pharmacology, radiology and radiation medicine, propaedeutics of internal medicine.

Interdisciplinary links:

Discipline	Know
Normal anatomy	<p>Anatomical features of the cardiovascular and pulmonary systems, small and large circulatory system, the structure of the vascular wall, nephron, kidneys, urinary tract, adrenal glands and other endocrine glands; features of heart blood supply; myocardial innervation; structure of sympathetic and parasympathetic nervous systems; the leading system of the heart.</p> <p>Anatomical structure of the digestive system (esophagus, stomach, duodenum, colon and small intestine, liver and biliary tract, pancreas), its blood supply, innervation, function.</p> <p>Anatomical structure of the human skeleton, joints, joint surface, synovial membrane.</p> <p>Anatomical features of hematopoietic organs and vascular structure of different calibers.</p> <p>Anatomical structure of the lymphatic system.</p>
Topographic anatomy	<p>Location and projection of the heart, valvular apparatus of the heart.</p> <p>Topography of vessels and nerves.</p> <p>Topography of the respiratory system (mutual location of bronchi, lungs, pulmonary vessels, pleura)</p> <p>Topography of the digestive system (mutual location of the organs of the gastroduodenal zone, hepato-duodenal zone (liver, gallbladder), small and large intestines)</p> <p>Topography of bones, muscles and joints.</p> <p>Location of the kidneys, ureters, bladder relative to other organs of the abdominal cavity.</p>
Pathological anatomy	<p>The structure of fibrous plaque; morphological substrate of atherosclerosis. Macroscopic and microscopic changes in the case of acute coronary artery occlusion of atherosclerotic origin.</p> <p>Atherosclerotic changes of coronary arteries, ischemic changes in the myocardium.</p> <p>Pathological and anatomical features of pulmonary embolism and pulmonary heart disease.</p> <p>Cellular changes of heart valves of infectious origin and changes of pericardium in case of inflammatory processes of various etiology.</p> <p>Cellular changes of the myocardium in the case of inflammatory processes.</p> <p>Myocardial morphology in the case of different types of heart block, depending on the organic damage to the heart.</p> <p>Changes in the structure of the wall of bronchopulmonary tissue in the case of bronchial asthma, pneumonia, pleurisy, changes in the lung parenchyma in case of pulmonary insufficiency.</p> <p>Inflammatory and anatomical changes of the mucous membrane of the esophagus and stomach (superficial, diffuse antral, interstitial, hypersecretory, type B, type A, diffuse changes in the body of the stomach associated with pernicious anemia, reactive reflux gastritis, type C, peptic ulcers); morphological changes in the case of irritable bowel syndrome, Crohn's disease, nonspecific ulcerative colitis; mechanism of symptoms of acute and chronic cholecystitis, gallbladder dyskinesias, gallstone disease; anatomical changes that can cause liver cirrhosis and pathogenetic mechanisms of various liver cirrhosis syndromes; mechanism of symptoms of chronic pancreatitis and pancreatic cancer.</p>

	<p>Anatomical changes in the diencephalon, endocrine glands, internal organs.</p> <p>Pathological and anatomical features congenital anemia, acute leukemia and chronic leukemia, lymphoma.</p> <p>Morphological changes of connective tissue in the case of specific and nonspecific inflammation.</p> <p>Anomalies of bone formation.</p> <p>Pathological and anatomical features of gout.</p> <p>Pathological and anatomical features of ankylosing spondylitis and reactive arthritis.</p> <p>Pathological and anatomical features of renal amyloidosis and glomerulonephritis.</p> <p>Pathological and anatomical features of pyelonephritis, tubulointerstitial nephritis.</p> <p>Pathological and anatomical changes of the kidneys in the case of primary glomerular lesions.</p>
Histology	<p>Histological structure of the heart (pericardium, myocardium, endocardium), arterial and venous walls.</p> <p>The structure of the wall of the trachea, bronchi, alveoli in normal and pathology.</p> <p>Cellular structure of CO of the esophagus, stomach and duodenum, small and large intestines, walls of the gallbladder and bile ducts, microscopic structure of the liver and histological changes in normal and in case of pathology, morphological signs of CP and pancreatic cancer.</p> <p>Juxta-glomerular apparatus of the kidneys, histological structure of the endocrine glands.</p> <p>Morphological structure of connective tissue.</p> <p>Histological structure of bone, periosteum, cartilage, synovial membrane.</p> <p>Morphological features of erythrocytes, reticulocytes; microscopic structure of lymph nodes, lymphopoiesis; hemogram, myelocytogram normal and in the presence of leukemia; histological features of hematopoietic organs and vascular structure of different calibers.</p>
Normal physiology	<p>Mechanisms of blood pressure regulation.</p> <p>Functions of the sympathetic and parasympathetic nervous systems.</p> <p>Functions of the heart and its conduction system, arteries and veins.</p> <p>Basic methods of respiratory function control; physiological drainage; indicators of the function of external respiration, their value; functional state of gas exchange in the lungs.</p> <p>The main mechanisms that provide antireflux protection; functions of the stomach, duodenum, small and large intestines are normal; functions of the gallbladder, biliary tract, normal bilirubin metabolism and in the case of mechanical jaundice; features of blood supply, innervation of the liver, its functional activity; main endocrine and exocrine functions of the software.</p> <p>Functions of the pituitary gland, adrenal cortex, gonads.</p> <p>Physiological features of connective tissue.</p> <p>Function of joints, physiological age features of structure of bones and joints.</p> <p>Kidney function. The mechanism of formation of primary and secondary urine.</p> <p>Regulation of hematopoiesis, features of coagulant and anticoagulant system are normal.</p>
Pathological physiology	<p>Pressor and depressor mechanisms.</p> <p>The main causes of endothelial damage; risk factors for atherosclerosis; cholesterol theory of atherosclerosis; functional disorders of the nervous</p>

	<p>system.</p> <p>The mechanism of ischemic and necrotic changes in the myocardium. Mechanisms of dysfunction of the myocardium, coronary vessels and conduction system of the heart.</p> <p>Features of coagulant and anticoagulant system in case of pathology. Mechanisms and causes of pulmonary embolism.</p> <p>The mechanism of hemodynamic disorders in the case of infectious endocarditis.</p> <p>The mechanism of hemodynamic disorders in the case of pericarditis. Impaired cardiac conduction.</p> <p>Mechanisms of acute and chronic heart failure.</p> <p>Causes and mechanisms of bronchial patency disorders of the bronchopulmonary system; mechanisms of lung abscess, lung gangrene and bronchiectasis and RF; types of hypoxia, mechanisms of their occurrence, main causes and pathogenesis of RF; indicators of pneumotachometry, spirometry, peak flowmetry depending on the type and stage of ventilation failure.</p> <p>The main pathological factors of GERD; causes and mechanism of dysfunction of the stomach, small and large intestines, gallbladder of the biliary tract; features of pathogenesis of hepatitis, LC; dysfunction of endo- and exocrine functions of the pancreatic gland.</p> <p>Mechanisms of violation of the central regulation of metabolism, in particular fat, hydrocarbon, violation of intermediate metabolism.</p> <p>Mechanisms of autoimmune diseases.</p> <p>Causes and mechanisms of connective tissue dysfunction.</p> <p>Lesions of the musculoskeletal system due to genetic defects, as well as the negative impact of external and internal factors.</p> <p>Causes, mechanism of osteoarthritis.</p> <p>Causes, mechanism of gout.</p> <p>Causes, mechanism of arthritis and arthropathy.</p> <p>Pathological and anatomical features of renal amyloidosis and glomerulonephritis.</p> <p>Causes and mechanisms of kidney disease, disorders of water-electrolyte balance, protein and lipid metabolism.</p> <p>Causes and mechanisms of pathogenesis of kidney disease, leading to chronic kidney disease and acute kidney damage.</p>
Microbiology	<p>Characteristic of pathogens that are etiological factors of infectious endocarditis, pneumonia, pleurisy, peptic ulcer disease. Normal composition of the microflora of the small intestine and its changes according to different age groups; determination of intestinal dysbacteriosis; main pathogens of colon diseases</p>
Biochemistry	<p>Metabolism and function in the body of folic acid, vitamin B12, iron; clinical assessment of changes in biochemical parameters of blood in hemorrhagic diseases.</p> <p>Methods of clinical and laboratory research of blood oxygen balance.</p> <p>Structure and biosynthesis of the main metabolic processes occurring in the colon.</p>
Clinical immunology and allergology	<p>Types of immunological reactions. Methods for determining indicators of humoral and cellular immunity. Immunological methods for the diagnosis of connective tissue diseases.</p>
Propaedeutics of internal diseases	<p>Semiotics of Secondary AH.</p> <p>Semiotics of atherosclerosis and neurocirculatory dystonia. Symptoms of</p>

	<p>asthenic, tachycardia, cardiac, hypertensive, autonomic vascular syndromes. Semiotics of acute coronary syndrome and myocardial infarction. Symptoms of chronic forms of coronary heart disease. Symptoms of pulmonary embolism, acute, subacute and chronic drugs. Semiotics of acquired and congenital heart defects. Symptoms of infectious endocarditis. Semiotics of myocarditis, cardiomyopathies. Semiotics of pericarditis. Principles of operation of the electrocardiograph. Methods of electrocardiography and ECG decoding. Semiotics of arrhythmias. Clinical symptoms of heart block. Interpretation of changes in case of conduction disorders. Symptoms of acute and chronic heart failure. Examination of patients with shortness of breath (collection of complaints, medical history and life, objective examination of the respiratory and cardiovascular systems, analysis of the results of additional methods of examination); identification of the main symptoms and syndromes of bronchial obstruction, asthma, pneumonia, pleurisy and their complications; RF, stages, clinical features. The main symptoms of GERD, dyspepsia, chronic gastritis, clinical signs of gastric and duodenal peptic ulcer, complications of these diseases; clinical signs of celiac disease; examination of patients with lesions of the colon and small intestine; coprological research; detection of symptoms of cholecystitis, cholangitis, dyskinesias of the biliary tract by hypo-, hyper- and mixed type; physical examination of the liver and interpretation of basic studies of liver function; clinical symptoms of obesity. Symptoms of rheumatism and SLE. Symptoms of systemic connective tissue diseases. Symptoms of systemic vasculitis. Methods of examination of joints, symptoms of rheumatoid arthritis. Symptoms of osteoarthritis. Symptoms and semiotics of gout. Symptoms that occur in the case of kidney disease, methods of laboratory and instrumental diagnosis. Symptoms and syndromes that occur in the case of CKD, acute kidney damage. Characteristic complaints, clinical syndromes in case of diseases of the hematopoietic system; ability to collect anamnesis, identify special complaints, conduct clinical examinations of patients with diseases of the hematopoietic system; laboratory methods for assessing hematopoiesis in normal and in the presence of leukemia.</p>
Oncology	<p>Examination of a patient with hematooncological diseases; diagnosis of paraneoplastic reactions. Barrett's esophagus, cancerous and precancerous changes of the esophagus; clinical signs of gastric cancer, malignant and benign neoplasms of the colon, small intestine, benign and malignant tumors of the biliary system, cancerous and precancerous changes in the liver.</p>
Roentgenology	<p>Radiological changes in the case of asthma, pneumonia, pleurisy. Radiological signs of esophageal motor dysfunction, GERD, ulcers, esophageal strictures, diaphragmatic esophageal hernias, tumors, shortening and abnormalities of the esophagus, gastritis and PU of the stomach and duodenum, gastric tumors, chronic enteritis, gluten enteropathy. Whipple</p>

	<p>disease, IBS and IBD, visualization of the pancreatic gland (ultrasound, CT, MRI, angiography, scanning).</p> <p>Radiological stages of rheumatoid arthritis.</p> <p>X-ray signs of osteoarthritis.</p> <p>X-ray features of gouty joint damage.</p> <p>X-ray signs of ankylosing spondylitis and reactive arthritis.</p> <p>Radiological changes in the case of myeloma disease.</p>
Surgery	<p>Clinical signs of complications of GERD, bleeding, perforation, penetration of the duodenum and duodenum, intestinal obstruction, peritonitis, surgical complications of celiac disease and enteropathy; the share of housing and communal services in the structure of surgical diseases; connection of housing and communal services with other surgical diseases; clinical signs of complications of chronic hepatitis</p>
Pharmacology	<p>.Classification and mechanism of action of thrombolytics, narcotic analgesics, anticoagulants and antiplatelets, nitrates, α-adrenoblockers, lipid-lowering drugs, ACE inhibitors, diuretics, calcium antagonists, cardiotropic, sedative drugs.</p> <p>Classification of antiarrhythmic drugs, mechanism of action.</p> <p>Groups and mechanisms of action of drugs that improve cardiac conduction.</p> <p>Antibacterial, antiviral, antifungal drugs, classification, mechanism of action, indications, contraindications, possible complications.</p> <p>Mechanism of action, indications for use and side effects of expectorants and bronchodilators.</p> <p>Antisecretory drugs (anticholinergic drugs, H₂-histamine receptor blockers, proton pump blockers, gastrin receptor antagonists, antacids); gastrocytoprotectors (mucus stimulators, those that form a protective film, enveloping and astringent drugs); Drugs that affect the motor function of the stomach and duodenum.</p> <p>Groups of drugs that are prescribed to correct intestinal dysbacteriosis and normalize digestive processes.</p> <p>Mechanism of action, indications and contraindications of the main drugs used for the treatment of IBS, IBD.</p> <p>Antispasmodics, chologogues, anti-inflammatory, analgesics, mechanisms of their action.</p> <p>Hepatoprotectors, enterosorbents, amino acids, bile acids, the mechanism of their action.</p> <p>Mechanism of action, indications and contraindications to the use of basic drugs in the treatment of CP.</p> <p>Groups and mechanism of action of drugs for the treatment of obesity.</p> <p>Groups of drugs for the treatment of acute rheumatic fever and SLE, mechanisms of their action. Classification, mechanism of action, grounds and warnings for use, complications from the use of NSAIDs, glucocorticoids, cytostatics, aminoquinoline drugs, chondroprotectors, anti-gout drugs.</p> <p>Classification and mechanism of action of drugs used for the treatment of CKD and acute kidney disease.</p> <p>Pharmacological features of drugs used in the treatment of various forms of anemia, leukemia, hemorrhagic diseases.</p>
Social medicine and health care organization	<p>The structure of providing health care to the population for the proper use of resources of the health care system for prevention and treatment</p>
Spa treatment	<p>Resorts for the treatment of chronic diseases of the gastrointestinal tract, rheumatic diseases and diseases of the bronchopulmonary system</p>

1. The purpose and objectives of the discipline

1.1. The purpose of teaching the discipline "Internal Medicine" is to form the ability to apply the acquired knowledge, skills, abilities and understanding to solve typical problems of the doctor in the field of health care, the scope of which is provided by certain lists of syndromes and symptoms of diseases, emergencies and diseases. require special tactics of patient management; laboratory and instrumental research, medical manipulations.

