PRIVATE HIGHER EDUCATIONAL INSTITUTION
"INTERNATIONAL ACADEMY OF ECOLOGY AND MEDICINE"
Department of internal medicine with a course in psychiatry and narcology

WORKING PROGRAM
EDUCATIONAL DISCIPLINE

" Internal medicine (including endocrinology)"

LEVEL OF HIGHER EDUCATION Second (master's) level
DEGREE OF HIGHER EDUCATION Master
FIELD OF KNOWLEDGE 22 Health care
SPECIALTY 222 Medicine

Reviewed and approved
at the meeting of the Academic Council
Protocol No. 1, dated August 31, 2018

Kiev 2018

Work program in the discipline " **Internal Medicine** " for the training of applicants for a second (master's) higher education level of higher education in specialty 222 Medicine.

Description of the academic discipline

<table>
<tr><td rowspan="2">Name of indicators</td><td rowspan="2">Field of knowledge, direction of training, educational qualification level</td><td>Characteristic academic discipline</td></tr>
<tr><td>Full-time teaching</td></tr>
<tr><td rowspan="2">Number of credits 8,0</td><td>Branch of knowledge
22 "Health care"</td><td rowspan="2">Full course</td></tr>
<tr><td>Specialty :
222 "Medicine"</td></tr>
<tr><td>Modules 3</td><td rowspan="5">Qualifications of the educational "Master of Medicine"</td><td>A year of training</td></tr>
<tr><td></td><td>V</td></tr>
<tr><td>ECTS credits - 8.0</td><td>Semester</td></tr>
<tr><td>the total number of 240 hours</td><td>IX, X</td></tr>
<tr><td></td><td>Lectures</td></tr>
<tr><td rowspan="10"></td><td rowspan="10">Form of education:
daytime

Type of discipline:
mandatory</td><td>10 hours</td></tr>
<tr><td>Practical</td></tr>
<tr><td>170 hours</td></tr>
<tr><td>Laboratory</td></tr>
<tr><td>-</td></tr>
<tr><td>Individual work</td></tr>
<tr><td>60 hours</td></tr>
<tr><td>Type of control:</td></tr>
<tr><td>Diff. settlement</td></tr>
</table>

CONTENTS OF THE CURRICULUM

2. EXPLANATORY NOTE

The internal medicine program for students of higher medical institutions of III-IV levels of accreditation is drawn up for the specialties "Treatment" 7.110104, "Pediatrics" 7.110104, "Medical-prophylactic case" 7.110105 of the field of training 1101 "Medicine" in accordance with current regulatory documents. According to the curriculum, the training of doctors at the educational and qualification level "Specialist" studying the academic discipline "Internal Medicine" is carried out in the V course (9-10 semesters).

The program is based on the following regulatory documents:

- educational and qualification characteristics (OKH) and educational and professional programs (OPP) of training specialists, approved by the order of the Ministry of Education and Culture of Ukraine No. 239 dated 04.16.03 "On approval of the constituent industry standards of higher education in the field of training 1101 - Medicine";

- recommendations on the development of educational programs of educational disciplines, approved by the order of the Ministry of Health of Ukraine No. 152 dated 24.03.2004 "On approval of recommendations on the development of educational programs of educational disciplines" with changes and additions introduced by the order of the Ministry of Health of Ukraine No. 492 dated 12.10.2004 "On introduction of changes and additions" to recommendations on the development of educational programs of educational disciplines";

- Order of the Ministry of Health of Ukraine No. 148 dated 31.01.03 "On measures to implement the provisions of the Bologna Declaration in the system of higher medical and pharmaceutical education";

- an experimental curriculum developed on the principles of the European Credit Transfer System (ECTS) and approved by the Order of the Ministry of Health of Ukraine No. 52 dated January 31, 2005.

- Order of the Ministry of Health of Ukraine No. 52 of 31.01.2005 "On the approval and introduction of a new curriculum for the training of specialists of the educational and qualification level "specialist" qualification "doctor" in higher educational institutions of the III-IV accreditation levels of Ukraine in the specialties "medical affairs", "pediatrics" ", "medical and preventive care"

Internal medicine as an educational discipline :

a) is based directly on students' study of propaedeutics of internal medicine, propaedeutics of other clinical disciplines (pediatrics, general surgery), as well as other basic disciplines (medical biology, medical and biological physics, bioorganic and biological chemistry, histology, cytology and embryology, human anatomy, pathomorphology, physiology and pathophysiology, microbiology, virology and immunology, radiology) and integrates with these disciplines;

b) lays the foundation for students' assimilation of knowledge in specialized clinical professional-practical disciplines.

c) forms the ability to apply knowledge of the pathology of internal organs in the process of further education and professional activity in accordance with the principles of evidence-based medicine.

According to the curriculum for the training of specialists (Order No. 52 of the Ministry of Health of Ukraine, 31.01.2005), the discipline "Internal Medicine" is studied by students in the IV-V-VI courses.

The educational process is organized according to the credit-module system in accordance with the requirements of the Bologna process.

The goal (**ultimate goals)** of studying internal medicine established on the basis of OKH and OPP training of a doctor by specialty and is the basis for building the content of the educational discipline. The description of goals is formulated through skills in the form of target tasks (actions). On the basis of the final goals for each module or content module, **specific goals are formulated** in the form of certain skills (actions), target tasks that ensure the achievement of the final goal of studying the discipline.

Final goals of the discipline which student :

Know:

- symptoms and course of diseases;
- development, structure and functions of the human body in normal and pathological conditions;
- methods of diagnostic and therapeutic procedures appropriate for specific disease states;
- ethical, social and legal conditions for practicing the medical profession and the principles of health promotion, based on scientific evidence and accepted standards;
- methods of conducting scientific research;
- principles for the development of databases for patient care and research;
- principles for the operation and use of electronic patient records;
- principles of proper nutrition of a healthy and sick person and methods of assessing the state of nutrition;
- elements of the hospital patient service system;
- selected online sources of medical information, with particular emphasis on genetic diseases, available on the Internet;
- the types of observational and interventional studies and the rules governing their conduct;
- the principles for assessing the power and credibility of the recommendations in the guidelines for action;
- basic principles of disinfection, sterilization and aseptic management;
- basic of development and mechanisms of immune system action, including specific and non-specific mechanisms of humoral and cellular immunity;
- types of hypersensitivity reactions, types of immunodeficiency and basicss of immunomodulation;
- definition and pathophysiology of shock, with particular emphasis on differentiation of the causes of shock and multi-organ failure;
- aetiology of haemodynamic disorders, regressive and progressive changes;
- individual groups of therapeutic agents;
- the main mechanisms of drug action, and their changes in the system depending on age;
- the influence of disease processes on the metabolism and elimination of medicines;
- basic rules of pharmacotherapy;
- more important side effects of medicines, including those resulting from their interaction;
- the problem of drug resistance, including multi-drug drug resistance;
- basic concepts of general toxicology;
- environmental and epidemiological determinants of the most frequent diseases;
- the causes, symptoms, principles of diagnosis and therapeutic management of the most common internal diseases and their complications in adults: cardiovascular diseases, including ischemic heart disease, heart defects, endocarditis, myocardial infarction, pericardial infarction, heart failure (acute and chronic), diseases of arteries and venous vessels, arterial hypertension - primary and secondary, pulmonary hypertension, respiratory system diseases, including respiratory tract diseases, chronic obstructive pulmonary disease, bronchial asthma, bronchial dilatation, cystic fibrosis, respiratory infections, interstitial diseases of the lungs, pleura, mediastinum, obstructive and central sleep apnea, respiratory failure (acute and chronic), respiratory tumors, diseases of the digestive system, including diseases of the mouth, esophagus, stomach and duodenum, intestines, pancreas, liver, bile ducts and gallbladder, 4) diseases of the internal secretion system, including diseases of the hypothalamus and pituitary gland, thyroidism, parathyroidism, adrenal cortex and medulla, ovaries and testicles, and neuroendocrine tumors, polyglandular syndromes, various types of diabetes and metabolic syndrome – hypoglycaemia, obesity, dyslipidemia, diseases of the kidneys and the urinary tract, including acute and chronic renal failure, glomerulonephrine and interstitial kidney diseases, kidney cysts, kidney stones, urinary tract infections, urinary tract neoplasms, in

particular of bladder and kidney neoplasms, hematopoietic diseases, including bone marrow aplasia, anemia, granulocytopenia and agranulocytosis, thrombocytopenia, acute leukemia, myeloproliferative and myelodysplastic-myeloproliferative tumours, myelodysplastic syndromes, mature B and T lymphocytes tumors, bleeding diatheses, thrombophilia, life-threatening conditions in hematology, blood disorders in other organ diseases, rheumatic diseases, including systemic connective tissue diseases, systemic vasculitis, joint inflammations involving spinal cord, metabolic bone diseases, osteoporosis and osteoarthritis in particular, gout, allergic diseases, including anaphylaxis and anaphylactic shock and angioedema, water-electrolyte and acid-base disorders: dehydration conditions, overhydration conditions, electrolyte, acidic and alkaline disorders;

