

BOGOMOLETS NATIONAL MEDICAL UNIVERSITY

**Departments of internal medicine №1-4, endocrinology, phthiology
and pulmonology, neurology**

“APPROVED”

**Vice-rector for Scientific-Pedagogical
and Academic Work**

**Doctor of Medical Sciences,
Professor O.M. Vlasenko**



WORKING PROGRAM OF THE ACADEMIC DISCIPLINE

**MC 24. Internal medicine (gastroenterology, hematology, pulmonology, cardiology,
rheumatology, nephrology), including endocrinology, phthiology, emergency
conditions in neurology, medical practice training (professional education) internal
diseases**

Level of higher education second (master's degree)

Area of knowledge 22 Health care

Specialty 222 Medicine

Educational program EPP Medicine

2022-2023 academic year

Program Internal medicine (gastroenterology, hematology, pulmonology, cardiology, rheumatology, nephrology), including endocrinology, phthisiology, emergency conditions in neurology, medical practice training (professional education) internal diseases for students of level education the second (master's degree), specialty 222 Medicine, 4th-6th course of medical faculties, faculty for training of foreign citizens, faculty for training of doctors for the Armed Forces of Ukraine.

Developers:

Mostbauer H.V., PhD, associate professor, head of the department of internal medicine №2;

Komisarenko Y.I., doctor of medical sciences, professor, head of the department of endocrinology;

Mykhalchyshyn G.P., doctor of medical sciences, associate professor of the department of endocrinology;

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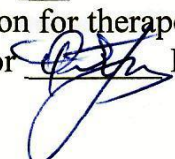
Petrenko V. I., doctor of medical sciences, professor, head of the department of phthisiology and pulmonology;

Noreyko S.B., doctor of medical sciences, professor of the department of phthisiology and pulmonology.

Program was approved at the meeting of Cyclic methodical commission for therapeutic disciplines

Protocol of "29" September 2022 № 1

Head of Cyclic methodical commission for therapeutic disciplines

Doctor of Medical Sciences, Professor  Iarenko O.B.

Reapproved:

for 20__/20__ (signature) (name, surname) « » 20__ protocol №

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Description of the academic discipline

Name of indicators	Area of knowledge, specialty, level of higher education	Characteristics of academic discipline
		Full time education
The number of credits is 31	Area of knowledge <u>22 Health care</u>	Compulsory
Modules – 3	Specialty <u>222 Medicine</u>	Year of education
Content modules – 20		4-6
Individual scientific and experimental task _____ (name)		Semester
Total number of credits/hours – 31/930		7-12
		Lectures
Weekly hours for full time education: classroom studies – 26 self-study work – 18	Educational level <u>Second (master's degree)</u>	25 hours
		Practical lessons
		625 hours
		Laboratory lessons
		0 hours
		Self-study work
		280 hours, including:
		Individual tasks:
		7 hours
		Type of control:
		Transfer credit, final control

1. The purpose, expected learning outcomes and criteria for evaluating learning outcomes

Purpose. The formation of the ability to apply the acquired knowledge, abilities, skills, and understanding to solve typical health care tasks as a doctor. The scope of the tasks is provided by defined lists of disease syndromes and symptoms, emergency conditions, and diseases that require special patient management tactics; laboratory and instrumental research, medical manipulations; labor and rehabilitation issues.

The discipline contributes to the formation of next competences and learning outcomes

Competencies:

Integral:

The ability to solve complex problems, including research and innovation in healthcare. The ability to continue learning with a high degree of autonomy.

General competences (GC):

GC 1. Ability to think abstractly, to analyze and synthesize the information.

GC 2. Ability to learn and master modern knowledge.

GC 3. Ability to apply knowledge in practical situations.

GC 4. Knowledge and understanding of the content of professional activity and responsibility for it.

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

GC 6. Ability to make informed decisions.

GC 7. Ability to work in a team.

GC 8. Interpersonal skills.

GC 9. Ability to communicate in the foreign language.

GC 10. Ability to make use of information and communication technologies.

GC 11. Ability to search, process and analyze information from various sources.

GC 12. Determination and perseverance in terms of tasks and responsibilities.

GC 13. Awareness of equal opportunities for all members of society and gender issues.

GC 14. The ability to exercise one's rights and responsibilities as a member of society, to understand the values of civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.

GC 15. The ability to preserve and multiply moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the development of society and in the general system of knowledge about nature and society, techniques and technologies, use different types and forms of physical activity to lead a healthy lifestyle.

Special (professional, subject-related) competences (PC):

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

PC 2. Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.

PC 3. Ability to establish a preliminary and clinical diagnosis.

PC 4. The ability to define the necessary work and rest schedule in the treatment and prevention of diseases.

PC 5. The ability to define the correct diet in the treatment and prevention of diseases.

PC 6. Ability to determine the principles and nature of treatment and prevention of diseases.

PC 7. Ability to diagnose the emergency conditions.

PC 8. Ability to provide emergency medical care and determine its tactics.

PC 10. Ability to perform medical manipulations.

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

PC 15. Ability to carry out a work capacity evaluation.

PC 16. Ability to maintain medical documentation, including electronic forms.

PC 21. Ability to convey one's own knowledge, conclusions, and arguments on health care problems and related issues in a clear and unambiguous way to specialists and non-specialists, especially to people who are studying.