1.2. The main tasks of studying the discipline "Internal Medicine"

- conduct surveys and clinical examinations of patients with major diseases of the digestive, respiratory, blood and hematopoietic organs and analyze their results;
- determine the etiological and pathogenetic factors of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- analyze the typical clinical picture, identify clinical variants and complications of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- establish a preliminary diagnosis of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- prescribe laboratory and instrumental examination of patients with the most common diseases of the digestive, respiratory, blood and hematopoietic organs and their complications;
- based on evaluation of the results of laboratory and instrumental examination, to make a differential diagnosis, substantiate and establish a clinical diagnosis of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- determine the necessary mode of work and rest in the treatment of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- determine the necessary medical nutrition in the treatment of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- determine the principles and nature of treatment in the treatment of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- prescribe treatment, including prognostic-modifying, of the most common diseases of the digestive, respiratory, blood and hematopoietic organs and their complications;
- determine the tactics of emergency medical care based on a diagnosis of emergency;
- provide emergency medical care based on an emergency diagnosis;
- carry out primary and secondary prevention of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- assess the prognosis and efficiency of patients with the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- perform medical manipulations;
- keep medical records;
- adhere to the requirements of ethics, bioethics and deontology in their professional activities.

1.3. Competences and learning outcomes, the formation of which is facilitated by the discipline (relationship with the normative content of training of higher education, formulated in terms of learning outcomes in the EPP).

According to the requirements of the PP, the discipline provides students with the acquisition of competencies:

- *integral*:

ability to solve typical and complex specialized tasks and practical problems in professional activities in the field of health care, or in the learning process, which involves research and/or innovation and is characterized by complexity and uncertainty of conditions and requirements.

- *general*:

GC1. Ability to abstract thinking, analysis and synthesis.

GC2. Ability to learn and master modern knowledge.

- GC3. Ability to apply knowledge in practical situations.
 GC4. Knowledge and understanding of the subject area and understanding of the professional activity.
 GC5. Ability to adapt and act in a new situation.
 GC6. Ability to make informed decisions.
 GC7. Ability to work in a team.
 GC8. Interpersonal skills.
 GC9. Ability to communicate in the state language both orally and in writing.
 GC 11. Skills in the use of information and communication technologies.
 GC 12. Definiteness and perseverance in terms of tasks and responsibilities.
 GC 13. The ability to act socially responsibly and consciously.
 GC 15. Ability to act based on ethical considerations (motives)

- *special (professional, subject):*

- PC1. Skills of interviewing and clinical examination of the patient.
 PC2. Ability to determine the required list of laboratory and instrumental studies and evaluate their results.
 PC3. Ability to establish a preliminary and clinical diagnosis of the disease.
 PC4. Ability to determine the required mode of work and rest during the treatment of diseases.
 PC5. Ability to determine the nature of nutrition in the treatment of diseases.
 PC6. Ability to determine the principles and nature of disease treatment.
 PC7. Ability to diagnose emergencies.
 PC8. Ability to determine the tactics of emergency medical care.
 PC9. Emergency care skills.
 PC11. Skills to perform medical manipulations.
 PC13. Ability to carry out sanitary and hygienic and preventive measures.
 PC15. Ability to determine the tactics of management of persons subject to dispensary supervision.
 PC16. Ability to conduct a performance examination.
 PC17. Ability to keep medical records.
 PC18. Ability to conduct epidemiological and medical-statistical studies of public health; the processing of state, social, economic and medical information.
 PC19. Ability to assess the impact of the environment, socio-economic and biological determinants on the health of the individual, family, population.
 PC20. Ability to analyze the activities of a doctor, department, health care institution, to take measures to ensure the quality of medical care and improve the efficiency of medical resources.
 PC21. Ability to conduct activities for the organization and integration of medical care and marketing of medical services.
 Detailing of competencies according to NQF descriptors in the form of "Competence Matrix".

"Competence Matrix".

№	Classification of competencies by NQF	Knowledge	Skills	Communication	Autonomy and responsibility
1	2	3	4	5	6
Integral competencies					
Ability to solve typical and complex specialized and practical problems in a professional health care activity, or in a learning process that involves research and / or innovation and is characterized by the complexity and uncertainty of conditions and requirements					
General competencies					
1	Ability to abstract thinking, analysis and synthesis.	Know the methods of analysis, synthesis and further modern	Be able to analyze information, make informed decisions, be able	Establish appropriate connections to achieve goals.	Be responsible for the timely acquisition of modern

		learning.	to acquire modern knowledge.		knowledge.
2	Ability to learn and master modern knowledge.	Know the current trends in the industry and analyze them.	Be able to analyze professional information, make informed decisions, acquire modern knowledge.	Establish appropriate connections to achieve goals.	Be responsible for the timely acquisition of modern knowledge.
3	Ability to apply knowledge in practical situations.	Have specialized conceptual knowledge acquired in the learning process.	Be able to solve complex problems and problems that arise in professional activities..	Clear and unambiguous communication of their own conclusions, knowledge and explanations that substantiate them to specialists and non-specialists.	Responsible for making decisions in difficult conditions.
4	Knowledge and understanding of the subject area and understanding of professional activity.	Have a profound knowledge of the structure of professional activity.	Be able to carry out professional activities that require updating and integration of knowledge.	Ability to effectively form a communication strategy in professional activities.	Be responsible for professional development, ability to further professional training with a high level of autonomy.
5	Ability to adapt and act in a new situation. Know the types and methods of adaptation, principles of action in a new situation.		Be able to apply means of self-regulation, to be able to adapt to new situations (circumstances) of life and activity.	Establish appropriate connections to achieve results.	Be responsible for the timely use of self-regulatory methods.
6	Ability to make an informed decision.	Know the tactics and strategies of communication, laws and ways of communicative behavior.	Be able to make informed decisions, choose ways and strategies communication to ensure effective teamwork.	Use communication strategies and interpersonal skills..	Be responsible for the choice and tactics of communication
7	Ability to work in a team.	Know the tactics and strategies of communication, laws and ways of communicative behavior	. Be able to choose ways and strategies of communication to ensure effective teamwork.	Use communication strategies	Be responsible for the choice and tactics of communication.

8	Interpersonal skills.	Know the laws and methods of interpersonal interaction.	Be able to choose ways and strategies of communication for interpersonal interaction.	Use interpersonal skills.	Be responsible for the choice and tactics of communication.
9	Ability to communicate in the state language both orally and in writing.	Have a perfect knowledge of the state language.	Be able to apply knowledge of the state language, both orally and in writing.	Use the state language in professional and business communication and in the preparation of documents.	Be responsible for fluency in the state language, for the development of professional knowledge.
10	Ability to communicate in a foreign language.	Have a basic knowledge of a foreign language	. Be able to communicate in a foreign language.	Use a foreign language in professional activities.	Be responsible for the development of professional knowledge using a foreign language.
11	Skills in the use of information and communication technologies.	Have deep knowledge in the field of information and communication technologies used in professional activities.	Be able to use information and communication technologies in the professional field, which requires updating and integration of knowledge	Use information and communication technologies in professional activities.	. Be responsible for the development of professional knowledge and skills.
12	Definiteness and perseverance in terms of tasks and responsibilities.	Know the responsibilities and ways to accomplish the tasks.	Be able to set goals and objectives to be persistent and conscientious in the performance of duties.	Establish interpersonal relationships to effectively perform tasks and responsibilities..	Responsible for the quality of the tasks
13	The ability to act socially responsibly and consciously.	Know your social and community rights and responsibilities.	Form one's civic consciousness, to be able to act in accordance with it	. Ability to convey one's public and social position.	Be responsible for your civic position and activities.
14	Ability to act on the basis of ethical considerations (motives)	Know the basic ethical and deontological principles necessary in professional activities	Be able to apply ethical considerations (motives) in the performance of professional duties	Adhere to the requirements of ethics, bioethics and deontology in their professional activities	Be responsible for compliance with the requirements of ethics, bioethics and deontology in their professional activities
Special (professional, subject) competencies					

1	Skills of interviewing and clinical examination of the patient.	Have specialized knowledge about the person, his organs and systems, know the methods and standard schemes of questioning and physical examination of the patient.	Be able to conduct a conversation with the patient on the basis of algorithms and standards, using standard techniques to conduct a physical examination of the patient. Be able to assess the state of human health.	Effectively form a communication strategy when communicating with the patient. Enter information about the state of human health in the relevant medical records.	Be responsible for the quality collection of information obtained through interviews, surveys, examinations, palpation, percussion of organs and systems and for the timely assessment of the state: human health and for taking appropriate measures.
2	Ability to determine the required list of laboratory and instrumental studies and evaluate their results.	Have specialized knowledge about the person, his organs and systems, standard methods of laboratory and instrumental research (according to list 4).	Be able to analyze the results of laboratory and instrumental studies and on their basis to assess information about the patient's diagnosis (according to list 4).	Form and communicate to the patient and specialists the necessary conclusions list of laboratory and instrumental studies (according to list 4).	Be responsible for deciding on the evaluation of laboratory and instrumental research results
3	Ability to establish a preliminary and clinical diagnosis of the disease.	Have specialized knowledge about man, his organs and systems; standard examination methods; disease diagnosis algorithms; algorithms for isolating leading symptoms or syndromes (according to list 1); previous and clinical diagnoses (according to list 2); methods of laboratory and instrumental examination	Be able to conduct a physical examination of the patient; be able to make an informed decision about the selection of the leading clinical symptom or syndrome; be able to make a preliminary and clinical diagnosis of the disease (according to list 2); to appoint laboratory and instrumental examination of the patient (according to list 3) by	On the basis of normative documents to keep medical documentation of the patient (card of the outpatient / inpatient, etc.).	Adhering to ethical and legal norms, be responsible for making informed decisions and actions regarding the correctness of the established preliminary and clinical diagnosis of the disease.