- the indications and rules for performing liver biopsy and assists in performing procedure;
- processes: cell cycle, cell proliferation, differentiation and aging, apoptosis and necrosis and their importance for the functioning of the body;
- activity and mechanisms of regulation of all organs and systems of the human body, including the cardiovascular system, respiratory system, digestive system, urinary tract and skin layers, and the interrelations existing between them;
- basic quantitative parameters describing the capacity of particular systems and organs, including the range of norms and demographic factors influencing the value of these parameters;
- the relationship between factors disturbing the balance of biological processes and physiological and pathophysiological changes;
- the mechanism of hormone actions;
- the consequences of inadequate nutrition, including prolonged hunger, excessive food intake and unbalanced diet, and disorders of digestion and absorption of digestive products;
- the consequences of human body exposure to various chemical and biological agents and the principles of prevention;
- groups of medicines, the abuse of which can lead to poisoning;
- symptoms of the most common acute poisoning, including alcohol, drugs and other psychoactive substances, heavy metals and selected groups of drugs;
- basic principles of diagnostic procedures in poisoning;
- computer-aided decision support for medical decisions with particular emphasis on clinical pathway techniques;
- morphological changes in the most important non-cancer diseases affecting the entire organism (e.g. atherosclerosis, hypertension, diabetes, cardiopulmonary insufficiency, systemic infectious and immunological diseases, the most frequent hormonal disorders, the most frequent genetic diseases), and is able to link them with already acquired knowledge of anatomy, biochemistry and pathological physiology in order to deduce clinical symptoms;
- basic neurological symptom syndromes;
- pathomechanisms of regulation disorders of all organs and systems of the human body, including: circulatory, respiratory, urinary and digestive systems, nervous system (central, peripheral and autonomous);
- the concept of impairment and disability;
- specific diseases related to physical activity and competitive sports, also in the sports of the disabled and in girls and women;
- principles of nutrition of physically active persons and athletes. Describes the difference between doping and support;
- the role of medical rehabilitation and methods used in it;
- basics of microbiological and parasitological diagnostics basics of disinfection, sterilization and aseptic management;

Is able to:

- determine the etiological and pathogenetic factors of the most common therapeutic diseases according to list 1 of the OKH;
- analyze the typical clinical picture of the most common therapeutic diseases;
- identify different clinical variants and complications of the most common diseases of internal organs;
- carry out differential diagnosis, substantiate and formulate a preliminary diagnosis of the most common diseases of internal organs;
- determine the management tactics (recommendations regarding the regime, diet, drug treatment, rehabilitation measures) of the patient with the most common diseases of internal organs and their complications;
- identify medical problems and prioritize medical management;
- identify life-threatening conditions that require immediate medical intervention;
- plan the diagnostic procedure and interpret its results;
- implement appropriate and safe therapeutic treatment and predict its effects;
- plan own learning activities and constantly learn in order to update own knowledge;
- inspire the learning process of others;
- communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient;
- communicate and share knowledge with colleagues in a team;
- critically evaluate the results of scientific research and adequately justify the position;
- use databases, including online databases, and search for the necessary information using the available tools;
- assess the reliability of the clinical trial;
- understand the concepts describing the strength of the intervention in the study;
- use computer simulators to support the medical decision-making process;
- protect clinical data against unauthorized access;
- assess toxicological hazards in specific age groups and in conditions of hepatic and renal failure, and prevent drug poisoning;
- interpret the results of microbiological tests;
- carry out a medical history with an adult patient;
- conduct a full and targeted physical examination of an adult patient;
- assess the general condition, state of consciousness and awareness of the patient;
- perform differential diagnosis of the most common diseases of adults and children;
- evaluate and describe the somatic and mental state of the patient;
- recognize immediate life-threatening conditions;
- recognize the condition after drinking alcohol, after using drugs and other substances;
- plan diagnostic, therapeutic and prophylactic procedures;
- analyze the potential adverse reactions of individual medicines and the interactions between them;
- propose individualization of existing therapeutic guidelines and other methods of treatment in the face of ineffectiveness or contraindications to standard therapy;
- recognize the symptoms of drug dependence and propose treatment;
- qualify the patient for home and hospital treatment;
- recognize states in which the duration of life, functional state or patient preferences limit the conduct in accordance with the guidelines specified for a given disease;
- make a functional assessment of a patient with a disability;
- interpret the results of laboratory tests and identify the causes of abnormalities;
- apply nutritional treatment, including enteral and parenteral nutrition;
- plan the management of exposure to blood-borne infections;

- qualify the patient for vaccination;
- collect and retain test material for use in laboratory diagnostics;
- perform basic procedures and medical procedures including: 1) body temperature measurement, heart rate measurement, non-invasive blood pressure measurement, 2) monitoring of vital signs by means of a patient monitor, pulse oximetry, 3) spirometric examination, oxygen therapy, assisted ventilation and replacement ventilation, 4) introduction of the oropharyngeal tube, 5) intravenous, intramuscular and subcutaneous injections, cannulation of peripheral veins, collection of peripheral venous blood, collection of blood for culture, collection of arterialized capillary blood, collection of arterialized capillary blood, 6) taking nasal, throat and skin swabs, puncturing of the pleural cavity, 7) bladder catheterization in women and men, gastric tube, gastric lavage, gastric lavage, enema, 8) standard resting electrocardiogram with interpretation, electrical cardioversion and cardiac defibrillation, 9) simple strip tests and blood glucose measurements
- assist in the performance of the following procedures and medical procedures: 1) transfusion of blood and blood-derived products, 2) drainage of the pleural cavity, 3) puncture of the pericardial sac, 4) puncture of the peritoneal cavity, 5) lumbar puncture, 6) fine-needle biopsy, 7) epidermal tests, 8) intradermal and scarification tests and interpret their results;
- plan specialist consultations;
- implement basic treatment for acute poisoning;
- assess pressure ulcers and use appropriate dressings;
- proceed in case of injuries (dress or immobilize, dress and suture the wound);
- maintain patient's medical records;
- assist in the performance of the following procedures and medical procedures: (i) bone marrow aspiration biopsy;
- offer appropriate nutritional management to people in developmental age and adults with intensive exercise Interprets measures prohibited in sport. Identifies types and support measures;
- conduct an approximate hearing and field of vision examination, and an otoscopic examination
- propose a rehabilitation program for the most common diseases;
- perform and interpret anthropometric measurements of nutritional status, is able to gather nutritional history and make a quantitative and qualitative assessment of intake (taking into account dietary supplements) using a nutritional computer program;
- perform a pathophysiological analysis of selected clinical cases according to the PBCA (Problem Based Case Analysis) rule;
- interpret the results of toxicological tests;
- monitor the condition of a patient poisoned with chemicals or drugs;
- assess bedsores and apply appropriate dressings;
- recognize the agony of the patient and determine his death;
- recognise the state of overtraining and overloading of internal organs and motor organs associated with practicing sport. Is able to prevent and manage dehydration and physical exercise disorders in various conditional environments;
- describe the changes in function of the organism in homeostasis disorder, determine its integrated reaction to physical effort, high and law teperature, blood or water loss, sudden verticalization, transition from sleep to wakefulness;
- prepare a patient examination plan and analyze the data of laboratory and instrumental examinations in the typical course of the most common therapeutic diseases and their complications;
- assess the prognosis of life and working capacity in the most common therapeutic diseases;
- diagnose and provide medical care for emergency conditions in the internal medicine clinic;
- carry out primary and secondary prevention of the most common diseases of internal organs;
- carry out medical manipulations according to the list of 5 OKH;

- demonstrate mastery of the moral and deontological principles of a medical specialist and the principles of professional subordination in therapy.

Is ready to:

- to establish and maintain deep and respectful contact with patients and to show understanding for differences in world views and cultures;
- to be guided by the well-being of a patient;
- respect medical confidentiality and patients' rights;
- take actions towards the patient on the basis of ethical norms and principles, with an awareness of the social determinants and limitations of the disease;
- perceive and recognize own limitations and self-assessing educational deficits and needs;
- promote health-promoting behaviors;
- use objective sources of information;
- formulate conclusions from own measurements or observations;
- implement the principles of professional camaraderie and cooperation in a team of specialists, including representatives of other medical professions, also in a multicultural and multinational environment;
- formulate opinions on the various aspects of the professional activity;
- assume responsibility for decisions taken in the course of their professional activities, including in terms of the safety of oneself and others.

Chapter 2 (5th course).
Basics of internal medicine (cardiology, rheumatology, nephrology, general questions of internal medicine)

Total hours - 240 / 8 credits (lectures - 10, practical classes - 170, SRS - 60)

Content sections:

1. **Content section 1. (Education in the IX semester of the academic year).** Fundamentals of diagnosis, treatment and prevention of diseases of the circulatory system
2. **Content section 2. (Education in the X semester of the academic year).** Fundamentals of diagnosis, treatment and prevention of diseases of the musculoskeletal system and connective tissue
3. **Content section 3. (Education in the X semester of the academic year).** Basics of diagnosis, treatment and prevention of diseases of the genitourinary system
4. General questions of internal medicine

The program of internal medicine in the 5th year involves the study of the basics of internal medicine by the main sections (cardiology, rheumatology, nephrology, general issues of internal medicine), while the emphasis is on the study of etiology, pathogenesis, clinic, diagnosis, treatment and prevention of the main and most common diseases of internal organs.

The teaching of the basics of internal medicine in the IV course is conducted in the form of rotations of content modules. Approximate duration of practical classes - 5 hours. The main goal of this course is to acquaint the student with various aspects of adult medicine. Emphasis is placed on the skills of taking an anamnesis, performing a physical examination, and performing differential diagnosis of common clinical manifestations and diseases.

Students take part in the diagnostic and treatment process of outpatients (mainly) and inpatients under the guidance of assistants and associate professors of the department. Familiarity with the procedures that are most often encountered in the practice of internal medicine is also provided. Practical classes, clinical visits with assistants and associate professors of the department are the most important part of this course.

Types of educational activities of students according to the curriculum are:

a) lectures,

b) practical classes,

c) independent work of students (SRS).

Thematic plans **of lectures** , practical classes and SRS ensure the implementation of all topics included in content modules in the educational process. The topics of the lecture course reveal the problematic issues of the relevant sections of internal medicine. The lecture course uses didactic tools as much as possible (multimedia presentations, slides, educational films, demonstration of thematic patients). The lecture stage of students' education consists mainly in such a way that the lectures precede the relevant practical classes and are read in one block.

Practical classes (approximately 5 hours) are held at the department's clinical facilities.

Treatment of the patient involves:

1) elucidation of the patient's complaints, disease and life history, conducting a survey of organs and systems;
2) conducting a physical examination of the patient and determining the main symptoms of the disease;
3) analysis of laboratory and instrumental patient examination data;
4) formulation of the patient's diagnosis;
5) appointment of treatment;
6) determination of primary and secondary prevention measures;
7) report on the results of the patient's examination, analysis under the guidance of the teacher of the correctness of the diagnosis, differential diagnosis, scope of the prescribed examination, treatment tactics, assessment of prognosis and work capacity;

SRS and individual work of students makes up 60% of the classroom load. It contains:

- study of topics that are not part of the classroom lesson plan
- the work of students in departments of clinical bases of departments, including in laboratories and departments (cabinets) of functional diagnostics, interpretation of laboratory data and instrumental methods of research in internal pathology outside classroom time
- learning practical skills using phantoms and working with patients (according to the list)
- individual SRS (speech at the clinic's scientific and practical conference, writing articles, presenting an abstract at a practical session, etc.).

Teachers and auxiliary staff of the department provide the opportunity to carry out SRS, during practical classes and final module control, they control and evaluate its implementation. The topics submitted for independent study are evaluated only during the final module control.

The exam is held during the session according to the exam schedule.

3. PROGRAM CONTENT

Chapter 1. "Fundamentals of internal medicine (cardiology, rheumatology, nephrology, general issues of internal medicine)".

Final goals of the module

Students must:

- Demonstrate the ability to diagnose and present a treatment plan for the most common conditions in the field of cardiology, rheumatology, and nephrology .
- To demonstrate the ability to apply diagnostic methods that help in making a decision (treatment plan) in the management of various diseases in the field of cardiology, rheumatology, nephrology .

- Apply the principles of evidence-based medicine in making diagnostic and therapeutic decisions for internal diseases in the field of cardiology, rheumatology, and nephrology .
- Know the main classes of drugs used in cardiology, rheumatology, nephrology , show the ability to apply the relevant clinical and pharmacological principles for the management of patients with the most frequent conditions from these areas of internal medicine.
- Compile and justify a list of twenty indications for referring the patient to the emergency department or direct hospitalization.
- Write a referral for hospitalization for the 10 most frequent medical problems in the field of cardiology, rheumatology, nephrology .
- Write 10 hospital discharges.
- Demonstrate knowledge of general internal medicine issues such as obesity, management of geriatric patients, primary and secondary prevention, fundamentals of clinical epidemiology and biostatistics.
- Demonstrate the ability to perform a focused medical examination and targeted physical examination according to the patient's chief complaints and medical history.
- Demonstrate ability to take medical histories and perform physical examinations.
- Demonstrate the ability to assess the health status of adults and apply appropriate prevention recommendations.
- Demonstrate ease in the application of medical information technologies and critical expert evaluations of medical literature in diagnosis and treatment in the field of cardiology, rheumatology, and nephrology.
- To demonstrate the ability to apply the methods of biostatistics and clinical epidemiology in the internal medicine clinic
- Demonstrate the ability to justify and apply clinical methods to understand disease manifestations.
- Demonstrate a basic understanding of ethical principles and their application in patient care.
- Demonstrate an effective ability to communicate with the patient's diverse environment, doctors and other medical professionals.
- Demonstrate a basic understanding of how age, gender, culture, social, and economic status influence patient management in an internal medicine clinic.

Students must conduct curation of patients (new or those already treated) with the following diseases:

- Preventive treatment and health support - 4
- Treatment of geriatric patients - 2
- Cardiovascular diseases (arterial hypertension, coronary artery disease, heart defects, cardiomyopathy, arrhythmias, acute and chronic heart failure) - 10
- Rheumatic diseases (rheumatic fever, arthritis, SZST) – 5
- Kidney disease (glomerulonephritis, acute renal failure, chronic renal failure) – 3

The organization of the educational process should ensure the participation of students in the management of at least 2/3 of hospitalized patients. If it is not possible to access patients in any category, students complete a medical history with the diagnoses/problems of the appropriate category. The necessity of writing such a history is determined by the assistant/associate professor (head of the department) on the basis of a weekly review of data on the availability of relevant patients in the departments.

Daily reports on the admission/examination of patients by students are kept and provided weekly to the assistant/associate professor to control the required number of patient

examinations and display the set of patients with the most frequent internal diseases without unnecessary repetition.

Didactic classes are held during morning tests, lectures and classes. Assistants ensure that each student acquires the necessary competence in the following areas: physical examination and questioning of the patient, oral presentation, filling out documentation, making diagnostic decisions (critical thinking).

In addition, assistants monitor the students' activity in order to be sure that they have mastered practical skills.

CONTENT SECTION 1. *" FUNDAMENTALS OF DIAGNOSIS, TREATMENT AND PREVENTION OF MAJOR DISEASES OF THE CIRCULATORY SYSTEM"*

Specific goals:

Students must:

- Conduct interviews and physical examinations of patients with underlying cardiac diseases
- To justify the use of the main invasive and non-invasive diagnostic methods used in cardiology, to determine indications and contraindications for their implementation, possible complications
- To determine the etiological and pathogenetic factors of the main heart diseases
- Identify the typical clinical picture of the main heart diseases
- Identify different course options and complications of the main heart diseases
- Draw up a plan for the examination of patients with major heart diseases
- Carry out a differential diagnosis, justify and formulate a diagnosis for the main heart diseases based on the analysis of laboratory and instrumental examination data
- Prescribe treatment, carry out primary and secondary prevention for major heart diseases
- Diagnose and provide assistance in acute heart failure
- Record and interpret 12-lead ECG
- Measure and interpret blood pressure
- Diagnose and provide assistance in case of stoppage of blood circulation and breathing
- Diagnose and provide assistance in case of hypertensive crisis
- Diagnose and treat shocks
- Diagnose and provide assistance with paroxysmal heart rhythm disorders
- Diagnose and provide care for Morgana-Edems-Stokes syndrome
- Perform cardiopulmonary resuscitation
- Demonstrate mastery of the moral and deontological principles of a medical specialist and the principles of professional subordination

Topic 1. **Essential arterial hypertension (hypertensive disease).**

Definition. The role of disturbances in the central and renal mechanisms of pressure regulation, endothelial function and other factors. Classification. Clinical manifestations and data of additional research methods. Damage to target organs. Differential diagnosis. Risk stratification. Complication. Isolated systolic arterial hypertension. Treatment.

Complicated and uncomplicated hypertensive crises , peculiarities of treatment tactics. Primary and secondary prevention. Forecast and performance.

Topic 2. **Secondary (symptomatic) arterial hypertension.**

Definition. The main reasons. Features of the clinic, diagnosis of renal (renovascular, renoparenchymal), endocrine (Itsenko-Cushing syndrome and disease, pheochromocytoma, Conn's syndrome, diffuse toxic goiter) and hemodynamic arterial hypertension. Arterial hypertension during pregnancy, metabolic disorders (metabolic syndrome). Value of laboratory

and instrumental methods for differential diagnosis and diagnosis verification. Therapeutic and surgical treatment. Primary and secondary prevention. Forecast and performance.

Topic 3. **Atherosclerosis.**

Definition. The role of hyperlipidemia, general and local inflammation, damage to the vascular wall and platelets in the development of atherosclerosis. Risk factors. Peculiarities of clinical manifestations depending on the predominant localization (aorta, coronary, mesenteric and renal arteries, arteries of the lower extremities). The importance of laboratory, radiation and other instrumental research methods. Differential diagnosis. Complication. General principles of treatment. Treatment tactics for different variants of the course. Primary and secondary prevention. Forecast and performance.

Topic 4. **Coronary heart disease (CHD): acute myocardial infarction** .