		(according to list 3); knowledge of human condition assessment.	applying standard methods.		
4	Ability to determine the required mode of work and rest in the treatment of diseases.	Have specialized knowledge about man, his organs and systems; ethical and legal norms; algorithms and standard schemes for determining the mode of work and rest during treatment, on the basis of preliminary and clinical diagnosis of the disease (according to list 2).	Be able to determine, on the basis of preliminary and clinical diagnosis, by making an informed decision the necessary mode of work and rest in the treatment of the disease (according to list 2).	Form and inform the patient and specialists about the necessary mode of work and rest in the treatment of the disease (according to list 2).	Be responsible for the validity of the appointment of work and rest in the treatment of the disease (according to list 2).
5	Ability to determine the nature of nutrition in the treatment of diseases.	Have specialized knowledge about man, his organs and systems; algorithms and standard schemes of nutrition in the treatment of diseases (according to list 2).	Be able to determine, on the basis of preliminary and clinical diagnosis, the nature of nutrition in the treatment of diseases (according to list 2).	To form and communicate to the patient, specialists conclusions about nutrition in the treatment of the disease (according to list 2).	Be responsible for the validity of the definition of nutrition in the treatment of the disease (according to list 2).
6	Ability to determine the principles and nature of disease treatment.	Have specialized knowledge of algorithms and standard schemes of treatment of diseases (according to list 2).	Be able to determine the principles and nature of treatment of the disease (according to list 2).	Form and communicate to the patient and specialists their own conclusions about the principles and nature of treatment (according to list 2).	Be responsible for deciding on the principles and nature of treatment of the disease (according to list 2).
7	Ability to diagnose emergencies.	Have specialized knowledge about the person, his organs and systems, standard methods of human examination (at home, on the street, in a health	Be able, in the absence of information, using standard techniques, by making an informed decision to assess the human condition	Under any circumstances, adhering to the relevant ethical and legal norms to make an informed decision on the assessment of the human condition,	Be responsible for the timeliness and effectiveness of medical measures to diagnose emergencies.

		care facility) in the absence of information.	and make a diagnosis (according to list 3).	diagnosis and organization of the necessary medical measures depending on the human condition; fill in the relevant medical documents.	
8	Ability to determine the tactics of emergency medical care.	Know the legal framework for the provision of emergency medical care, in particular the law of Ukraine "On emergency medical care".	Have specialized knowledge about urgent human conditions; principles of emergency medical care. Be able to identify emergencies (according to list 3); principles and tactics of emergency medical care; to carry out organizational and diagnostic measures aimed at saving and saving human life.	Reasonable formulate and convey to the patient or his / her legal representative the need for emergency care and to obtain consent for medical intervention.	Be responsible for the correct determination of the emergency condition, its severity and tactics of emergency medical care.
9	Emergency care skills	Have specialized knowledge about the structure of the human body, its organs and systems; algorithms for providing emergency medical care in emergencies (according to list 3).	Be able to provide emergency medical care in an emergency (according to list 3).	Explain the need and procedure for emergency medical care.	Be responsible for the timeliness and quality of emergency medical care.
10	Ability to carry out medical and evacuation measures	Know the principles of medical and evacuation measures			
11	Skills to perform medical manipulations.	Have specialized knowledge about man, his organs and systems; knowledge of	Be able to perform medical manipulations (according to list 5).	Reasonable form and bring to the patient, specialists conclusions about the need for	Be responsible for the quality of medical manipulations (according to

		algorithms for performing medical manipulations (according to list 5).		medical manipulations (according to list 5)	list 5).
13	Ability to take preventive measures.	Know the principles of organization of nutrition, mode of activity and rest, primary disease prevention; principles and methods of promoting a healthy lifestyle	Have the skills to develop medical and preventive measures. Be able to organize the promotion of a healthy lifestyle, primary prevention of diseases.	Use the local press to publish health promotion activities, use radio, television, lectures and interviews.	Be responsible for timely and high-quality measures to promote a healthy lifestyle, primary disease prevention.
14	Ability to take preventive measures against infectious diseases				
15	Ability to determine the tactics of management of persons subject to dispensary supervision.	Know the relevant ethical and legal norms for medical examination of the population; examination tactics and principles of secondary prevention of patients subject to dispensary supervision; to know the principles of organization of primary prevention of healthy persons subject to dispensary supervision	Be able to assess the health of patients and the affected population; to organize medical examination of persons subject to dispensary supervision.	Organize dispensary supervision of patients (secondary disease prevention), healthy people who are subject to dispensary supervision (primary disease prevention).	Be responsible for the quality of the organization of dispensary supervision of certain contingents of persons
16.	Ability to conduct an examination of working ability	Have a basic knowledge of medical and social examination	Be able to draw up appropriate documents certifying temporary incapacity	Organize Interaction with the management of the unit, medical advisory commission (MAC), medical and social expert commission (SEC) concerning	Be responsible for the validity of decisions on medical and social examination of working capacity

				working inability	
17	Ability to keep medical records	Know the system of official document management in the professional work of a doctor, including modern computer information technology.	Be able to determine the source and location of the required information depending on its type. Be able to process information and analyze the information obtained	Obtain the necessary information from a specific source and on the basis of its analysis to form appropriate conclusions	. Be responsible for the completeness and quality of the analysis of information and conclusions based on its analysis.
18	Ability to conduct epidemiological and medical-statistical studies of public health; processing of state, social, economic and medical information	Know standard methods, including modern computer information technologies, processing of state, social and medical information	Possess standard methods of medical and statistical research.	Formulate conclusions about the state of health of the population on the basis of epidemiological and medical-statistical studies. Interact with specialists of information and analytical departments to obtain information about the state of health of the population.	Be responsible for the validity of the conclusions about the state of health of the population; high-quality and timely execution of statistical processing and analysis of the received information
19	Ability to assess the impact of the environment, socio-economic and biological determinants on the health of the individual, family, population	Know the methods of assessing the health of the population and the principles of forming risk groups	Be able to assess the health of the population and plan preventive measures	To draw conclusions on the state of health of the population, on the basis of information on the relationship with environmental factors, socio-economic and biological determinants to make proposals to the relevant authorities and institutions for preventive measures. Interact with	Be responsible for timely conclusions on the state of public health based on the negative impact of environmental factors, socio-economic and biological determinants, for timely submission of proposals for appropriate preventive measures

				specialists of sanitary and hygienic profile and heads of enterprises, institutions and relevant departments on nature protection, environment	
20	Ability to analyze the activities of doctors, departments, health care facilities, take measures to ensure the quality of medical care and improve the efficiency of medical resources	Know the main indicators that characterize the activities of health care facilities / units; medical and organizational factors that affect the activities of the doctor of the unit, health care institution; characteristics of the quality of medical care; components of improving the quality of medical care; basic requirements for standardization of medical care. Know the effectiveness of various forms of medical care; basics of pricing in health care and elements of the price of medical services; methods of economic evaluation of alternative medical interventions	Be able to calculate the main indicators of the doctor, department, health care institution and evaluate them in the dynamics. Be able to identify defects in activities and the reasons for their formation. Be able to choose the appropriate unified clinical protocol for medical care; to develop the general scheme of the local protocol of rendering of medical care; calculate indicators of structure, process and results of activity; identify factors that hinder the improvement of the quality and safety of medical care. Be able to assess the cost of medical services, choose a rational form of organization of medical services. Be able to justify the choice of economic analysis	Obtain information from relevant sources on the activities of a doctor, department, health care institution, inform relevant officials to ensure conditions for providing quality and safe medical care. Formulate conclusions on the justification of the form of organization of medical care, the method of financing the health care institution; on ways to reduce the cost of medical services; conclusions on the assessment of alternative medical interventions on the basis of economic analysis	Be responsible for the validity of decisions to improve the activities of the doctor, institution / health care unit; improving the efficiency of the use of available resources of the unit, institution, health care system

			method for comparison of alternative medical interventions.		
21	Ability to carry out activities for the organization and integration of medical care and marketing of medical services	Have specialized knowledge about the health care system, its goals, functions, general principles of organization, basic components, types of medical care and basic types of health care facilities I, who provide different types of medical care, their structure, functions, forms and methods of work organization, the scope of competencies of doctors of different specialties and forms of coordination of their activities with other specialists. Know the basic principles and conditions of integration of medical care. Know the basics of marketing and tools for promoting medical services in the market	Be able to organize their own work, work in a team with junior medical staff or in an interdisciplinary team; coordinate activities with other specialists of the unit, health care institution; to determine the rational medical route of the patient according to the structural subdivisions of the institution or various health care institutions that are involved in the provision of medical care. Be able to choose tools to promote health services in the market based on the analysis of needs and demand of the population	Interact, including information, with colleagues in your institution and other health care facilities, subordinates and managers. Organize interaction with organizations and institutions outside the health sector. To form and inform the population about the expediency of using the offered medical services	Be responsible for the validity of conclusions on improving the organization, routing and integration of health care; validity of decisions on the use of selected tools to promote medical services Ability to participate in the formation of collective responsibility for performance

Learning outcomes:

The discipline "Internal Medicine" contributes to the formation of integrative final program learning outcomes, for which students must:

- conduct professional activities in social interaction based on humanistic and ethical principles; identify future professional activities as socially significant for human health;
- apply knowledge of general and professional disciplines in professional activities;
- comply with the norms of the sanitary and hygienic regime and safety requirements during professional activities;
- use the results of independent search, analysis and synthesis of information from various sources to solve typical problems of professional activity;
- argue information for decision-making, be responsible for them in standard and non-standard professional situations; adhere to the principles of deontology and ethics in professional activities;
- to carry out professional communication in modern Ukrainian, to use skills of oral communication in a foreign language, analyzing texts of professional orientation and translate foreign language information sources;
- adhere to the norms of communication in professional interaction with colleagues, management, work effectively in a team;
- analyze the information obtained as a result of scientific research, summarize, systematize and use it in professional activities.

Program learning outcomes

PLO 1. Collect data on patient complaints, medical history, life history, conduct and evaluate the results of physical examination.

PLO 2. Evaluate information on the diagnosis, using a standard procedure based on the results of laboratory and instrumental studies.

PLO 3. Highlight the leading clinical symptom or syndrome. Establish the most probable or syndromic diagnosis of the disease. Assign laboratory and/or instrumental examination of the patient. Carry out differential diagnosis of diseases. Establish a preliminary and clinical diagnosis.

PLO 4. To determine the necessary mode of work and rest in the treatment of the disease.

PLO 5. To determine the necessary medical nutrition in the treatment of the disease.

PLO 6. To determine the principles and nature of treatment (conservative, operative) of the disease.

PLO 7. Determine the tactics of emergency medical care based on a diagnosis of emergency.

PLO 8. Provide emergency medical care based on an emergency diagnosis.

PLO 11. Perform medical manipulations.

PLO 12. To form among the fixed contingent of the population dispensary groups of patients; groups of healthy people subject to dispensary supervision. Implement a system of anti-epidemic and preventive measures within primary health care. Implement a system of primary prevention measures within primary health care. Organize secondary and tertiary prevention measures among the assigned contingent of the population.

PLO 13. Carry out detection and early diagnosis of infectious diseases; primary anti-epidemic measures in the center of an infectious disease.

PLO 14. To determine the tactics of examination and secondary prevention of patients subject to dispensary supervision; tactics of examination and primary prevention of healthy persons subject to dispensary supervision

PLO 15. To determine the presence and degree of restrictions on life, type, degree and duration of disability with the execution of relevant documents.

PLO 17. Conduct screening for major non-communicable diseases; evaluate morbidity indicators, integrated health indicators; identify risk factors for the occurrence and course of disease; to form risk groups of the population. Determine the source and/or location of the required information depending on its type; receive the necessary information from a specific source; process and analyze the received information.

PLO 18. Identify negative environmental factors; to analyze the incidence of the population, identifying risk groups.

PLO 19. Carry out the selection and use of unified clinical protocols for the provision of medical care, developed based on evidence-based medicine; develop and use local health care protocols.

PLO 20. To form rational medical routes of patients.

PLO 21. Form goals and determine the structure of personal activities.

PLO 22. Adhere to a healthy lifestyle, use the techniques of self-regulation and self-control

PLO 23. To be aware of and guided in its activities by civil rights, freedoms and responsibilities, to raise the general educational and cultural level.

PLO 24. Adhere to the requirements of ethics, bioethics and deontology in their professional activities.

2. Information volume of the cross-cutting discipline "Internal Medicine"

7,5 ECTS credits (225 hours) are allocated for the V year study of the discipline "Internal Medicine".

Structure of the discipline	Number of credits, hour			IS (independent study)	Year of study semester	Type of control
	Total	Classroom				
		Lectures (hrs)	Practical classes (hrs)			
Course title: "Internal medicine"	12 credits 360 hrs	0	198	162	VI year (XI-XII semesters)	credit

2.1. The structure of the discipline

Topic	Lectures	Practical classes	Independent work
The global COVID-19 pandemic. Diagnosis of SARS-CoV-2. Clinical manifestations, prevention and treatment. Management of the patient with arterial hypertension		6	3
Management of patients with symptomatic hypertension		6	3
Management of a patient with hypotension and fainting		6	3
Management of a patient with cardiac arrhythmia		6	4
Management of a patient with impaired cardiac conduction		6	4
Management of a patient with cardialgia and chest pain		6	3
Management of a patient with stable angina, painless myocardial ischemia, unstable angina, myocardial infarction		6	4
Management of a patient with cardiomegaly, heart murmurs, with acrocyanosis		6	4
Management of a patient with heart failure		6	3
Management of a patient with arthralgias / myalgias, joint syndrome, arthrosis		6	3
Management of a patient with hemorrhagic vasculitis, with systemic connective tissue diseases		6	3
Management of a patient with gastric dyspepsia, dysphagia, heartburn, abdominal pain, chronic diarrheal syndrome, constipation		6	4

Management of a patient with jaundice ascites, portal hypertension, hepatic encephalopathy, hepatomegaly and hepatolienal syndrome		6	4
Management of a patient with bronchoobstructive syndrome and chronic cough		6	3
Management of a patient with infiltrative darkening in the lungs, with community-acquired pneumonia, pleural effusion		6	4
Management of a patient with hemoptysis and lung abscess, asphyxia, respiratory failure		6	4
Management of a patient with fever of uncertain genesis		6	3
Management of a patient with urinary and nephrotic syndromes, with edema syndrome		6	4
Management of a patient with chronic kidney disease		6	3
Management of a patient with anemia		6	4
Management of a patient with leukemoid reaction and leukemia, with polycythemia, lymphadenopathy		6	4
Curation of a patient with severe pneumonia, acute respiratory distress syndrome, code		6	4
Curation of a patient with a complicated hypertensive crisis, cardiac asthma and pulmonary edema		6	4
Curation of a patient with acute coronary syndrome, myocardial infarction, cardiogenic shock		6	4
Curation of a patient with pulmonary embolism. Tactics of treatment for sudden cardiac death		6	4
Curation of a patient with acute abdominal pain and gastrointestinal bleeding		6	4
Curation of a patient with severe anemia and agranulocytosis, with purpura, acute thrombosis.		6	4
Curation of patients with shocks		6	4
Curation of patients with coma. Credit lesson.		6	4
Curation of patients with writing of cards of patients on subjects of employment			33
Development of algorithms for emergency care			4
Preparation and report at clinical conferences of the department. Writing abstracts, articles in the chosen field with the participation of a supervisor. Preparation and report of the abstract / scientific report at the practical lesson.			5
Total hours _360_ / _12_ ECTS credits	0	198	174
Form of final control	Credit		