Definition. The role of atherosclerosis, destabilization of atherosclerotic plaque and functional factors in the pathogenesis of various forms of CHD. Classification. Features of the clinical course and diagnosis of acute myocardial infarction. The concept of "acute coronary syndrome". Different forms of CHD. Diagnosis criteria. Differential diagnosis of various forms of coronary artery disease. Complications of acute myocardial infarction (acute left ventricular failure, heart rhythm and conduction disturbances, myocardial rupture, acute heart aneurysm, post-infarction Dressler syndrome, etc.). Treatment tactics in different periods of acute myocardial infarction. Indications for surgical treatment. Rehabilitation. Primary and secondary prevention.

Topic 5. **Chronic forms of CHD.**

Features of the clinical course and diagnosis of various variants of stable angina pectoris. Painless forms of CHD (painless myocardial ischemia, post-infarction and diffuse cardiosclerosis). Peculiarities of clinical manifestations, criteria for diagnosis. Differentiated therapy of various forms of CAD. Therapy of angina attacks, acute left ventricular failure. Prognosis and working capacity in various forms of coronary heart disease.

Topic 6. **Heart failure** .

Definition. The main reasons. Pathogenesis of disorders of central and peripheral hemodynamics in various forms (left and right parts of the heart). The role of neurohumoral activation and cardiac remodeling. Classification. Clinical manifestations and their features depending on the variant (systolic, diastolic), stage and functional class. Diagnostics. The value of echocardiography. Treatment. Primary and secondary prevention. Forecast and performance.

Topic 7. **Congenital heart defects** .

Definition. Atrial and ventricular septal defect, open ductus arteriosus, coarctation of the aorta. Mechanisms of hemodynamic disorders, significance of pulmonary hypertension. Value of non-invasive and invasive methods for diagnosis and differential diagnosis. Complication. Eisenmenger syndrome. Indications for surgical treatment. Prevention of complications. Forecast and performance.

Topic 8. **Acquired heart defects** .

Definition. Defects of mitral, aortic, tricuspid valves. Etiology, mechanisms of violations of geodynamics. Classification. Combined mitral and aortic defects. Clinical manifestations. Value of non-invasive and invasive methods. Differential diagnosis. Complication. Indications for surgical treatment. Primary and secondary prevention. Forecast and performance.

Topic 9. **Infective endocarditis.**

Definition. Etiology, pathogenesis. Features of the course depending on the causative agent. Diagnostic criteria. The value of laboratory methods and echocardiographic research in diagnostics. Differential diagnosis. Complications (heart failure, embolism, abscesses). Treatment. Modes of antibacterial therapy. Indications for surgical treatment. Primary and secondary prevention. Forecast and performance.

Topic 10. **Myocarditis and cardiomyopathies.**

Definition. Classification. Etiology and pathogenesis of the main types of cardiomyopathies (inflammatory, metabolic, idiopathic). Clinical manifestations, changes in ECG, echocardiography and other radiological research methods depending on the etiology and variant

of the course. Diagnostic criteria and differential diagnosis. Complication. Features of treatment of various cardiomyopathies. Primary and secondary prevention. Forecast and performance.

Topic 11. **Thromboembolism of the pulmonary artery and pulmonary heart.**

Definition and classification of TELA. Risk factors. Pathogenesis of hemodynamic disorders. Clinical course of various forms. Diagnostic criteria, differential diagnosis. The diagnostic value of changes in these instrumental research methods. Treatment tactics. Indications for surgical treatment. Primary and secondary prevention. Forecast and performance.

Definition of pulmonary heart. Etiology, pathogenesis. Classification. Clinical manifestations, changes in these instrumental research methods depending on the etiological factor and stage (compensation or decompensation). Differential diagnosis. Principles of differentiated treatment. Primary and secondary prevention. Forecast and performance.

Topic 12. **Pericarditis.**

Definition. Etiology and pathogenesis. Classification. Features of the clinic, course and diagnosis of various variants of pericarditis. Diagnosis verification methods. Differential diagnosis with myocardial lesions. Heart tamponade. Indications for pericardial puncture, its diagnostic and therapeutic value. Differentiated therapy of various forms taking into account etiological factors. Primary and secondary prevention. Forecast and performance.

Topic 13. **Neurocirculatory dystonia** .

Definition. Etiology and pathogenesis. Classification. Features of clinical syndromes. Diagnostic criteria, Differential diagnosis. Differentiated therapy. Primary and secondary prevention. Forecast and performance.

Topic 14. **Heart rhythm and conduction disorders** .

Definition. Etiology. Electrophysiological mechanisms of arrhythmias (extrasystole, atrial fibrillation and flutter, ventricular tachycardia and ventricular fibrillation). Clinic, ECG diagnosis and differential diagnosis. Complication. Medicinal and non-medicinal methods of treatment. The role of electroimpulse therapy. Emergency therapy for paroxysmal rhythm disturbances and sudden cardiac arrest. Primary and secondary prevention. Forecast and performance.

Definition and etiology of conduction disorders, classification. Clinic and ECG diagnosis of atrioventricular blocks and bundle branch block. Tactics for acute and chronic conduction disorders. Emergency care for Morgan-Adams-Stokes attacks. Indications and principles of electrocardiostimulation (temporary, permanent). Primary and secondary prevention. Forecast and performance.

THEMATIC PLAN OF LECTURES

No. z/p	***Topic***
1.	Arterial hypertension
2.	Atherosclerosis
3.	CHD: acute myocardial infarction Chronic forms of coronary heart disease
4.	Myocarditis and cardiomyopathies Heart failure
5.	Acquired heart defects

THEMATIC PLAN OF PRACTICAL CLASSES

No. z/p	***Topic***
1.	Essential arterial hypertension
2.	Secondary hypertension
3.	Atherosclerosis

No. z/p	*Topic*
4.	CHD: acute myocardial infarction
5.	Chronic forms of coronary heart disease
6.	Heart failure Neurocirculatory dystonia
7.	Congenital heart defects
8.	Acquired heart defects
9.	Infectious endocarditis Myocarditis and cardiomyopathies Pericarditis
10.	Violation of heart rhythm and conduction
11.	Pulmonary heart and thromboembolism of the pulmonary artery
12.	Violation of heart rhythm and conduction **Test control of knowledge according to meaningful module 1 " Fundamentals of diagnosis, treatment and prevention of diseases of the circulatory system "**

TYPES OF STUDENTS' INDEPENDENT WORK

No. z/p	*Topic*
1.	Preparation for practical classes, including: - Mastering the skills of ECG recording and interpretation - Mastery of blood pressure measurement skills - Mastering the skills of interpretation of Doppler echocardioscopy data - Mastering the skills of interpreting stress tests - Mastering the skills of interpretation of X-ray contrast angiography data - Mastering the skills of interpreting the data of X-ray examination of chest organs - Mastering the skills to analyze the data of laboratory research methods (microbiological examination of blood, acute phase indicators of blood, total protein and protein fractions, blood transaminases, coagulogram, laboratory markers of myocardial necrosis, blood lipid spectrum, blood creatinine, creatinine clearance, blood electrolytes, data of serological studies at autoimmune processes - Mastering the skills of providing medical aid in acute heart failure, collapse, shocks, paroxysmal rhythm disturbances , Morgana-Edems-Stokes syndrome , hypertensive crisis, circulatory and respiratory arrest
2.	Curation of the patient with the writing of the medical history
3.	Individual work: • Presentation of the essay at the practical session • Report at clinical conferences of department bases • A report on the medical history of a patient at a practical session • Writing theses, articles

CONTENT SECTION 2. *"FUNDAMENTALS OF DIAGNOSIS, TREATMENT AND PREVENTION OF MAJOR DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUES"*

Specific goals:

Students must:

- Conduct interviews and physical examinations of patients with major joint and connective tissue diseases
- To justify the use of the main invasive and non-invasive diagnostic methods used in rheumatology, to determine indications and contraindications for their implementation, possible complications
- To determine the etiological and pathogenetic factors of the main diseases of joints and connective tissue
- Identify the typical clinical picture of the main diseases of the joints and connective tissue
- Identify the typical courses and complications of the main diseases of the joints and connective tissue
- Draw up a plan for the examination of patients with major joint and connective tissue diseases
- Carry out a differential diagnosis, substantiate and formulate a diagnosis for the main diseases of the joints and connective tissue based on the analysis of laboratory and instrumental examination data
- Prescribe treatment, carry out primary and secondary prevention for the main diseases of the musculoskeletal system and connective tissue
- Be able to interpret the data of an echocardiographic study and radiographic examination of joints
- Demonstrate mastery of the moral and deontological principles of a medical specialist and the principles of professional subordination

Topic 15. **Main symptoms of rheumatological pathology and research methods in rheumatology.**

Main rheumatological complaints and definition of main rheumatological symptoms (muscle and joint pain, back pain, etc.). General and specific symptoms. Physical symptoms of rheumatological pathology. Methods of physical examination of patients with rheumatological pathology. Standard echocardiography, indications for conducting, informativeness and clinical evaluation of results. Standard echocardiography and dopplerography. X-ray diagnostic methods of diseases of the heart, joints and spine. Computer and NMR tomography. Immunological and biochemical research methods.

Topic 16. **Rheumatic fever.**

Acute rheumatic fever and chronic rheumatic heart disease. Definition. The role of streptococcal infection and immunological reactivity in the development of acute rheumatic fever. Classification. Clinical picture (carditis, polyarthritis, chorea, skin lesions). The importance of laboratory and instrumental research methods. Diagnostic criteria. Differential diagnosis Complications. Treatment taking into account the degree of activity. Primary and secondary prevention. Forecast and performance.

Topic 17. **Rheumatoid arthritis** .

Definition. Etiological factors, pathogenesis. The role of immune status disorders in the development of the disease. Classification and nomenclature. Clinical picture taking into account the activity of the pathological process, stage of the disease, systemic manifestations. The importance of laboratory and instrumental methods for diagnosing the disease, its stage and activity. Diagnostic criteria, significance of synovial fluid examination. Differential diagnosis. Complication. Treatment strategy. Basic therapy. Tactics of treatment with glucocorticosteroids and non-steroidal anti-inflammatory drugs. Prevention. Forecast and performance.

Topic 18. **Systemic diseases of connective tissue**

Systemic lupus erythematosus . Definition. Etiological factors and pathogenesis. Classification. Clinical manifestations depend on the damage to organs and systems, the activity of the disease. The importance of laboratory, including immunological, research methods.

Diagnostic criteria. Differential diagnosis. Complication. Principles of treatment. Pulse therapy. Prevention. Forecast and performance.

***Topic 19.* Systemic diseases of connective tissue.**

Systemic scleroderma and dermatomyositis. Definition. Etiological factors, pathogenesis. Classification. The clinical picture depends on the damage to organs and systems. Diagnostic criteria, Differential diagnosis. Complication. Principles of treatment. Prevention. Forecast and performance.

***Topic 20.* Systemic vasculitis**

Hemorrhagic vasculitis (Schönlein-Henoch purpura, hypersensitivity vasculitis). Definition. Etiology, pathogenesis. Clinical manifestations, diagnostic criteria. Differential diagnosis. Treatment. Prevention. Forecast and performance.

Polyarteritis nodosa. Definition. Etiology, pathogenesis. Clinical manifestations, diagnostic criteria. Differential diagnosis. Treatment. Prevention. Forecast and performance

***Topic 21.* Osteoarthritis .**

Definition. Etiology , pathogenesis. Classification. Clinical picture depending on the predominant localization of lesions. Diagnostics. Differential diagnosis. Drug and non-drug treatment. Primary and secondary prevention. Forecast and performance.

***Topic 22.* Ankylosing spondyloarthritis.**

Definition. Etiological factors, pathogenesis. Classification. Clinical picture. The value of instrumental and laboratory methods. Diagnostic criteria. Differential diagnosis. Treatment. Prevention. Forecast and performance.

***Topic 23.* Reactive arthropathies.**

Definition. Etiology , pathogenesis. Classification. Clinical manifestations of reactive arthritis of various etiologies. Reiter's syndrome, the importance of laboratory and instrumental diagnostic methods. Diagnostic criteria, Differential diagnosis. Treatment, the role of antibacterial therapy. Primary and secondary prevention. Forecast and performance.

***Topic 24.* Gout.**

Definition. Etiology, pathogenesis. Classification. Features of joint syndrome and damage to internal organs. Diagnosis criteria. Differential diagnosis. Complication. Principles of differentiated treatment. Prevention. Forecast and performance.

THEMATIC PLAN OF PRACTICAL CLASSES

No. z/p	*Topic*
1	Basic rheumatological symptoms and research methods in rheumatology
2	Rheumatic fever
3	Rheumatoid arthritis
4	Systemic diseases of connective tissue: - Systemic lupus erythematosus. - Systemic scleroderma. - Dermatomyositis.
5	Systemic diseases of connective tissue: - Hemorrhagic vasculitis (Schönlein-Henoch purpura, hypersensitivity vasculitis). - Poly arteritis nodosa.
6	Systemic vasculitis
7	Osteoarthritis
8	Ankylosing spondyloarthritis
9	Reactive arthritis
10	Gout

No. z/p	*Topic*
	Test control of knowledge according to content module 2 " Fundamentals of diagnosis, treatment and prevention of the main diseases of the musculoskeletal system and connective tissue "

TYPES OF INDEPENDENT WORK OF STUDENTS

No. z/p	Topic
1.	Preparation for practical classes, including: - Mastering the skills of interpreting the data of radiographic studies of joints - Mastering the skills of interpreting echocardiography data - Mastering the skills to analyze laboratory data (total blood analysis, total protein and protein fractions, creatinine, urea, blood uric acid, blood electrolytes, indicators of immune status, acute phase blood indicators, data from serological studies in autoimmune processes, laboratory indicators of the functional state of the liver and kidneys) - Mastering the skills of ECG registration and interpretation
2.	Treatment of the patient with a written justification of the diagnosis
3.	Individual work: • Presentation of the essay at the practical session • Report at clinical conferences of department bases • A report on the medical history of a patient at a practical session • Writing theses, articles

CONTENT SECTION 3: " *FUNDAMENTALS OF DIAGNOSIS, TREATMENT AND PREVENTION OF THE MAIN DISEASES OF THE GENITOURINARY SYSTEM"*

Specific goals:

Students must:

- Conduct surveys and physical examinations of patients with diseases of the urinary system
- Know the main invasive and non-invasive diagnostic methods used in nephrology, indications and contraindications for their use, possible complications
- To determine the etiological and pathogenetic factors of diseases of the urinary system
- Identify the typical clinical picture of diseases of the urinary system
- Identify the main variants of the course and complications of diseases of the urinary system
- Draw up a plan for the examination of patients with diseases of the urinary system
- Based on the analysis of laboratory and instrumental examination data, make a differential diagnosis, substantiate and formulate a diagnosis for diseases of the urinary system
- Prescribe treatment, carry out primary and secondary prevention for diseases of the genitourinary system
- Diagnose and provide assistance in acute renal failure
- Demonstrate mastery of the moral and deontological principles of a medical specialist and the principles of professional subordination

***Topic 25.* Glomerulonephritis and nephrotic syndrome.**

Definition. Etiology, the role of streptococcal infection and immunological disorders in the development of the disease. Pathogenesis of the main clinical syndromes. Classification. Clinical manifestations and diagnosis of individual forms. Differential diagnosis. Complications (eclampsia, acute renal and chronic renal failure, etc.). Treatment taking into account the morphological variant and clinical course. Primary and secondary prevention. Forecast and performance.

Definition, etiology, pathogenesis of nephrotic syndrome. Clinical manifestations. Diagnostic criteria and differential diagnosis. Complication. Treatment. Primary and secondary prevention. Forecast and performance.

Topic 26. **Pyelonephritis , tubulo-interstitial nephritis, kidney amyloidosis.** .

Definition. The role of infection in inflammatory diseases of the kidneys and urinary tract. Primary and secondary pyelonephritis. Clinical manifestations. Instrumental and laboratory methods of diagnosis. Differential diagnosis. Complication. Treatment. Primary and secondary prevention. Forecast and performance.

Definition, etiology, pathogenesis of tubulo-interstitial nephritis. Clinical manifestations. Diagnostic criteria and differential diagnosis. Complication. Treatment. Emergency care for acute renal failure. Primary and secondary prevention. Forecast and performance.

Definition, etiology, pathogenesis of amyloidosis. Classification. Clinical manifestations of kidney amyloidosis. Diagnostic criteria. Differential diagnosis. Complication. Treatment. Primary and secondary prevention. Forecast and performance.

Topic 27. **Acute and chronic kidney failure.**

Definition. Etiological factors. Pathogenesis of lesions of organs and systems, their clinical manifestations. The concept of "chronic kidney disease". Classification. Clinic and changes in laboratory indicators depending on the stage. Differential diagnosis. Complication. Treatment at different stages. Renal replacement therapy: hemodialysis, kidney transplantation. Indications and contraindications for renal replacement therapy, complications. Primary and secondary prevention. Forecast and performance.

THEMATIC PLAN OF PRACTICAL CLASSES

No. z/p	***Topic***
1	Glomerulonephritis and nephrotic syndrome
2	Pyelonephritis, tubulointerstitial nephritis and renal amyloidosis
3	Acute and chronic renal failure

TYPES OF INDEPENDENT WORK OF STUDENTS

No. z/p	**Topic**
1.	Preparation for practical classes, including: - Mastering the skills of interpretation of data from radiological studies of organs of the urinary system - Mastering the skills to analyze laboratory data (general analysis of urine, according to Nechiporenko and Zimnytskyi, data of microbiological examination of urine, general blood analysis, total protein and protein fractions, creatinine, urea, blood uric acid, blood electrolytes) - Mastering the skills of providing medical aid in acute renal failure
2.	Curation of the patient with a written justification of the diagnosis
3.	Individual work: • Presentation of the essay at the practical session • Report at clinical conferences of department bases

No. z/p	Topic
	• A report on the medical history of a patient at a practical session • Writing theses, articles

CONTENT SECTION 4: " *GENERAL QUESTIONS OF INTERNAL MEDICINE"*

Specific goals:

Students must:

- Know the primary and secondary risk factors of major diseases of internal organs
- To be able to carry out primary and secondary prevention of internal diseases
- To know the relevance of the problem of overweight and obesity and its medical consequences
- To be able to carry out examination and diagnosis of diseases of internal organs in obese persons
- To be able to carry out examination and diagnosis of diseases of internal organs in elderly people
- Know the basic biostatistical criteria and methods used in clinical epidemiology and evidence-based medicine

***Topic 28.* Obesity and its consequences.**

The urgency of the problem. Methods of calculating excess weight and determining obesity. Classification of obesity. The main medical consequences of obesity are metabolic syndrome, diabetes, cardiovascular and gastroenterological diseases. Modern approaches to dietary and drug treatment. The role of bariatric surgery.