Thematic plan of practical classes

№ .	TOPIC	Number of
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		hours
1.	World pandemic COVID-19. Diagnosis of SARS-CoV-2. Clinical manifestations, prevention and treatment. Management of the patient with arterial hypertension	6
2.	Management of patients with symptomatic hypertension	6
3.	Management of a patient with hypotension and fainting	6
4.	Management of a patient with cardiac arrhythmia	6
5.	Management of a patient with impaired cardiac conduction	6
6.	Management of a patient with cardialgia and chest pain	6
7.	Management of a patient with stable angina, painless myocardial ischemia, unstable angina, myocardial infarction	6
8.	Management of a patient with cardiomegaly, heart murmurs, with acrocyanosis	6
9.	Management of a patient with heart failure	6
10.	Management of a patient with arthralgias / myalgias, joint syndrome, arthrosis	6
11.	Management of a patient with hemorrhagic vasculitis, with systemic connective tissue diseases	6
12.	Management of a patient with gastric dyspepsia, dysphagia, heartburn, abdominal pain, chronic diarrheal syndrome, constipation	6
13.	Management of a patient with jaundice ascites, portal hypertension, hepatic encephalopathy, hepatomegaly and hepatolienal syndrome	6
14.	Management of a patient with bronchoobstructive syndrome and chronic cough	6
15.	Management of a patient with infiltrative darkening in the lungs, with community-acquired pneumonia, pleural effusion	6
16.	Management of a patient with hemoptysis and lung abscess, asphyxia, respiratory failure	6
17.	Management of a patient with fever of unknown origin	6
18.	Management of a patient with urinary and nephrotic syndromes, with edema syndrome	6
19.	Management of a patient with chronic kidney disease	6
20.	Management of a patient with anemia	6
21.	Management of a patient with leukemoid reaction and leukemia, with polycythemia, lymphadenopathy	6
22.	Curation of a patient with severe pneumonia, acute respiratory distress syndrome, code	6
23.	Curation of a patient with a complicated hypertensive crisis, cardiac asthma and pulmonary edema	6
24.	Curation of a patient with acute coronary syndrome, myocardial infarction, cardiogenic shock	6
25.	Curation of a patient with pulmonary embolism. Tactics of treatment for sudden cardiac death	6
26.	Curation of a patient with acute abdominal pain and gastrointestinal bleeding	6
27.	Curation of a patient with severe anemia and agranulocytosis, with purpura, acute thrombosis.	6
28.	Curation of patients with shocks	6
29.	Curation of patients with coma.	6
	Total	174

Thematic plan of independent work of students

№ .	TOPIC	Number
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		of hours
1.	- Preparation for a practical lesson on "World pandemic COVID-19. Diagnosis of SARS-CoV-2. Clinical manifestations, prevention and treatment. Management of a patient with arterial hypertension". Improving the method of registration and interpretation of ECG, blood pressure measurement and interpretation of the results on the topic. – Improving the interpretation of the results of laboratory research methods (blood creatinine, glomerular filtration rate, blood electrolytes).	4
2.	- Preparation for a practical lesson on "Management of patients with symptomatic hypertension." Improving the method of ECG recording, Doppler echocardiography, blood pressure measurement and interpretation of the results on the topic. – Improving the interpretation of the results of laboratory research methods (blood creatinine, glomerular filtration rate, blood electrolytes).	5
3.	- Preparation for a practical lesson on "Management of a patient with hypotension and fainting." – Improving the technique of ECG interpretation on the topic. - Improving the method of measuring blood pressure and interpretation of the results. - Improving the interpretation of the results of laboratory research methods (general blood test, blood glucose, ALT, AST, creatinine, GFR, total bilirubin with fractions, electrolytes, coagulogram, arterial and venous blood gases and acid-base status of blood).	34
4.	- Preparation for a practical lesson on "Managing a patient with a heart rhythm disorder." - Improving the technique of ECG interpretation on the topic. - Improving the interpretation of coagulogram results.	4
5.	- - Preparation for a practical lesson on "Managing a patient with impaired cardiac conduction." - Improving the interpretation of the ECG in case of cardiac conduction disorders on the topic.	4
6.	Preparation for a practical lesson on "Management of a patient with cardialgia and chest pain." - Improving the interpretation of the ECG and test results with dosed exercise on the topic. - Improving the interpretation of the results of X-ray examination of the chest on the topic. - Improving the interpretation of the results of laboratory methods of examination (biochemical markers of myocardial necrosis, coagulogram, D-dimer, blood lipid spectrum).	4
7.	- Preparation for a practical lesson on "Management of a patient with stable angina, painless myocardial ischemia, unstable angina, myocardial infarction." - Improving the interpretation of the ECG, the results of the test with dosed exercise, ECHO-CG on the topic. - Improving the interpretation of the results of laboratory methods of examination (biochemical markers of myocardial necrosis, coagulogram, D-dimer, blood lipid spectrum).	4
8.	- Preparation for a practical lesson on "Management of a patient with cardiomegaly, heart murmurs, acrocyanosis." - Improving the interpretation of ECG results, Doppler echocardiography on the topic. - Improving the interpretation of X-ray examination of the chest on the topic. - Improving the interpretation of the results of laboratory research methods (arterial and venous blood gases).	4
9.	- Preparation for a practical lesson on "Management of a patient with heart failure." - Improving the interpretation of Doppler echocardiography on the topic. - Improving the interpretation of the results of laboratory research methods (analysis of ascitic fluid, coagulogram, blood creatinine, glomerular filtration rate, blood electrolytes, the concentration of natriuretic peptide in the blood).	4

10.	Preparation for a practical lesson on "Management of a patient with arthralgias / myalgias, joint syndrome, osteoarthritis". - Improving the interpretation of the results of X-ray examination of the spine, chest and sacroiliac joints, radiological examination of the joints on the topic. - Improving the interpretation of the results of laboratory research methods (indicators of immune status, synovial fluid analysis, general blood test, acute blood parameters, uric acid, RF, anti-CCP, ANA, ds-DNA, HLA-B27, SCL-70, Jo-1 , KFC).	4
11.	Preparation for a practical lesson on "Management of a patient with hemorrhagic vasculitis, with systemic connective tissue diseases." - Improving the interpretation of the results of X-ray examination of the spine, chest and sacroiliac joints, radiological examination of the joints on the topic. - Improving the interpretation of the results of laboratory research methods (indicators of immune status, synovial fluid analysis, general blood test, acute phase blood counts, uric acid, RF, anti-CCP, ANA, ds-DNA, SCL-70, pANCA, cANCA, Hbs Ag)	4
12.	- Preparation for a practical lesson on "Management of a patient with gastric dyspepsia, dysphagia, heartburn, abdominal pain, chronic diarrheal syndrome, constipation." - Improving the interpretation of the results of endoscopic examination of the digestive tract (EFGDS, colonoscopy) on the topic. - Improving the interpretation of the results of the breath test with 13C-urea. - Improving the interpretation of the results of respiratory tests (with 13C-triglycerides, 13C-starch, 13C-lactose and hydrogen test with glucose and lactulose). - Improving the interpretation of the results of the study of the secretory function of the stomach (topographic express pH-metry). - Improving the interpretation of the results of daily pH monitoring of the esophagus. - Improving the interpretation of the results of biochemical blood tests (total blood protein and its fractions, serum transaminases, total bilirubin and its fractions, alkaline phosphatase, alpha-amylase, GGTP). - Improving the interpretation of the results of fecal elastase-1, fecal calprotectin. - Improving the interpretation of the results of the coprocytogram.	4
13.	- Preparation for a practical lesson on "Management of a patient with jaundice, ascites, portal hypertension, hepatic encephalopathy, hepatomegaly and hepatolienal syndrome." - Improving the interpretation of the results of biochemical blood tests (total bilirubin and its fractions, albumin, serum transaminases, total blood protein and its fractions, alkaline phosphatase, alpha-amylase, GGTP). - Improving the interpretation of the results of serological blood tests (serum markers of viral and autoimmune hepatitis, polymerase chain reaction - qualitative and quantitative analysis, virus genotyping). - Improving the interpretation of the results of multi-moment duodenal sounding, microscopic and biochemical examination of bile. - Improving the interpretation of the results of ultrasound examination of the liver, gallbladder and biliary tract on the topic. - Improving the interpretation of the results of endoscopic examination of the digestive tract (EFGDS) on the topic. -	4
14.	- Preparation for a practical lesson on "Management of a patient with	4

	<p>bronchoobstructive syndrome and chronic cough."</p> <ul style="list-style-type: none"> - Improving the interpretation of the results of X-ray examination of the thoracic cavity on the topic. - Improving the interpretation of the results of spirometry, the results of provocative tests with a bronchodilator on the topic. 	
15.	<ul style="list-style-type: none"> - Preparation for a practical lesson on "Management of a patient with infiltrative darkening in the lungs, with community-acquired and nosocomial pneumonia, pleural effusion." - Improving the interpretation of the results of sonography and X-ray examination of the thoracic cavity in two projections, computed tomography on the topic. - Improving the interpretation of the results of laboratory research methods (general and microbiological examination of sputum; biochemical, cytological, microbiological analysis of pleural fluid). 	4
16.	<ul style="list-style-type: none"> - - Preparation for a practical lesson on "Management of the patient with hemoptysis and lung abscess, asphyxia, respiratory failure." - - Improving the interpretation of the results of X-ray examination of the thoracic cavity, computed tomography on the topic. - - Improving the interpretation of the results of laboratory research methods (coagulogram, D-dimer, arterial and venous blood gases and indicators of acid-base status of blood). - - Mastering the skills of interpretation of general blood tests, sputum analysis (bacteriological, microscopic, determination of sensitivity to antibiotics). 	4
17.	<ul style="list-style-type: none"> - - Preparation for a practical lesson on " Management a patient with a fever of unknown origin." - - Improving the interpretation of X-ray examination of the chest, ultrasound examination of the abdominal cavity on the topic. - - Improving the interpretation of the results of laboratory research methods (general blood test, general urine test, bacteriological culture, procalcitonin, ANA, ds-DNA). 	4
18.	<ul style="list-style-type: none"> - - Preparation for a practical lesson on "Management of a patient with urinary and nephrotic syndromes, with edema syndrome." - - Improving the interpretation of the results of radiological studies of the urinary system on the topic. - - Improving the interpretation of the results of laboratory research methods (general blood test; general urine test, urine test by OZ Nechiporenko and SS Zymnitsky, microbiological study of urine, daily proteinuria; total bilirubin and its fractions, total protein with protein fractions, blood transaminases, creatinine, urea, blood uric acid, cholesterol, glomerular filtration rate). - - Improving the interpretation of Doppler echocardiography on the topic. - 	4
19.	<ul style="list-style-type: none"> - - Preparation for a practical lesson on "Management of a patient with chronic kidney disease." - - Improving the interpretation of the results of laboratory research methods (general blood test, general urine test, electrolytes, urea, creatinine, glomerular filtration rate). 	4
20.	<ul style="list-style-type: none"> - - Preparation for a practical lesson on "Managing a patient with anemia". - - Repetition of the method of determining blood type. - - Repetition of the method of transfusion of blood components and blood 	4

	<p>substitutes.</p> <ul style="list-style-type: none"> - - Improving the interpretation of general blood tests, bone marrow punctate and trepan biopsy. - Improving the interpretation of the results of iron metabolism studies (serum iron, total serum iron binding capacity, iron transferrin saturation, ferritin level). 	
21.	<ul style="list-style-type: none"> - Preparation for a practical lesson on "Management of a patient with leukemic reaction and leukemia, with polycythemia, lymphadenopathy." - Improving the interpretation of the general analysis of blood, bone marrow punctate, the results of cytochemical studies. - Improving the interpretation of the results of cytological examination of the lymph node biopsy. - Mastering the skills of interpreting the results of X-ray examination of bones on the topic. 	5
22.	<ul style="list-style-type: none"> - Preparation for a practical lesson on "Curation of a patient with severe pneumonia, acute respiratory distress syndrome, code". - Improving the interpretation of the results of X-ray examination of the thoracic cavity, CT on the topic. - Improving the interpretation of the results of laboratory research methods (general analysis of blood, bilirubin and its fractions, transaminases, D-dimer, procalcitonin, CRP, creatinine, urea, arterial and venous blood gases and indicators of acid-base blood status, coagulogram). 	4
23.	<ul style="list-style-type: none"> - Preparation for a practical lesson on "Curation of a patient with a complicated hypertensive crisis, cardiac asthma and pulmonary edema." - Improving the method of measuring blood pressure and interpretation of the results. - Improving the interpretation of ECG results, Doppler echocardiography on the topic. - Improving the interpretation of the results of the analysis of biochemical parameters of the blood (markers of myocardial necrosis). - 	4
24.	<ul style="list-style-type: none"> - Preparation for a practical lesson on "Curation of a patient with acute coronary syndrome, myocardial infarction, cardiogenic shock." - Improving the method of registration and interpretation of ECG, Echo-CG on the topic. - Improving the interpretation of the results of laboratory research methods (biochemical markers of myocardial necrosis). 	4
25.	<p>Preparation for a practical lesson on "Curation of a patient with pulmonary embolism. Tactics of treatment for sudden cardiac death.</p> <ul style="list-style-type: none"> - Improving the interpretation of the results of Echo-CG and X-ray examination of the thoracic cavity on the topic. - Improving the interpretation of the results of laboratory research methods (coagulogram, arterial and venous blood gases and indicators of acid-base status of blood). - Improving the algorithm for mechanical ventilation and indirect heart massage in case of circulatory and respiratory arrest. 	4
26.	<p>Preparation for a practical lesson on "Curation of a patient with acute abdominal pain and gastrointestinal bleeding."</p> <ul style="list-style-type: none"> - Improving the interpretation of the results of endoscopic examination of the 	4