***Topic 29.* Diagnosis and treatment of elderly people.**

Peculiarities of metabolism in old age. The frequency of comorbid pathology in the elderly. Peculiarities of the action of drugs on the body of an elderly person. Features of diagnosis and treatment in old age.

***Topic 30.* Primary and secondary prevention of internal diseases.**

The main primary and secondary risk factors for diseases of internal organs. Modifiable and non-modifiable risk factors. The main ways of prevention of the most common internal diseases.

***Topic 31.* Clinical epidemiology and biostatistics in the therapist's practice.**

Methodology of evidence-based medicine and clinical epidemiology. Randomized clinical trials of medicines. Basic biostatistical criteria and methods used in clinical epidemiology and evidence-based medicine

THEMATIC PLAN OF PRACTICAL CLASSES

No. z/p	*Topic*
1	Obesity and its consequences
2	Diagnosis and treatment of elderly people

TYPES OF INDEPENDENT WORK OF STUDENTS

No. z/p	*Topic*
1.	Preparation for practical classes, including: - Mastering the skills of examination and treatment of elderly people with pathology of internal organs
2.	Treatment of elderly patients

No. z/p	*Topic*
3.	Individual work: • Presentation of the essay at the practical session • Report at clinical conferences of department bases • A report on the medical history of a patient at a practical session • Writing theses, articles

The structure of credit credit

Topic	Lectures	Practical training	Independent work of students	
			SRS	Individual work
Content section 1. ***Basics of diagnosis, treatment and prevention of the main diseases of the circulatory system***				
1. Essential arterial hypertension	1	5	2	• Presentation of the essay at the practical session • Report at clinical conferences of department bases • A report on the medical history of a patient at a practical session • Writing theses, articles
2. Secondary arterial hypertension	1	5	1	
3. Atherosclerosis	2	5	2	
4. CHD: acute myocardial infarction	1	5	2	
5. Chronic forms of CAD	1	5	1	
6. Congenital heart defects		5	2	
7. Acquired heart defects	2	5	1	
8. Endocarditis		3	1	
9. Pulmonary heart and pulmonary embolism		5	2	
10. Myocarditis and cardiomyopathies	1	3	1	
11. Heart failure	1	3	2	
12. Pericarditis		5	1	
13. Neurocirculatory dystonia		3	1	
14. Heart rhythm and conduction disturbances		13	1	
Individual work			20	1
Total hours – 101	**10**	**70**	**21**	
Contents of chapter 2. ***Basics of diagnosis, treatment and prevention of the main diseases of the musculoskeletal system and connective tissue***				
15. Main symptoms of rheumatological pathology and examination methods in rheumatology		6	3	• Presentation of the essay at the practical session • Report at clinical conferences of department bases • A report on the medical history of a patient at a practical session • Writing theses, articles
16. Rheumatic fever		5	2	
17. Rheumatoid arthritis		5	2	
18. Systemic diseases of ST: - Systemic lupus erythematosus. - Systemic scleroderma. - Dermatomyositis.		6	2	
- Hemorrhagic vasculitis (Schönlein-Henoch purpura, hypersensitivity vasculitis). - Poly arteritis nodosa.		6	2	
20. Systemic vasculitis		5	2	
21. Osteoarthritis		5	2	

Topic	Lectures	Practical training	Independent work of students	
			SRS	Individual work
Content section 1. ***Basics of diagnosis, treatment and prevention of the main diseases of the circulatory system***				
22. Ankylosing spondyloarthritis		5	2	
23. Reactive arthropathies		5	2	
24. Gout		5	2	
Individual work			21	1
Total hours - 75		**53**	**22**	

Content section 3. ***Basics of diagnosis, treatment and prevention of the main diseases of the genitourinary system***				
25. Glomerulonephritis and nephrotic syndrome		7	3	• Presentation of the essay at the practical session • Report at clinical conferences of department bases • A report on the medical history of a patient at a practical session • Writing theses, articles
26. Pyelonephritis, tubulointerstitial nephritis and kidney amyloidosis		7	4	
27. Kidney failure		6	3	
Individual work			10	1
Total hours – 31		**20**	**11**	
Content section 4. ***General issues of internal medicine***				
28. Diagnosis and treatment of the elderly		6	1	• Presentation of the essay at the practical session • Report at clinical conferences of department bases • A report on the medical history of a patient at a practical session • Writing theses, articles
29. Primary and secondary prevention of internal diseases		6	1	
30. Obesity and its consequences		6	1	
31. Clinical epidemiology and biostatistics in the therapist's practice		4	2	
Individual work			5	1
Total hours - 28		**22**	**6**	
Final control of credit acquisition - Chapter 2 - Exam		**5**		
Together by chapter 2	**10**	**170**	**60**	
Total hours 240				
ECTS credits 8				

List of questions
to prepare students for the exam
Basics of internal medicine
(cardiology, rheumatology, nephrology, general questions of internal medicine)

1. **Essential arterial hypertension (hypertensive disease).** Definition. Classification. Clinical manifestations and data of additional research methods. Damage to target organs. Differential diagnosis. Complication. Treatment.
2. **Complicated and uncomplicated hypertensive crises** , peculiarities of treatment tactics.
3. **Secondary (symptomatic) hypertension.** Definition. The main reasons.

Features of the clinic, diagnosis of renal (renovascular, renoparenchymal), endocrine (Itsenko-Cushing syndrome and disease, pheochromocytoma, Conn's syndrome, diffuse toxic goiter) and hemodynamic arterial hypertension. Therapeutic and surgical treatment.

4. **Atherosclerosis.** Definition. Risk factors. Peculiarities of clinical manifestations depending on the predominant localization (aorta, coronary, mesenteric and renal arteries, arteries of the lower extremities). The importance of laboratory, radiation and other instrumental research methods. Complication. General principles of treatment.
5. **Acute myocardial infarction.** Definition. Classification. Features of the clinical course and diagnosis of acute myocardial infarction. The concept of "acute coronary syndrome". Complications of acute myocardial infarction (acute left ventricular failure, heart rhythm and conduction disturbances, myocardial rupture, acute heart aneurysm, post-infarction Dressler syndrome, etc.). Treatment tactics in different periods of acute myocardial infarction. Indications for surgical treatment.
6. **Chronic forms of CHD.** Features of the clinical course and diagnosis of various variants of stable angina pectoris. Peculiarities of clinical manifestations, criteria for diagnosis. Differentiated therapy of various forms of CAD. Therapy of angina attacks, acute left ventricular failure. Prognosis and working capacity in various forms of coronary heart disease.
7. **Heart failure.** Definition. The main reasons. Classification. Clinical manifestations and their features depending on the variant (systolic, diastolic), stage and functional class. Diagnostics. The value of echocardiography. Treatment.
8. **Congenital heart defects.** Definition. Atrial and ventricular septal defect, open ductus arteriosus, coarctation of the aorta. Eisenmenger syndrome. Value of non-invasive and invasive methods for diagnosis and differential diagnosis. Complication. Indications for surgical treatment.
9. **Acquired heart defects.** Defects of mitral, aortic, tricuspid valves. Etiology, mechanisms of violations of geodynamics. Classification. Combined mitral and aortic defects. Clinical manifestations. Value of non-invasive and invasive methods. Differential diagnosis. Complication. Indications for surgical treatment.
10. **Infectious endocarditis.** Definition. Etiology, pathogenesis. Diagnostic criteria. The value of laboratory methods and echocardiographic research in diagnostics. Differential diagnosis. Complications (heart failure, embolism, abscesses). Treatment. Modes of antibacterial therapy. Indications for surgical treatment.
11. **Myocarditis and cardiomyopathy** . Definition. Classification. Etiology and pathogenesis of the main types of cardiomyopathies (inflammatory, metabolic, idiopathic). Clinical manifestations, changes in ECG, echocardiography and other radiological research methods depending on the etiology and variant of the course. Diagnostic criteria and differential diagnosis. Complication. Features of treatment of various cardiomyopathies.
12. **Thromboembolism of the pulmonary artery.** Definition and classification. Risk factors. Clinical course of various forms. Diagnostic criteria, differential diagnosis. The diagnostic value of changes in these instrumental research methods. Treatment tactics. Indications for surgical treatment.

13. **Definition of pulmonary heart** . Etiology, pathogenesis. Classification. Clinical manifestations, changes in these instrumental research methods. Principles of differentiated treatment.

14. **Pericarditis** . Definition. Etiology and pathogenesis. Classification. Features of the clinic, course and diagnosis of various variants of pericarditis. Diagnosis verification methods. Heart tamponade. Indications for pericardial puncture, its diagnostic and therapeutic value. Differentiated therapy of various forms taking into account etiological factors.

15. **Neurocirculatory dystonia** . Definition. Features of clinical syndromes. Diagnosis criteria. Differentiated therapy.