	digestive tract (EFGDS, colonoscopy) on the topic. - Improving the interpretation of the results of biochemical blood tests (total blood protein and its fractions, serum transaminases, total bilirubin and its fractions, alkaline phosphatase, alpha-amylase, GGTP). - Improving the method of determining blood type and transfusion of blood components and blood substitutes.	
27.	- - Preparation for a practical lesson on "Curation of a patient with severe anemia and agranulocytosis, with purpura, acute thrombosis." - Repetition of the method of determining blood type. - Repetition of the method of transfusion of blood components and blood substitutes. - Improving the interpretation of general blood tests, bone marrow punctate and trepan biopsy. - Improving the interpretation of iron metabolism in serum. - Improving the interpretation of the results of the coagulogram, pANCA, sANCA, CRP, D-dimer).-	4
28.	- Preparation for a practical lesson on "Curation of patients with shocks." - Improving the method of registration and interpretation of ECG and echocardiography on the topic.	4
29.	Preparation for a practical lesson on "Curation of patients with coma." - Improving the interpretation of the results of laboratory research methods (general blood test, blood glucose, glycated hemoglobin, ALT, AST, creatinine, GFR, total bilirubin with fractions, albumin, urea, LDH, electrolytes, coagulogram, blood ketone bodies TSH, T3, T4, ACTH, cortisol, aldosterone, arterial and venous blood gases and indicators of acid-base status of the blood).	4
34.	- Curation of patients with writing maps of patients on the topics of classes	29
35.	- Development of algorithms for emergency care	4
36.	- Preparation and report at clinical conferences of the department. - Writing abstracts, articles in the chosen field with the participation of the supervisor. - Preparation and report of the abstract / scientific report at the practical lesson.	5
	TOTAL	156

Topic 1. World pandemic COVID-19. Diagnosis of SARS-CoV-2. Clinical manifestations, prevention and treatment. Management of a patient with hypertension.

Differential diagnosis of arterial hypertension: essential and secondary (renal, endocrine, geodynamic, central genesis, etc.). Stratification of the risk of cardiovascular complications and determination of the prognosis. Drawing up a survey plan. Tactics of patient management depending on the risk group. Principles of non-drug and drug treatment of hypertension. Drugs of the first and second line of treatment. Modern recommendations for the choice of antihypertensive drugs. Treatment standards. Monotherapy and combination therapy. Side effects of antihypertensive drugs. Hypertensive crises, features of treatment tactics. Primary and secondary prevention. Forecast and efficiency.

Topic 2. Management of patients with symptomatic hypertension.

Differential diagnosis of arterial hypotension: vasodepressor fainting, translational orthostatic hypotension, iatrogenic hypotension, fainting in heart, endocrine and nervous diseases, metabolic disorders, hysterical neurosis. Drawing up a plan of examination and tactics of patient management. Laboratory and instrumental methods of additional examination. Vasopressors.

Topic 3. Management of a patient with hypotension and fainting.

Differential diagnosis of arterial hypertension: mechanisms leading to arterial hypertension. Drawing up a plan of examination and tactics of patient management. Laboratory and instrumental methods of additional examination. Antihypertensive drugs.

Topic 4. Management of a patient with cardiac arrhythmia.

Differential diagnosis of atrial and ventricular arrhythmias, atrial fibrillation, sinus node weakness syndromes and Wolf-Parkinson-White. Drawing up a survey plan, additional laboratory and instrumental methods of examination. Tactics of patient management. The main classes of antiarrhythmic drugs, indications for their use, side effects. Treatment standards. Electropulse therapy. Surgical treatments for arrhythmias. Primary and secondary prevention. Prognosis and working ability

Topic 5. Management of a patient with impaired cardiac conduction.

Disorders of atrioventricular conduction, AV-blockade of various degrees (Mobitz 1 and 2). Federico's syndrome. ECG diagnosis of blockades of the legs of the His bundle. Tactics of patient management, additional laboratory and instrumental methods of examination. Drug treatment and pacing. Artificial rhythm drivers. Primary and secondary prevention. Prognosis and working ability

Topic 6. Management of a patient with cardialgia and chest pain.

Differential diagnosis of angina and cardialgia in the case of heart disease, respiratory, digestive, musculoskeletal system, etc. Drawing up a survey plan, additional laboratory and instrumental methods of examination. Tactics of patients depending on the genesis of cardialgia.

Topic 7. Management of a patient with stable angina, painless myocardial ischemia, myocardial infarction.

Typical and atypical angina, diagnostic criteria. Assistance at the pre-hospital and hospital stages. Drawing up of the plan of inspection, additional laboratory and instrumental methods of inspection (ECG with physical activity, daily Holter monitoring, stress-Echo-KG, coronary angiography). Tactics of management of patients depending on a functional class. Existing treatment standards. Endovascular and surgical treatments. Primary and secondary prevention. Forecast and efficiency. Risk of sudden coronary death. Drawing up a survey plan, additional laboratory and instrumental methods of examination. Tactics of patient management. Primary and secondary prevention. Forecast and efficiency.

Types of unstable angina, myocardial infarction: examination plan, additional laboratory and instrumental examination methods, treatment standards, primary and secondary prevention, Prognosis and working ability

Topic 8. Management of a patient with cardiomegaly, heart murmurs, acrocyanosis.

Differential diagnosis of cardiomegaly in heart defects, myocarditis, cardiomyopathies, coronary heart disease. Differential diagnosis of functional and organic, systolic and diastolic noises. Drawing up of the plan of inspection, additional instrumental methods of inspection (roentgenoscopy of lungs and heart, ECG, Echo-KG, coronary angiography). Tactics of patient management. Non-drug, drug and surgical treatment Primary and secondary prevention. Prognosis and working ability

Topic 9. Management of a patient with heart failure.

Right ventricular, left ventricular and biventricular heart failure. Differential diagnosis depending on the leading cause. Drawing up of the plan of inspection, additional instrumental methods of inspection (roentgenoscopy of lungs and heart, ECG, Echo-KG, coronary angiography). Tactics of management of patients depending on a genesis, a functional class and a stage of heart failure. Non-drug, drug and surgical treatment. Treatment standards. Primary and secondary prevention. Prognosis and working ability

Topic 10. Management of a patient with arthralgias, myalgias, joint syndrome, osteoarthritis.

Differential diagnosis of arthralgias, arthritis. Drawing up of the plan of inspection, additional laboratory and instrumental methods of inspection (rheumatic tests, autoimmune markers, radiography, arthroscopy, Echo-KG, MRI). Tactics of management of patients depending on the main reason.

Existing treatment standards. Efficacy and disadvantages of NSAIDs. Indications and contraindications for the use of steroids. Primary and secondary prevention. Forecast and efficiency.

Topic 11. Management of a patient with systemic vasculitis, systemic connective tissue diseases.

Differential diagnosis of systemic vasculitis. Drawing up of the plan of inspection, additional laboratory and instrumental methods of inspection (rheumatic tests, autoimmune markers, radiography, arthroscopy, Echo-KG, NMR). Tactics of management of patients depending on the main reason. Treatment standards. Efficacy and disadvantages of NSAIDs. Indications and contraindications for the use of steroids. Primary and secondary prevention. Forecast and efficiency.

Topic 12. Management of a patient with gastric dyspepsia, dysphagia, heartburn, chronic diarrheal syndrome, constipation.

Definition, organic and functional dyspepsia, main causes and differential diagnosis. Symptoms of red flags. Drawing up a plan of examination, additional laboratory and instrumental methods of examination (upper endoscopy, ultrasound, general and biochemical analyzes). Special methods of examination (breath tests, pH-metry, video capsule endoscopy, X-ray methods). Tactics of management of patients depending on the main reason. Treatment standards. Primary and secondary prevention. Forecast and efficiency.

Differential diagnosis of diarrheal syndrome and constipation. Secretory, exudative, dysmotor and functional diarrhea. The role of intolerance to food components, enzymopathies and immune factors. Malabsorption and maldigestion syndromes. Drawing up an examination plan, the role of radiological, instrumental and functional methods of examination (passage through the small intestine, irigoscopy, colonoscopy, video capsule endoscopy, respiratory tests, fecal analysis, fecal elastase). Tactics of management of patients depending on the reason, differentiated therapy. Treatment standards. Primary and secondary prevention. Forecast and efficiency.

Topic 13. Management of a patient with jaundice, liver damage.

Differential diagnosis under hepatic, hepatic and over hepatic jaundice. Drawing up a survey plan, the role of instrumental and laboratory methods of examination. Tactics of management of patients depending on the reason, differentiated therapy. Existing treatment standards. Primary and secondary prevention. Forecast and efficiency. Differential diagnosis of conditions leading to the development of portal hypertension and ascites. Drawing up a survey plan, the role of instrumental and laboratory methods of examination. Tactics of patient management. Treatment standards. Indications for endoscopic and surgical treatment. Primary and secondary prevention. Forecast and efficiency. Differential diagnosis of hepato-lienal syndrome. Drawing up a survey plan. Tactics of patient management. Hepatoprotectors and antiviral therapy. Treatment standards. Indications for surgical treatment. Primary and secondary prevention. Forecast and efficiency. Differential diagnosis of conditions leading to the development of hepatic encephalopathy, its stage. Drawing up a survey plan, the role of instrumental and laboratory methods of examination. Tactics of patient management. Treatment standards. Efferent methods of treatment. Primary and secondary prevention. Forecast and efficiency.

Topic 14. Management of a patient with bronchoobstructive syndrome and chronic cough.

Differential diagnosis of conditions accompanied by bronchoobstructive syndrome: bronchial asthma and COPD. Drawing up an examination plan, the role of instrumental and laboratory methods of examination (peak fluorimetry, spirometry, radiography, bronchography, CT, bronchoscopy). Tactics of management of patients depending on the reason, differentiated therapy. Indications for transfer of the patient to the intensive care unit. Drug and non-drug treatment. Treatment standards. Primary and secondary prevention. Forecast and efficiency.

Topic 15. Management of a patient with infiltrative darkening in the lungs.

Differential diagnosis of conditions accompanied by the presence of pulmonary infiltrate. Drawing up a plan of examination, the role of radiological, instrumental and laboratory methods of examination (radiography, bronchography, CT, bronchoscopy, biopsy, sputum cultures). Tactics of management of patients depending on the reason, differentiated therapy. Indications for consultations by other specialists (phthisiologist, oncologist, etc.). Drug and non-drug treatment. Primary and secondary prevention. Forecast and efficiency.

Topic 16. Management of a patient with hemoptysis and lung abscess.

Differential diagnosis of conditions accompanied by the presence of hemoptysis (bronchiectasis, tumors, tuberculosis, pneumonia, mitral stenosis, pulmonary infarction, etc.). Existing diagnostic algorithms. Drawing up an examination plan, the role of radiological, instrumental and laboratory methods of examination (radiography, bronchography, CT, bronchoscopy, ultrasound, echocardiography, coagulogram, general and biochemical tests). Tactics of management of patients depending on the reason, differentiated therapy. Indications for consultations by other specialists (phthysiologist, oncologist, surgeon, etc.). Drug and non-drug treatment.

Topic 17. Management of a patient with fever of uncertain origin.

Differential diagnosis of conditions accompanied by the presence of prolonged fever. Existing diagnostic algorithms. Drawing up a plan of examination, the role of radiological, instrumental and laboratory methods of examination (radiography, bronchography, CT, bronchoscopy, ultrasound, general and biochemical tests, blood cultures, urine, bile, sputum). Tactics of management of patients depending on the reason, differentiated therapy. Indications for consultations with other specialists. Drug and non-drug treatment.

Topic 18. Management of a patient with urinary, nephrotic and edematous syndromes.

Determination and characterization of components of urinary and nephrotic syndrome. Differential diagnosis of hematuria, leukocyturia, proteinuria. Drawing up an examination plan, the role of radiological, instrumental and laboratory methods of examination. Tactics of management of patients depending on the reason, differentiated therapy. Drug and non-drug treatment. Existing treatment standards. Primary and secondary prevention. Forecast and efficiency. Differential diagnosis of edema of various origins. Drawing up a survey plan, the role of instrumental and laboratory methods of examination. Tactics of management of patients depending on the reason, differentiated therapy. Drug and non-drug treatment. Advantages and disadvantages of diuretic therapy. Treatment standards. Primary and secondary prevention. Forecast and efficiency.

Topic 19. Management of a patient with chronic renal failure.

Definition and classification. Etiological factors. The concept of "chronic kidney disease". Classification. Pathogenesis of lesions of organs and systems, their clinical manifestations. Clinic and changes in laboratory parameters depending on the stage. Differential treatment at different stages. Renal replacement therapy: hemodialysis, kidney transplantation. Indications and contraindications to hemodialysis, complications. Primary and secondary prevention. Forecast and efficiency.