16. Electrophysiological mechanisms **of arrhythmias (extrasystole, atrial fibrillation and flutter, ventricular tachycardia and ventricular fibrillation).** Clinic, ECG diagnosis and differential diagnosis. Complication. Medicinal and non-medicinal methods of treatment. The role of electroimpulse therapy. Emergency therapy for paroxysmal rhythm disturbances and sudden cardiac arrest.

17. Definition and etiology **of conduction disorders** , classification. Clinic and ECG diagnosis of atrioventricular blocks and bundle branch block. Tactics for acute and chronic conduction disorders. Emergency care for Morgan-Adams-Stokes attacks. Indications and principles of electrocardiostimulation (temporary, permanent).

18. The main symptoms of rheumatological pathology and research methods in rheumatology.

19. Acute rheumatic fever and chronic rheumatic heart disease. Definition. Classification. Clinical picture (carditis, polyarthritis, chorea, skin lesions). The importance of laboratory and instrumental research methods. Diagnostic criteria. Complication. Treatment taking into account the degree of activity.

20. Rheumatoid arthritis . Definition. Classification and nomenclature. Clinical picture taking into account the activity of the pathological process, stage of the disease, systemic manifestations. Diagnostic criteria, differential diagnosis. Complication. Treatment strategy.

21. Systemic lupus erythematosus . Definition. Classification. Clinical manifestations depend on the damage to organs and systems, the activity of the disease. Diagnostic criteria. Differential diagnosis. Complication. Principles of treatment.

22. Systemic scleroderma and dermatomyositis. Definition. Classification. The clinical picture depends on the damage to organs and systems. Diagnostic criteria, Differential diagnosis. Complication. Principles of treatment.

23. Hemorrhagic vasculitis (Schönlein-Henoch purpura, hypersensitivity vasculitis). Definition. Clinical manifestations, diagnostic criteria. Differential diagnosis. Treatment.

24. Polyarteritis nodosa. Definition. Clinical manifestations, diagnostic criteria. Differential diagnosis. Treatment.

25. Osteoarthritis . Definition. Etiology , pathogenesis. Classification. Clinical picture depending on the predominant localization of lesions. Diagnostics. Differential diagnosis. Drug and non-drug treatment.

26. Ankylosing spondyloarthritis. Definition. Classification. Clinical picture. Diagnostic criteria. Differential diagnosis. Treatment.

27. Reactive arthropathies. Definition. Etiology , pathogenesis. Classification. Clinical manifestations of reactive arthritis of various etiologies. Reiter's syndrome, the importance of laboratory and instrumental diagnostic methods. Diagnostic criteria, Differential diagnosis. Treatment, the role of antibacterial therapy.

28. Gout. Definition. Etiology, pathogenesis. Classification. Features of joint syndrome and damage to internal organs. Diagnosis criteria. Differential diagnosis. Complication. Principles of differentiated treatment. Prevention.

29. Glomerulonephritis. Definition. Pathogenesis of the main clinical syndromes. Classification. Clinical manifestations and diagnosis of individual forms. Differential

diagnosis. Complications (eclampsia, acute renal and chronic renal failure, etc.). Treatment taking into account the morphological variant and clinical course.

30. Definition, etiology, pathogenesis of nephrotic syndrome. Clinical manifestations. Diagnostic criteria and differential diagnosis. Complication. Treatment.

31. Pyelonephritis. Definition. Primary and secondary pyelonephritis. Clinical manifestations. Instrumental and laboratory methods of diagnosis. Differential diagnosis. Complication. Treatment.

32. Definition, etiology, pathogenesis of tubulo-interstitial nephritis. Clinical manifestations. Diagnostic criteria and differential diagnosis. Complication. Treatment. Emergency care for acute renal failure. Primary and secondary prevention. Forecast and performance.

33. Definition, etiology, pathogenesis of amyloidosis. Classification. Clinical manifestations of kidney amyloidosis. Diagnostic criteria. Differential diagnosis. Complication. Treatment.

34. Acute and chronic renal failure. Definition. Etiological factors. Pathogenesis of lesions of organs and systems, their clinical manifestations. The concept of "chronic kidney disease". Classification. Clinic and changes in laboratory indicators depending on the stage. Differential diagnosis. Complication. Treatment at different stages. Renal replacement therapy: hemodialysis, kidney transplantation.

35. Obesity and its consequences. Classification of obesity. The main medical consequences of obesity are metabolic syndrome, diabetes, cardiovascular and gastroenterological diseases. Modern approaches to dietary and drug treatment. The role of bariatric surgery.

36. Diagnosis and treatment of elderly people. Peculiarities of metabolism in old age. The frequency of comorbid pathology in the elderly. Peculiarities of the action of drugs on the body of an elderly person. Features of diagnosis and treatment in old age.

37. Primary and secondary prevention of internal diseases. The main primary and secondary risk factors for diseases of internal organs. Modifiable and non-modifiable risk factors. The main ways of prevention of the most common internal diseases.

38. Clinical epidemiology and biostatistics in the practice of a therapist. Methodology of evidence-based medicine and clinical epidemiology. Randomized clinical trials of medicines. Basic biostatistical criteria and methods used in clinical epidemiology and evidence-based medicine

List of practical works and tasks to prepare students for the exam

Basics of internal medicine

cardiology, rheumatology, nephrology, general questions of internal medicine)

1. Mastering the skills of interpretation of Doppler echocardioscopy data
2. Mastering the skills of interpreting stress tests
3. Mastering the skills of electrocardiogram interpretation
4. Mastering the skills of interpretation of X-ray contrast angiography data
5. Mastering the skills of interpretation of data from X-ray examination of chest organs
6. Mastering the skills to analyze the data of laboratory methods of research (microbiological examination of blood, acute phase indicators of blood, total protein and protein fractions, blood transaminases, coagulogram, laboratory markers of myocardial necrosis, blood lipid spectrum, blood creatinine, creatinine clearance, blood electrolytes, data of serological studies in autoimmune diseases processes
7. Mastering the skills of providing medical assistance in acute heart failure, collapse, shocks
8. Mastering the skills of providing medical assistance in hypertensive crisis

9. Mastering the skills of providing medical aid in paroxysmal rhythm disorders , in Morgani-Edems-Stokes syndrome

10. Mastering the skills of providing medical assistance in the event of circulatory and respiratory arrest, performing cardiopulmonary resuscitation

11. Mastering the skills of recording and interpreting the ECG

12. Mastering the skills of blood pressure measurement

13. Mastering the skills to analyze laboratory data (total blood analysis, total protein and protein fractions, creatinine, urea, blood uric acid, blood electrolytes, indicators of immune status, acute phase blood indicators, data from serological studies in autoimmune processes, laboratory indicators of the functional state of the liver and kidneys)

14. Mastering the skills of ECG registration and interpretation

15. Mastering the skills of interpreting the data of radiographic studies of the organs of the urinary system

16. Mastering the skills to analyze laboratory data (general analysis of urine, according to Nechiporenko and Zimnytskyi, data of microbiological examination of urine, general blood analysis, total protein and protein fractions, creatinine, urea, blood uric acid, blood electrolytes)

17. Mastering the skills of providing medical care in acute renal failure

18. Mastering the skills of examination and treatment of elderly people with pathology of internal organs

Literature ,which is recommended when studying the discipline "Internal Medicine":

Mandatory:

1. V. G. Perederii, S. M. Tkach. Clinical lectures on internal diseases in 2 volumes. Kyiv, Manuscript, 2014.

2. Sh . M. Ganja, V. M. Kovalenko, N. M. Shuba and others. Internal diseases. K.: Health, 2012. - 992 p.

3. Dzyak G.V., Netyazhenko V.Z., Khomazyuk T.A. etc. Basics of examination of the patient and scheme of medical history (handbook). - Dnsk, Art-press, 2012.

Additional literature

4. N.I. Shvets, A.V. Pidaev, T.M. Benza and others. Benchmarks of practical skills in therapy. Kyiv, Glavmeddruk, 2005, 540 p.

5. N.I.Shvets, A.V.Pidaev, T.M.Benza, etc. Urgent conditions in the clinic of internal medicine. Kyiv, 2006. – 752 pages.

6. P.M. Bodnar, O.M. Prystupyuk, O.V. Shcherbak and others. Endocrinology. K.: Zdorov"ya, 2012. – 512 p.

7. K.M. Amosova. Cardiology (in 2 volumes). Kyiv, Health, 2002.

8. A. S. Svintsitskyi, O. B. Yaremenko, O. G. Puzanova and others. Rheumatic diseases and syndromes. Directory. K.: "Knyga-plus", 2013. - 680 p.

9. Internal diseases. The editor of the first edition was T.Harrison. In 10 books. Trans. with Eng./ Ed. E. Braunvalda et al. M: Medicine. - 2013.

10. Internal medicine. I. Cecil, Russell L. (Russell La Fayette), 1881–2015. II. Goldman, Lee, MD. III. Ausiello, DA IV. Title: Textbook of medicine.

11. Grigoryev P.Ya., Yakovenko E.P. Diagnosis and treatment of chronic diseases of the digestive organs. - M.: Medicine, 1990.