Topic 20. Management of a patient with anemia.

Definition, classification, criteria for diagnosis and differential diagnosis of iron deficiency and B12-deficiency, hemolytic, hypoplastic, posthemorrhagic anemia. The main causes of iron deficiency. Drawing up an examination plan, the role of laboratory methods of examination in iron deficiency and B12-deficient anemia. Tactics of patient management, medical and non-medical treatment. Indications for blood transfusion. Existing treatment standards. Primary and secondary prevention. Forecast and efficiency.

Topic 21. Management of a patient with leukemic reaction and leukemia.

Definition, main reasons, classification. Differential diagnosis of leukemia and leukemoid reaction. Principles of differentiated treatment. Bone marrow transplantation. Supportive therapy. Primary and secondary prevention. Forecast and efficiency.

Topic 22. Curation of a patient with severe community-acquired and nosocomial pneumonia, with total pleural effusion and pneumothorax.

Standards of diagnosis and treatment. Treatment tactics depending on the severity and prevalence. The role of radiological, instrumental and laboratory methods of additional examination. Indications for pleural puncture. Indications for transfer to the intensive care unit, artificial lung ventilation. Further management of patients.

Topic 23. Curation of a patient with a complicated hypertensive crisis and cardiac asthma and pulmonary edema.

Standards of diagnosis and emergency treatment at the pre-hospital and hospital stage. Tactics of treatment depending on the defeat of target organs. Further management of patients.

Topic 24. Curation of a patient with acute coronary syndrome, myocardial infarction, cardiogenic shock.

Standards of urgent diagnostics and urgent treatment at the pre-hospital and hospital stage. Treatment tactics depending on the rise of the ST segment. Further management of patients.

Topic 25. Curation of a patient with pulmonary embolism. Tactics of treatment for sudden cardiac death.

Standards of urgent diagnostics and urgent treatment at the pre-hospital and hospital stage. Treatment tactics depending on the level of embolization. Further management of patients.

Topic 26. Curation of a patient with acute abdominal pain and gastrointestinal bleeding.

Standards of diagnosis and management of patients. Tactics of management of patients depending on the reason. The role of instrumental and laboratory methods of additional examination. Indications for urgent surgical treatment. Indications for transfer to the surgical department or intensive care unit. Further management of patients.

Topic 27. Curation of a patient with severe anemia and agranulocytosis, with purpura, acute thrombosis.

Standards of diagnosis and management of patients. Tactics of management of patients depending on the reason. The role of endoscopic, instrumental and laboratory methods of additional examination. Conservative treatment. Indications for blood transfusion. Indications for thrombolytic therapy. Further management of patients.

Topic 28. Curation of a patient with shocks.

Existing standards of urgent diagnostics and emergency treatment at the pre-hospital and hospital stage. Tactics of treatment of shocks depending on the reason of occurrence. Further tactics of patient management.

Topic 29. Curation of a patient with coma.

Existing standards for diagnosis and management of patients with coma. Classification of com. Tactics of management of patients depending on the reason of com. The role of instrumental and laboratory methods of additional examination. Emergency care and conservative treatment. Further tactics of patient management.

Independent work

Tasks for independent work

- Report of the abstract in a practical lesson
- Report at clinical conferences of departments
- Report the history of the disease in a practical lesson
- Writing abstracts, articles
- Mastering practical skills
- Review of scientific literature on topics
- Writing a workbook on the topic of the lesson

Independent work is a mandatory part of students' work, which is evaluated separately. It is divided into current (mandatory part is home self-preparation for practical classes and filling in the card of the thematic patient) and individual educational and research tasks. Compulsory independent work of students is an integral part of the study of almost every topic. The quality of the required independent work is taken into account when assessing the success of the lesson. Individual independent work is evaluated by additional points, has different levels of complexity, must be completed by the end of the module.

Independent works on the discipline "Internal Medicine" are made out by students in writing (in the form of a card of the thematic patient), control of performance is carried out constantly during a semester on the corresponding practical employment. Verification of the mastered material on the subject of independent work is carried out on the final modular control.

In practical classes, home self-preparation of independent work is checked, which is provided for the relevant topic of the practical lesson, is assessed during the current control of the topic of the classroom lesson.

Assessment of mastering the topics that are submitted for independent study by students and are not included in the topics of practical classes, is carried out during the final module control with the help of tests and situational tasks.

The organization of the educational process should ensure the participation of students in the management of at least 2/3 of inpatients. If it is not possible to provide supervision of patients with diseases on the topic of the lesson, students fill in the cards of patients with diseases on the relevant topic.

Daily patient examination reports are provided to the associate professor / assistant for supervision. Associate professors / assistants ensure that each student receives the necessary competence in the following areas: questioning the patient, clinical examination, oral report, making diagnostic decisions and determining treatment tactics (critical thinking), filling out documentation.

3. Teaching methods

Practical, visual, verbal, work with a book, video method.

Interactive learning methods such as business games, role-playing games, cases, etc. are used during the classes.

4. Methods of control

Oral, written, test, programmable, practical control, self-control.

Types of control: current and final.

5. Form of final control of learning success: credit

6. Evaluation criteria

Control measures include current and final semester control and certification of graduates.

7. Scheme of accrual and distribution of points received by students

Current control:

Current control is carried out during classes and aims to verify the assimilation of students' learning material.

In the practical lesson, the student examines the patient, analyzes the data, formulates and justifies the previous diagnosis; draws up a plan of additional research methods, documents the examination of the patient in the form of a brief medical history; analyzes the results of additional research methods, compares data in several patients, formulates and substantiates the clinical diagnosis; learns the basic principles of treatment of diseases in the clinic of internal medicine, solves clinical situational problems, makes a brief report on the independent work performed.

Current control during classes should be based on test control, solving situational problems, current interviews, examination of the patient, filling out the patient's card and independent work, after which the student is given a comprehensive assessment. The student must receive a grade for each topic. Forms of assessment of current educational activities should be standardized and include control of theoretical and practical training. The final grade for the current educational activity is set on a 4-point (national) scale.

Criteria for assessing the practical lesson

- Knowledge of theoretical material has significant errors, no homework, initial test control of knowledge written less than 60%, unsatisfactory examination of the patient (unsatisfactory assessment for practical skills), the main test on the topic written on unsatisfactory assessment, the student makes mistakes that can lead until the death of the patient - **unsatisfactory**;
- Knowledge of theoretical material has errors, which, however, can not cause the death of the patient, the initial test control is written at 60-74%, a satisfactory grade for practical skills, test on the topic written on a satisfactory grade, the student makes mistakes that lead to prolong the diagnostic search, but do not threaten the life of the patient - **satisfactory**;

- Knowledge of theoretical material without errors, corresponds to the program, the initial test control is written on 75-89%, the grade "good" for the performed practical skills, the test on the studied topic is written on the grade "good", the student does not make mistakes - **good**.
- Knowledge of theoretical material without errors, corresponds to the program, from basic disciplines excellent knowledge which the student can use in therapy, initial test control is written on 90% and more, an estimation "excellent" for the executed practical skills, control work on the studied subject is written on an estimation "Excellent", the student does not make mistakes, is able to examine the patient, interpret the results of examinations and prescribe modern, individual, with a dosage of treatment - **excellent**.

Final control		
General evaluation system	Participation in the work during the semester (credit) on a 200-point scale	
Rating scales	traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale	
Conditions of admission to the final control	The student attended all practical classes and received at least 120 points for current performance	
Type of final control	Methods of final control	Enrollment criteria
Credit	All topics submitted for current control must be included. Grades from the 4-point scale are converted into points on a multi-point (200-point) scale in accordance with the Regulation "Criteria, rules and procedures for evaluating the results of students' learning activities"	The maximum number of points is 200. The minimum number of points is 120.
Other types of control	6th year students take the Licensing Exam "Step-2" and an objective structured practical (clinical) exam (OSP (K) I)	

Forms of control

Assessment is one of the final stages of learning activities and determining learning success.

The calculation of points is based on the grades obtained by the student on the traditional scale during the study of the discipline during the semester, by calculating the arithmetic mean (AM), rounded to two decimal places. The resulting value is converted into points on a multi-point scale as follows:

$$200/5 \cdot x = CA$$

For convenience, the table of recalculation on a 200-point scale is given:

Recalculation of the average grade for current activities in a multi-point scale for disciplines that end with a credit

4-point scale	200-point scale
5	200
4.97	199
4.95	198
4.92	197
4.9	196
4.87	195
4.85	194
4.82	193
4.8	192

4.77	191
4.75	190
4.72	189
4.7	188
4.67	187
4.65	186
4.62	185
4.6	184
4.57	183
4.52	181
4.5	180
4.47	179

4-point scale	200-point scale
4.45	178
4.42	177

4.4	176
4.37	175
4.35	174
4.32	173
4.3	172
4.27	171
4.24	170
4.22	169
4.19	168
4.17	167
4.14	166
4.12	165

4.09	164
4.07	163
4.04	162
4.02	161
3.99	160
3.97	159
3.94	158

3.35	134
3.32	133
3.3	132
3.27	131
3.25	130
3.22	129
3.2	128
3.17	127
3.15	126
3.12	125
3.1	124
3.07	123
3.02	121
3	120
less 3	not enough

4-point scale	200-point scale
3.92	157
3.89	156
3.87	155
3.84	154
3.82	153
3.79	152
3.77	151
3.74	150
3.72	149
3.7	148
3.67	147
3.65	146
3.62	145
3.57	143
3.55	142
3.52	141
3.5	140
3.47	139
3.45	138
3.42	137
3.4	136

4-point scale	200-point scale
3.37	135

Scores from the discipline are independently converted into both the ECTS scale and the 4-point scale. ECTS scale scores are not converted to a 4-point scale and vice versa.

The scores of students studying in one specialty, taking into account the number of scores scored in the discipline, are ranked on the ECTS scale as follows:

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

Discipline scores for students who have successfully completed the program are converted into a traditional 4-point scale according to the absolute criteria, which are given in the table below:

Score on a multi-point (200) scale	Score on a four-point scale
From 170 to 200 points	«5»
From 140 to 169 points	«4»
From 139 to the minimum number of points that must be scored by student Below the minimum number of points that must be	«3»
Below the minimum number of points that must be scored by student	«2»

The ECTS score is not converted to the traditional scale, as the ECTS scale and the four-point scale are independent.

The objectivity of the assessment of students' learning activities is checked by statistical methods (correlation coefficient between ECTS assessment and assessment on a national scale).

8. Methodical support

Educational content:

- 1) plans for practical classes
- 2) tasks for independent work
- 3) guidelines / recommendations for students and teachers
- 4) algorithms for treatment and emergency care (according to the standards of evidence-based medicine)
- 5) algorithms for performing skills practices, medical manipulations, videos
- 6) results of laboratory and instrumental research methods
- 7) models, phantoms, etc.
- 8) simulators, electronic directories, computers with appropriate information support
- 9) questions, tasks, tasks or cases for current and final control.

Equipment:

1. Enzyme-linked immunosorbent assay (BioTek, USA)
2. ABPM-04 (daily blood pressure monitoring) (Meditech Ltd., Hungary)
3. Daily monitor of blood pressure and electrocardiographic signals SDM 23 (LLC "X-Techno", Kyiv, Ukraine)
4. Sonost 2000 (diagnosis of osteoporosis by densitometric method) ("Osteosys", South Korea)
5. Pulse oximeter "NANOX exo". (MedLab, Germany)
6. Recorder of the daily electrocardiogram according to Holter B16600-12 (Heaco Ltd.)

7. Electrocardiograph ELI 230 (Mortara, Milwaukee, USA)
8. Electrocardiograph "BIOMED" BE 300 (Shenzhen Comen Medical Instruments Co., Ltd., China)
9. Scanner ultrasonic diagnostic UGEO H60 (Samsung Medison Co., Ltd.)
10. Patient monitor G3D (General Meditech, Inc.) (3 pcs.)
11. Syringe pump SN 50 F66 (SINO Medical-Device Technology Co., Ltd.) (2 pcs.)
12. Video gastroscope EG27-i10 (Pentax)
13. Video colonoscope EC34-i10L (Pentax)
14. HOREV-2516 (washing and disinfection machine for 2 flexible endoscopes) (Kharkov, Ukraine)
15. Centrifuge laboratory SM-6MT with a rotor 6M 02 (ELMI Ltd.)
16. Combined system "HELIK-scan-M" (LLC "AMA", Russia)
17. Power Heart AED G3 pro (automated external defibrillation) (Cardiac Science Corp., Bothell, USA)

9. Course policy

The discipline is an individual profile course of choice for 6th year students majoring in "222 Medicine". The student is obliged to fully master the knowledge, skills, practical skills and competencies in the discipline. The presence and activity of the student during the practical classes must be taken into account.

Elimination of debts by the applicant for higher education as a result of semester control is carried out under the control of the dean's office of the faculty in accordance with the schedule approved by the dean of the faculty.

For high efficiency of the educational process the student is obliged to follow the following rules:

- attend practical classes according to the schedule
- do not be late for class;
- follow the rules of internal regulations of the university;
- do not talk during classes;
- turn off your mobile phone;
- do not miss classes without good reason;
- timely and diligently perform tasks;
- do not write off and do not use plagiarism;
- be polite and friendly to classmates and teachers;
- be punctual and obligatory.

LIST OF QUESTIONS FOR PREPARATION OF VI COURSE STUDENTS FROM THE DISCIPLINE "INTERNAL MEDICINE"

1. Management of a patient with hypertension: existing algorithms and standards of diagnosis and treatment.
2. Management of a patient with hypotension and fainting: existing algorithms for diagnosis and treatment.
3. Management of a patient with cardialgia: existing algorithms for diagnosis and treatment.
4. Management of a patient with cardiac arrhythmia: existing algorithms and standards of diagnosis and treatment.
5. Management of a patient with cardiac conduction disorders: existing algorithms and standards of diagnosis and treatment.
6. Management of a patient with stable angina: existing algorithms and standards of diagnosis and treatment.
7. Management of a patient with painless myocardial ischemia: existing algorithms and standards of diagnosis and treatment.
8. Management of a patient with unstable angina: existing algorithms and standards of diagnosis and treatment.

9. Management of a patient with shortness of breath: existing algorithms and standards of diagnosis and treatment
10. Management of a patient with cardiomegaly: existing algorithms and standards of diagnosis and treatment.
11. Management of a patient with cyanosis: existing algorithms and standards of diagnosis and treatment.
12. Management of a patient with heart failure: existing algorithms and standards of diagnosis and treatment.
13. Management of a patient with heart murmurs: existing algorithms and standards of diagnosis and treatment.
14. Management of a patient with pain in the extremities and back: existing algorithms and standards of diagnosis and treatment.
15. Management of a patient with arthralgias / myalgias: existing algorithms and standards of diagnosis and treatment.
16. Management of a patient with joint syndrome: existing algorithms and standards of diagnosis and treatment.
17. Management of a patient with hemorrhagic syndrome: existing algorithms and standards of diagnosis and treatment.
18. Management of a patient with orthosis: existing algorithms and standards of diagnosis and treatment.
19. Management of a patient with gastric dyspepsia: existing algorithms and standards of diagnosis and treatment.
20. Management of a patient with dysphagia: existing algorithms and standards of diagnosis and treatment.
21. Management of a patient with heartburn: existing algorithms and standards of diagnosis and treatment.
22. Management of a patient with abdominal pain: existing algorithms and standards of diagnosis and treatment.
23. Management of a patient with chronic diarrheal syndrome: existing algorithms and standards of diagnosis and treatment.
24. Management of a patient with constipation: existing algorithms and standards of diagnosis and treatment.
25. Management of a patient with jaundice: existing algorithms and standards of diagnosis and treatment. Management of a patient with ascites: existing algorithms and standards of diagnosis and treatment.
26. Management of a patient with hepatomegaly and hepatolienal syndrome: existing algorithms and standards of diagnosis and treatment.
27. Management of a patient with portal hypertension: existing algorithms and standards of diagnosis and treatment.
28. Management of a patient with hepatic encephalopathy: existing algorithms and standards of diagnosis and treatment.
29. Management of a patient with bronchoobstructive syndrome: existing algorithms and standards of diagnosis and treatment.
30. Management of a patient with chronic cough: existing algorithms and standards of diagnosis and treatment.
31. Management of a patient with infiltrative darkening in the lungs: existing algorithms and standards of diagnosis and treatment.
32. Management of a patient with fever of uncertain genesis: existing algorithms and standards of diagnosis and treatment.
33. Management of a patient with hemoptysis: existing algorithms and standards of diagnosis and treatment.
34. Management of a patient with asthma and asphyxia: existing algorithms and standards of diagnosis and treatment.

35. Management of a patient with pleural effusion: existing algorithms and standards of diagnosis and treatment.
36. Management of a patient with respiratory failure: existing algorithms and standards of diagnosis and treatment.
37. Management of a patient with community-acquired pneumonia: existing algorithms and standards of diagnosis and treatment.
38. Management of a patient with nosocomial pneumonia: existing algorithms and standards of diagnosis and treatment.
39. Management of a patient with lung abscess: existing algorithms and standards of diagnosis and treatment.
40. Management of a patient with urinary syndrome: existing algorithms and standards of diagnosis and treatment.
41. Management of a patient with edema syndrome: existing algorithms and standards of diagnosis and treatment.
42. Management of a patient with chronic renal failure: existing algorithms and standards of diagnosis and treatment.
43. Management of a patient with nephrotic syndrome: existing algorithms and standards of diagnosis and treatment.
44. Management of a patient with anemia: existing algorithms and standards of diagnosis and treatment.
45. Management of a patient with leukemoid reaction and leukemia: existing algorithms and standards of diagnosis and treatment.
46. Management of a patient with polycythemia: existing algorithms and standards of diagnosis and treatment.
47. Management of a patient with purpura: existing algorithms and standards of diagnosis and treatment.
48. Management of a patient with lymphadenopathy: existing algorithms and standards of diagnosis and treatment.
49. Treatment of diseases of internal organs according to the current protocols approved by the Ministry of Health of Ukraine.
50. Curation of a patient with a complicated hypertensive crisis. Existing standards of diagnosis and emergency treatment at the pre-hospital and hospital stage.
51. Curation of a patient with cardiac asthma and pulmonary edema. Existing standards of diagnosis and emergency treatment at the pre-hospital and hospital stage.
52. Curation of a patient with acute coronary syndrome. Existing standards of diagnosis and emergency treatment at the pre-hospital and hospital stage.
53. Curation of a patient with myocardial infarction. Existing standards of urgent diagnostics and emergency treatment at the pre-hospital and hospital stage.
54. Curation of a patient with cardiogenic shock. Existing standards of urgent diagnostics and emergency treatment at the pre-hospital and hospital stage.
55. Curation of a patient with pulmonary embolism. Existing standards of urgent diagnostics and emergency treatment at the pre-hospital and hospital stage.
56. Tactics of treatment of sudden cardiac death. Existing standards of urgent diagnostics and emergency treatment at the pre-hospital and hospital stage.
57. Curation of a patient with paroxysmal arrhythmias and conduction. Existing standards of urgent diagnostics and emergency treatment at the pre-hospital and hospital stage.
58. Curation of a patient with acute reactive arthritis. Existing standards of urgent diagnostics and emergency treatment at the pre-hospital and hospital stage.
59. Curation of a patient with thrombocytopenic purpura. Existing standards of urgent diagnostics and emergency treatment at the pre-hospital and hospital stage.
60. Curation of a patient with acute back pain. Existing standards of diagnosis and treatment.
61. Curation of a patient with severe community-acquired and nosocomial pneumonia. Existing standards of diagnosis and emergency treatment.

62. Curation of a patient with total pleural effusion and pneumothorax. Existing standards of diagnosis and treatment.
63. Curation of a patient with asthmatic status. Existing standards of diagnosis and treatment.
64. Curation of a patient with anaphylactic shock and Quincke's edema. Existing standards of diagnosis and treatment.
65. Curation of a patient with acute liver failure. Existing standards of diagnosis and treatment.
66. Curation of a patient with acute abdominal pain. Existing standards of diagnosis and management of patients.
67. Curation of a patient with gastrointestinal bleeding. Existing standards of diagnosis and management of patients.
68. Curation of a patient with severe anemia. Existing standards of diagnosis and management of patients.
69. Curation of a patient with agranulocytosis. Existing standards of diagnosis and management of patients.
70. Curation of a patient with purpura. Existing standards of diagnosis and treatment.
71. Curation of a patient with acute thrombosis. Existing standards of diagnosis and management of patients.
72. Curation of a patient with acute renal failure. Existing standards of diagnosis and management of patients.

LIST OF PRACTICAL SKILLS AND SKILLS FROM THE DISCIPLINE "INTERNAL MEDICINE"

1. Conduct surveys and physical examinations of patients with major cardiac syndromes. Be able to evaluate the results of the examination of the cardiovascular system.
2. To make the plan of inspection of patients with heart diseases, to substantiate application of the basic invasive and noninvasive diagnostic methods applied in cardiology, to define indications and contraindications for their carrying out, possible complications.
3. Identify different variants of the course and complications of heart disease.
4. Carry out differential diagnosis, substantiate and formulate the diagnosis of major cardiac syndromes on the basis of analysis of laboratory and instrumental examination data.
5. Prescribe treatment, determine the prognosis, conduct primary and secondary prevention of heart disease.
6. Record and interpret the ECG in 12 leads. Know the method of ECG recording.
7. Measure and interpret blood pressure in the upper and lower extremities
8. Be able to interpret the conclusion of the Echo-CG.
9. Be able to interpret Holter monitoring.
10. Be able to interpret the results of drug tests and tests with exercise
11. Be able to interpret the results of a comprehensive biochemical study of patients with cardiovascular disease.
12. Be able to interpret troponin test parameters.
13. Be able to interpret the results of lipidogram and coagulogram.
14. Diagnose and provide assistance in case of fainting.
15. Diagnose and provide assistance in hypertensive crisis.
16. Diagnose and provide care for hypotension.
17. Diagnose and provide care for paroxysmal heart rhythm disorders 1
8. Diagnose and care for Morgan-Edems-Stokes syndrome.
19. Carry out pulmonary and cardiac resuscitation.
20. Conduct surveys and physical examinations of patients with major rheumatic syndromes. Be able to evaluate the results of the examination of the musculoskeletal system.
21. Justify the use of basic invasive and non-invasive diagnostic methods used in rheumatology, identify indications and contraindications for their implementation, possible complications.
22. Identify different variants of the course and complications of rheumatic diseases.

23. Make a plan of examination of patients with rheumatic diseases.
24. To make the differential diagnosis, to substantiate and formulate the diagnosis at the basic rheumatological syndromes on the basis of the analysis of data of laboratory and instrumental inspection.
25. Prescribe treatment, determine the prognosis, conduct primary and secondary prevention of rheumatic diseases.
26. Be able to interpret laboratory parameters in rheumatic diseases (rheumatic tests, autoimmune markers, etc.).
27. Be able to interpret X-ray examination of joints, spine.
28. Be able to interpret the data of echocardiographic examination and radiological examination of joints and spine.
29. Conduct surveys and physical examinations of patients with major gastrointestinal syndromes. Be able to evaluate the results of the examination of the gastrointestinal tract.
30. Be able to interpret the results of esophagogastroduodenoscopy, duodenal and gastric sounding.
31. Be able to interpret the results of pH-metry.
32. Be able to interpret the results of X-ray examination of the digestive system.
33. Be able to interpret the results of scans and ultrasound of the liver, gallbladder, pancreas.
34. Be able to interpret the results of enzyme-linked immunosorbent assay for viral hepatitis.
35. Be able to interpret the indicators of biochemical liver tests. 36. Know the technique of bowel cleansing.
37. Be able to perform a puncture of the abdominal cavity
38. Be able to interpret the results of computed tomography and magnetic resonance imaging of internal organs.
39. To make the plan of inspection of patients with the basic gastroenterological syndromes.
40. To substantiate the use of invasive and non-invasive diagnostic methods used in gastroenterology, to determine the indications and contraindications for their implementation, possible complications.
41. To make a differential diagnosis, to substantiate and formulate the diagnosis at the basic gastroenterological syndromes on the basis of the analysis of results of laboratory and instrumental inspection.
42. Identify the main options for the course and complications of diseases of the digestive tract, hepatobiliary system and pancreas.
43. Prescribe treatment, determine the prognosis, carry out primary and secondary prevention of diseases of the digestive tract, hepatobiliary system and pancreas.
44. Conduct surveys and physical examinations of patients with major pulmonary syndromes. Be able to evaluate the results of respiratory examination.
45. Be able to interpret X-ray examination of the thoracic cavity.
46. Be able to interpret the indicators of the function of external respiration. 47. Be able to perform a puncture of the pleura.
48. To make the plan of inspection of patients with the basic pulmonological syndromes.
49. To substantiate the use of basic invasive and non-invasive diagnostic methods used in pulmonology, to determine the indications and contraindications for their implementation, possible complications.
50. On the basis of the analysis of data of laboratory and instrumental inspection to carry out differential diagnosis of the basic pulmonological syndromes, to substantiate and formulate the diagnosis at the basic diseases of respiratory organs.
51. Prescribe treatment, determine the prognosis and carry out primary and secondary prevention of major respiratory diseases.
52. Diagnose and provide care for respiratory failure.
53. Know the indications for pleural puncture.
54. Perform peak flowmetry.
55. Conduct surveys and focused physical examination of patients with major nephrological syndromes. Be able to evaluate the results of the examination of the urinary system
56. To be able to interpret indicators of biochemical research of a functional condition of kidneys

57. Be able to interpret the indicators of general analysis of urine, samples Zymnytsky, Nechiporenko, Reberg.
58. Know the basic invasive and non-invasive diagnostic methods used in nephrology, indications and contraindications for their implementation, possible complications.
59. Identify the main and atypical variants of the course and complications of diseases of the urinary system.
60. Make a plan of examination of patients with major nephrological syndromes.
61. On the basis of the analysis of data of laboratory and instrumental inspection to carry out differential diagnostics, to substantiate and formulate the diagnosis at diseases of urinary system.
62. Prescribe treatment, determine the prognosis, conduct primary and secondary prevention of diseases of the genitourinary system.
63. Diagnose and provide care for renal failure.
64. Conduct surveys and physical examinations of patients with major hematological syndromes.
65. To be able to interpret indicators of the general analysis of blood.
66. Be able to determine blood type and rhesus factor.
67. Justify the use of basic invasive and non-invasive diagnostic methods used in hematology, indications and contraindications for their implementation, possible complications.
68. Identify typical and atypical clinical picture of major diseases of the blood and blood-forming organs.
69. Make a plan for examination of patients with major hematological diseases.
70. On the basis of the analysis of data of laboratory and instrumental inspection to carry out the differential diagnosis, to substantiate and formulate the diagnosis at the basic diseases of blood and hematopoietic organs.
71. Prescribe treatment, determine the prognosis, carry out primary and secondary prevention of major diseases of the blood and blood-forming organs.
72. Diagnose and provide assistance with bleeding due to diseases of the blood and blood-forming organs.
73. Be able to perform subcutaneous intramuscular and intravenous injections.
74. Be able to transfuse blood components and blood substitutes.
75. Know the technique of bloodletting.
76. Demonstrate mastery of moral and deontological principles of a medical specialist and the principles of professional subordination.
77. To determine the level of examination and treatment of patients with urgent cardiac conditions in the hospital.
78. Apply in practice algorithms for examination and management of patients with urgent cardiac conditions in the hospital.
79. To carry out in practice differential diagnosis of the main syndromes which meet in clinic of urgent cards
80. Master the methods of treatment of urgent cardiac conditions, the effectiveness of which is proven by evidence-based medicine. Cardiac defibrillation technique.
81. Apply in practice the standards of diagnosis and treatment of cardiac patients in the clinic of emergency conditions.
82. Determine the level of examination and treatment of patients with urgent rheumatic conditions in the hospital.
83. Apply in practice algorithms for examination and management of patients with urgent rheumatic conditions in the hospital.
84. Carry out in practice the differential diagnosis of the main syndromes found in the clinic of urgent rheumatic conditions.
85. Master the methods of treatment of urgent rheumatic conditions, the effectiveness of which is proven by evidence-based medicine.
86. Apply in practice the standards of diagnosis and treatment of rheumatic patients in the clinic of emergency conditions.
87. To determine the level of examination and treatment of patients with urgent pulmonological and allergological conditions in the hospital.