12. Danilov I.P., Makarevich A.E. Chronic bronchitis. – Minsk: Belarus 1989.

13. Degtyareva I.I. Pancreatitis. - K.: Health, 1992.

14. Doshchytsyn V.L. Clinical analysis of electrocardiograms. - M.: Medicine, 1982.

15. Kovalenko N.N. Handbook of differential diagnosis of respiratory diseases. - K.: Zdorovya, 1992.

16. Clinical gastroenterology / Ed. G. I. Burchinsky. - K.: Zdorovya, 1993.

17. Podymova S.D. Liver diseases. - M.: Medicine, 1992.

18. Paleev N.R. Lung disease. - M.: Medicine, 1992.
19. Peleshchuk A.P., Pyatak O.A., Chekman I.S. Handbook of clinical pharmacology and pharmacotherapy. - K.: Zdorovya, 1996.
20. Paleev N.R. The therapist's handbook. - M.: Medicine, 1992.
21. Taylor R.B. Difficult diagnosis. - In 2 volumes - Moscow: Medicine, 1992.
22. Khvorostynka V.N. Guide to practical classes in gastroenterology. - M.: Medicine, 1990.
23. Shved M.I., Grebenyk M.V. Basics of clinical electrocardiography. – Ternopil "Ukrmedknyga", 2002
24. Handbook of clinical endocrinology / Ed. N.T. Starkova. - St. Petersburg: Peter, 1996.
25. Okorokov A.N.. Diagnostics of diseases of internal organs: Practice. manual: In 3 vols. Vol. 2. - Vitebsk, 1998.
26. A.N. Okorokov. Diseases of internal organs: Practice. management: In 3 vols. Vol. 2.- Plural.: Vysh.shk. Belmedkniga, 1997.
27. Endocrinology. Textbook for foreign students / Ed. P.N. Bodnara. - K., 1999.

Forms of control and assessment of students from the academic discipline "Internal Medicine"

Forms of control and the evaluation system are carried out in accordance with the requirements of the discipline program and instructions on the evaluation system of the student's educational activity under the credit-transfer system of the organization of the educational process, approved by the Ministry of Health of Ukraine.

The grade for the discipline is defined as the sum of the average converted score of the current educational activity and the exam grade (in points), which is assigned when evaluating theoretical knowledge and practical skills in accordance with the lists determined by the discipline program.

The maximum number of points assigned to students for mastering each module (credit) is 200, including for the current educational activity - 120 points (60%), according to the results of the final control of knowledge - 80 points (40%).

Current control is carried out in accordance with specific goals at each practical lesson, assimilation of content modules (interim control) - at the last lesson of each content module.

For control, it is recommended to use the following tools for diagnosing the student's level of training: tests, control of the implementation of practical skills in patient examination methods with further interpretation of the obtained data, analysis of the results of instrumental and laboratory tests.

Evaluation of current educational activities:

The current assessment of students on the relevant topics is carried out according to the traditional 4-point system (excellent, good, satisfactory, unsatisfactory).

The grade "excellent" is given in the case when the student knows the content of the class and the lecture material in full, illustrating the answer with various examples; gives exhaustively accurate and clear answers without any leading questions; teaches the material without errors and inaccuracies; freely solves problems and performs practical tasks of varying degrees of complexity.

The grade "good" is given on the condition that the student knows the content of the lesson and understands it well, answers the questions correctly, consistently and systematically, but they are not exhaustive, although the student answers additional questions without mistakes;

solves all problems and performs practical tasks, experiencing difficulties only in the most difficult cases.

The grade "satisfactory" is given to the student on the basis of his knowledge of the entire content of the lesson and at a satisfactory level of his understanding. The student is able to solve modified (simplified) tasks with the help of leading questions; solves problems and performs practical skills, experiencing difficulties in simple cases; is not able to give a systematic answer on his own, but answers directly to directly asked questions correctly.

An "unsatisfactory" grade is given in cases where the student's knowledge and skills do not meet the requirements for a "satisfactory" grade.

Evaluation of independent work:

Assessment of independent work of students, which is provided for in the topic along with classroom work, is carried out during the current control of the topic in the corresponding classroom lesson.

The evaluation of topics that are assigned only to independent work and are not included in the topics of classroom training sessions is controlled during the final knowledge control.

One of the types of the student's current educational activity is **the writing** of **a medical history**, which is provided for when studying each of the two modules.

The criteria for evaluating the medical history is carried out as follows:

	Rating
written methodically correctly, without comments	5
it is written methodically correctly, but individual sections are not detailed enough	4
there are separate remarks regarding the detailing and sequence of the description of the sections	3
the scheme and rules of writing medical history are violated	2

In case of receiving a "2" for medical history, the student must rewrite it taking into account the comments.

The minimum number of points that a student can score while studying a discipline is 72

Discipline exam

Students who have completed the curriculum from the 1st and 2nd semesters of the academic year and have received at least 72 points for the current educational activity (the average current success rate is 3.00) are allowed to take the exam at the end of each module.

The exam involves:

1. answer to 2 theoretical questions ,
2. demonstration of practical skills (from the list indicated at the end of the module) ,
3. analysis of the results of instrumental examination of the patient (situational task).

The maximum number of points that a student can get during the module control is 80.

The final test is considered passed if the student scored at least 50 points.

Criteria for evaluating the performance of practical skills in the exam:

	Rating
performed without errors	5
performed with minor deficiencies corrected during performance by the student himself	4

performed with deficiencies corrected by the teacher	3
not done	2

Evaluation of the discipline "Propaedeutics of internal medicine"

The internal medicine propaedeutics grade is given to students who have completed the curriculum from both academic semesters, have a current grade point average in the discipline of at least 3.00, and passed the discipline exam with a traditional grade of "3", "4", "5" .

The objectivity of the assessment of students' educational activity should be checked by statistical methods (correlation coefficient between current academic performance and exam results).

Assessment of discipline
(excerpt from the Regulation on the organization of the educational process)

1. For all credits except the last one

The current success rate (PU) is calculated according to *a 120-point scale* - from 72 points (grade 3) to 120 points (grade 5).

Points for the exam correspond to the scale:

Grade "5" - 80-71 points
Grade "4" - 70-61 points
Grade "3" - 60-50 points

the current academic record (PU) and the exam **in the relevant information of the dean's office** (Form No. H-5.03)

Points (the sum of current performance and final control) for midterm tests are entered by the teacher on the right side of the student's record book.

The current success rate for all *practical classes in the discipline* should be entered in the examination report (differential credit) (Form No. H-5.03) **without changes** according to *the 120-point system* (from 72 points (grade 3) to 120 points (grade 5))

2. The differential assessment should be carried out at the last lesson according to the schedule.
3. The exam is taken by the examination committee consisting of: the examiner (by order), members of the committee (representative of the dean's office or department) and the teacher who last taught in the given group.
4. The obtained points correspond to a fixed rating scale

Grade "5" - 200 - 180 points.
Grade "4" - 179-160 points.
Grade "3" - 159 - 122 points.

The results of the student passing the exam (differential credit) are recorded in the record of success (Form No. H-5.03)

In the score book, the points for the exam (differential score) are entered on the left side of the score book.

The grade in the discipline is assigned only to students who have been enrolled in all types of educational activities in the discipline (practical, classroom classes, semester exam or credit).

The number of points scored by the student in the discipline is defined as the arithmetic average of all current grades from practical classes in the discipline (the sum of current grades is divided by the number of practical classes in the discipline).

According to the decision of the academic council of the university, incentive points may be added to the number of points scored by the student in the discipline for the publication of scientific works, receiving prizes at Olympiads according to the profile of the discipline, etc.

Ranking according to the ECTS credit-transfer system and assignment of categories "A", "B", "C", "D, "E" is carried out for students of certain courses who are studying in one specialty and have successfully completed the study of the discipline.

Grades FX, F ("2") in the discipline are issued to students who did not receive the minimum number of points 72, which corresponds to the national scale "3" for the current performance after completing the study of the discipline and did not pass the exam.

The grade of FX is given to students who have scored the minimum number of points for the current educational activity, but have not passed the exam.

This category of students has the right to retake the semester exam according to the approved schedule during the winter or summer vacation (until July 1 of the current year) within two weeks after the end of the academic year.

According to the current regulatory framework of the Ministry of Education and Culture of Ukraine, retaking the semester exam is allowed no more than twice.

A grade of F is assigned to students who have attended all classroom classes in the discipline, but have not earned the minimum number of points for the current academic activity and are not admitted to the final examination. This category of students has the right to repeat the discipline.

Table

Distribution of points received by students
Grading scale: national on ECTS

The sum of points for all types of educational activities	ECTS assessment	Evaluation on a national scale	
		for an exam, course project (work), practice	for credit
180-200	A	perfectly	
170-179.99	B	fine	counted
160-169.99	C		
141-159.99	D	satisfactorily	
122-140.99	E		
	FX	unsatisfactory with the possibility of reassembly	not counted with the possibility of retaking
	F	unsatisfactory with mandatory repeated study of the discipline	not enrolled with mandatory repeated study of the discipline

The rating on the ECTS scale is included only in the supplement to the diploma of the European model "Diploma saplementa". In addition to the diploma of the national model, points are entered - an assessment for the discipline on a fixed scale.

"APPROVED''

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