88. Apply in practice algorithms for examination and management of patients with urgent pulmonological and allergological conditions in the hospital.
89. Carry out in practice the differential diagnosis of the main syndromes found in the clinic of urgent pulmonological and allergological conditions.
90. Master the methods of treatment of urgent pulmonological and allergic conditions, the effectiveness of which is proven by evidence-based medicine
91. Be able to perform allergy tests before the introduction of drugs
92. Apply in practice the standards of diagnosis and treatment of patients in the clinic of pulmonology and allergy emergencies
93. To determine the level of examination and treatment of patients with urgent gastroenterological conditions in the hospital.
94. Apply in practice algorithms for examination and management of patients with urgent gastroenterological conditions in the hospital.
95. Carry out in practice the differential diagnosis of the main syndromes that occur in the clinic of urgent gastrointestinal conditions.
96. Master the methods of treatment of urgent gastroenterological conditions, the effectiveness of which is proven by evidence-based medicine
97. Apply in practice the standards of diagnosis and treatment of patients in the clinic of gastroenterological emergencies.
98. To determine the level of examination and treatment of patients with urgent hematological conditions in the hospital.
99. Apply in practice algorithms for examination and management of patients with urgent hematological conditions in the hospital.
100. Carry out in practice the differential diagnosis of the main syndromes found in the clinic of urgent hematological conditions.
101. Master the methods of treatment of urgent hematological conditions, the effectiveness of which is proven by evidence-based medicine.
102. Apply in practice the standards of diagnosis and treatment of patients in the clinic of hematological emergencies.
103. Determine the level of examination and treatment of patients with urgent nephrological conditions in the hospital.
104. Apply in practice algorithms for examination and management of patients with urgent nephrological conditions in the hospital.
105. Carry out in practice the differential diagnosis of the main syndromes that occur in the clinic of urgent nephrological conditions.
106. Master the methods of treatment of urgent nephrological conditions, the effectiveness of which is proven by evidence-based medicine.
107. Apply in practice the standards of diagnosis and treatment of patients in the clinic of nephrological emergencies.

APPENDICES

List 1 (syndromes and symptoms)

- 1) anemic syndrome
- 2) anuria and oliguria
- 3) hypertension
- 4) arterial hypotension
- 5) chest pain
- 6) abdominal pain
- 7) pain in the extremities and back
- 8) vomiting 9) bronchoobstructive syndrome
- 10) effusion into the pleural cavity
- 11) fever
- 12) hemorrhagic syndrome
- 13) exanthema, enanthema
- 14) hepatomegaly and hepatolienal syndrome

- 15) headache
- 16) dysuria
- 17) dyspepsia
- 18) dysphagia
- 19) diarrhea
- 20) jaundice
- 21) shortness of breath
- 22) asphyxia
- 23) constipation
- 24) dizziness,
- 25) cardiomegaly
- 26) cough
- 27) hemoptysis
- 28) lymphadenopathy
- 29) edematous syndrome
- 30) polyuria
- 31) portal hypertension
- 32) disorders of heart rhythm and conduction
- 33) disorders of consciousness
- 34) itchy skin
- 35) urinary syndrome
- 36) dehydration syndrome
- 37) indigestion syndrome
- 38) stridor
- 39) joint syndrome
- 40) weight loss
- 41) cyanosis
- 42) gastrointestinal bleeding

List 2 (diseases)

I. Diseases of the blood and blood-forming organs, disorders involving the immune mechanism:

- 1) anemia
- 2) hemolytic disease
- 3) hemophilia
- 4) leukemia
- 5) lymphoma
- 6) congenital (Bruton's disease, Viscot-Aldridge syndrome) and acquired immunodeficiency states
- 7) idiopathic thrombocytopenic purpura
- 8) chronic radiation injuries

IV. Diseases of the cardiovascular system:

- 1) aortic aneurysms
- 2) atherosclerosis
- 3) varicose veins of the lower extremities
- 4) congenital heart disease
- 5) secondary hypertension
- 6) acute occlusion of the main and peripheral arteries;
- 7) endocarditis
- 8) essential and secondary arterial hypertension
- 9) coronary heart disease
- 10) carditis
- 11) cardiomyopathy
- 12) pulmonary heart
- 13) acquired heart defects

- 14) obliterating endarteritis
- 15) pericarditis
- 16) violation of heart rhythm and conduction
- 17) heart failure
- 18) injuries of the heart and blood vessels
- 19) pulmonary embolism
- 20) phlebitis, thrombophlebitis

V. Respiratory and mediastinal diseases:

- 1) asphyxia
- 2) bronchial asthma
- 3) bronchitis
- 4) bronchiectasis
- 5) bronchopulmonary dysplasia
- 6) congenital malformations of the respiratory system
- 7) respiratory failure
- 8) infectious and destructive lung diseases
- 9) pulmonary insufficiency
- 10) mediastinitis
- 11) cystic fibrosis
- 12) neoplasms of the lungs and mediastinum
- 13) pleurisy
- 14) pneumoconiosis
- 15) pneumonia
- 16) pneumothorax
- 17) respiratory distress syndrome
- 18) a foreign body in the respiratory tract
- 19) chest injuries (superficial, open)
- 20) chronic obstructive pulmonary disease

VI. Digestive diseases:

- 1) peptic ulcer disease
- 2) gastroesophageal reflux disease, esophagitis
- 3) gastritis, duodenitis
- 4) acute and chronic hepatitis
- 5) acute intestinal obstruction
- 6) acute and chronic appendicitis
- 7) acute and chronic pancreatitis
- 8) benign diseases of the esophagus
- 9) enteritis, colitis
- 10) neoplasms of the esophagus, stomach, colon, liver and pancreas
- 11) peptic ulcers of the stomach and duodenum
- 12) peritonitis
- 13) perforation of the hollow organ
- 14) liver failure
- 15) malabsorption syndrome
- 16) stenosis of the pylorus of the stomach
- 17) functional gastrointestinal disorders
- 18) diseases of the operated stomach
- 19) cholecystitis, cholangitis, gallstone disease, choledocholithiasis
- 20) cirrhosis of the liver
- 21) gastrointestinal bleeding

VII. Diseases of the genitourinary system:

- 1) renal amyloidosis
- 2) congenital malformations of the urinary system
- 3) glomerulonephritis

- 4) dysmetabolic nephropathy
- 5) nephrotic syndrome
- 6) neoplasms of the kidney, urinary tract and prostate
- 7) pyelonephritis
- 8) urolithiasis
- 9) tubulointerstitial nephritis
- 10) urethritis
- 11) chronic kidney disease
- 12) cystitis

IX. Diseases of the musculoskeletal system and connective tissue:

- 1) ankylosing spondylitis
- 2) congenital and acquired malformations of the musculoskeletal system
- 3) acute rheumatic fever
- 4) dermatomyositis and polymyositis
- 5) neoplasms of the musculoskeletal system
- 6) osteoarthritis
- 7) osteomyelitis
- 8) gout
- 9) reactive arthritis
- 10) rheumatoid arthritis
- 11) systemic scleroderma
- 12) systemic lupus erythematosus
- 13) systemic vasculitis (nodular polyarteritis, hemorrhagic vasculitis, hypersensitive vasculitis)
- 14) damage to large joints (hip, knee, ankle, elbow)
- 15) chronic rheumatic disease
- 16) juvenile rheumatoid arthritis

X. Diseases of the endocrine system, eating disorders and metabolic disorders:

- 17) obesity

List 3 (emergencies):

- 1) hypertensive crisis
- 2) acute respiratory failure
- 3) acute urinary retention
- 4) acute kidney damage
- 5) acute liver failure
- 6) acute heart failure
- 7) acute coronary syndrome
- 8) acute bleeding
- 9) cardiac arrest
- 10) collapse
- 11) disturbance of consciousness and coma
- 12) renal colic
- 13) biliary colic
- 14) acute anaphylactic reactions
- 15) acute cardiac arrhythmias,
- 16) shocks

List 4 (laboratory and instrumental research):

- 1) analysis of pleural fluid
- 2) analysis of ascitic fluid
- 3) analysis of synovial fluid
- 4) urine analysis according to Zymnytsky
- 5) analysis of urine by Nechiporenko
- 6) activity of alpha-amylase in blood and urine, fecal elastase-1
- 7) blood proteins and their fractions, C-reactive protein
- 8) blood glucose, glycosylated hemoglobin,
- 9) oral glucose tolerance test

- 10) lipids and lipoproteins of blood and their fractions
- 11) blood hormones
- 12) serum ferritin, iron and copper
- 13) creatinine, urea, blood and urine, glomerular filtration rate
- 14) blood electrolytes
- 15) blood aminotransferases
- 16) total blood bilirubin and its fractions
- 17) coagulogram
- 18) blood uric acid
- 19) alkaline blood phosphatase
- 20) histomorphological examination of lymph node biopsy
- 21) histomorphological examination of the biopsy of parenchymal organs
- 22) histomorphological examination of the biopsy of mucous membranes
- 23) histomorphological examination of muscle and skin biopsy
- 24) study of the function of external respiration
- 25) standard ECG (in 12 leads)
- 26) endoscopic examination of the bronchi
- 27) endoscopic examination of the digestive tract
- 28) echocardiography and Doppler
- 29) general analysis of feces
- 30) general blood test
- 31) general analysis of urine
- 32) general analysis of cerebrospinal fluid
- 33) general analysis of sternal punctate
- 34) general analysis of sputum
- 35) general immunological profile of blood
- 36) serological reactions in infectious diseases
- 37) rapid tests for viral diseases
- 38) amplification methods for infectious diseases (PCR, LLR)
- 39) serological reactions in autoimmune diseases
- 40) microbiological study of biological fluids and secretions
- 41) methods of instrumental visualization of the thyroid gland
- 42) X-ray contrast angiography
- 43) methods of instrumental visualization of abdominal organs
- 44) methods of instrumental visualization of the thoracic cavity
- 45) methods of instrumental visualization of the genitourinary system
- 46) methods of instrumental visualization of the skull, spine, spinal cord, bones and joints
- 47) multi-moment fractional study of bile and pH-metry of the stomach and esophagus

List 5 (medical manipulations):

- 1) perform indirect heart massage
- 2) perform artificial respiration
- 3) perform defibrillation using a manual automatic defibrillator-cardioverter
- 4) to register a standard ECG in 12 leads
- 5) to temporarily stop external bleeding
- 6) apply bandages, including in the field
- 7) install a nasogastric and orogastric tube
- 8) to carry out transport immobilization
- 9) to carry out administration of medicinal substances (intravenous jet and drip, intraosseous)
- 10) provide peripheral venous access
- 11) measure blood pressure
- 12) to restore airway patency
- 13) perform catheterization of the bladder with a soft probe
- 14) carry out finger examination of a rectum
- 15) carry out a clinical examination of the mammary glands

- 16) perform a pleural puncture
- 17) determine blood groups, rhesus affiliation
- 18) transfuse blood components and blood substitutes
- 19) taking smears for bacterioscopic, bacteriological and cytological examinations

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Information resources

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2. <https://www.diabetes.org>
3. <http://www.eagen.org/>
4. <http://www.ers-education.org/guidelines.aspx>
5. <http://www.esmo.org/Guidelines/Haematological-Malignancies>
6. <https://ehaweb.org/organization/committees/swg-unit/scientific-working-groups/structure-and-guidelines/>
7. <http://www.gastro.org/guidelines>
8. www.ginasthma.org