PC 23. Ability to develop and implement scientific and practical projects in the field of health care.

PC 24. Compliance with ethical principles when working with patients.

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

Program learning results

PLR 1. Have deep knowledge of the structure of professional activity. To be able to carry out professional activities that require keeping up to date and integrating new knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.

PLR 2. Understanding and knowledge of fundamental and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.

PLR 3. Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.

PLR 4. Determine and identify leading clinical symptoms and syndromes; according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, their organs and systems, to establish a preliminary clinical diagnosis of the disease.

PLR 5. Collect complaints, medical history, assess the patient's psychomotor and physical development, the state of the organs and systems of the body, evaluate

the diagnosis-related information based on the results of laboratory and instrumental studies (according to list 4), taking into account the patient's age.

PR 6. To establish the final clinical diagnosis by making a reasoned decision and analyzing the acquired subjective and objective data of clinical and additional examinations. To carry out differential diagnosis, observe the relevant ethical and legal norms under the control of the head physician in a health care institution.

PLR 7. Prescribe and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) of patients with diseases of organs and body systems to carry out the differential diagnosis of diseases.

PLR 9. Determine the nature and principles of treatment of patients (conservative, operative), taking into account the age of the patient, location (inside or outside the health care institution, during medical evacuation, including the field conditions), considering the preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard guidelines. In case of the need to go beyond the standard guidelines, be able to justify the personalized recommendations under the control of the head physician in the medical institution.

PLR 10. Determine the necessary work, rest and nutrition schedule based on the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard guidelines.

PLR 14. Determine the tactics and provide emergency medical care in emergency situations in limited time in accordance with existing clinical protocols and standards of treatment.

PLR 17. Perform medical manipulations in the medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, adhering to the relevant ethical and legal norms.

PLR 18. Determine the state of functionality and limitations of a person's vital activities and the duration of incapacity for work. Prepare the relevant documents based on data about the disease and its course, peculiarities of a person's professional activity, etc. Maintain medical documentation regarding the patient and the population on the basis of regulatory documents.

PLR 21. Search for the necessary information in the professional literature, databases or other sources. Analyze, evaluate and apply this information.

PLR 22. Apply modern digital technologies, specialized software, statistical methods of data analysis to solve complex health care problems.

PLR 25. Convey one's own knowledge, conclusions, and arguments on health care problems and related issues to specialists and non-specialists in a clear and unambiguous way.

Learning results

To know:

- Standard survey and clinical examination guidelines of a patient with internal medicine diseases.
- Leading clinical symptoms or syndromes of internal medicine diseases.
- Criteria for preliminary diagnosis of internal medicine diseases.
- Diagnosis of internal medicine diseases.
- Necessary mandatory and additional (laboratory and instrumental) research methods and their diagnostic significance
- Differential diagnosis of internal medicine diseases.
- Criteria for clinical diagnosis of internal medicine diseases.
- The necessary work, rest, and nutrition schedule of patients with internal medicine diseases.
- Principles and nature of treatment of internal medicine diseases.
- Algorithms and standard guidelines for the treatment of internal medicine diseases.

- Criteria for the diagnosis of emergency conditions for internal medicine diseases.
- Tactics and delivery of emergency medical aid in emergency conditions for internal medicine diseases.
- Algorithms for performing medical manipulations.
- Primary and secondary prevention, prognosis and working capacity of patients with internal medicine diseases.
- Medical documentation, including electronic forms
- The use of the official documentation system in the professional work of a doctor, including modern software.
- Ethical principles when working with patients
- Principles of professional and academic integrity.

To be able to:

- Collect complaints, medical history, evaluate clinical data
- Identify the leading clinical symptom or syndrome
- Establish a preliminary diagnosis of the internal medicine diseases.
- Prescribe laboratory and instrumental (mandatory and additional) methods of examination of patients with internal medicine diseases and analyze their results.
- Carry out differential diagnosis of internal medicine diseases.
- Establish a clinical diagnosis of the internal medicine disease based on the analysis of the received data of clinical and additional examination, differential diagnosis.
- Determine the necessary work, rest, and nutrition schedule of patients with internal medicine diseases.
- Determine the principles and nature of treatment (conservative, operative) of patients with internal medicine diseases, taking into account the age of the patient, based on clinical diagnosis according to existing algorithms and standard guidelines.

- Carry out primary and secondary prevention of internal medicine diseases.
- Determine the working capacity and evaluate the prognosis of patients with internal medicine diseases.
- Diagnose emergency conditions
- Determine tactics and provide emergency medical assistance in case of urgent internal medicine diseases.
- Perform medical manipulations
- Maintain medical documentation, including electronic forms.
- Search for the necessary information in the professional literature and databases or other sources, analyze, evaluate and apply this information.
- Apply modern digital technologies, specialized software, statistical methods of data analysis to solve complex healthcare problems.
- Adhere to ethical principles when working with patients
- Maintain professional and academic integrity, be responsible for the reliability of the obtained scientific results.

Evaluation criteria of learning results

Current and final control are control measures carried out at the Bogomolets National Medical University (hereinafter - NMU) to determine the level of knowledge acquired by students, skills and abilities to the requirements of regulations on higher education and provide timely adjustment of the educational process in the relevant areas of training and specialties of NMU.

For each stage of the lesson and the unit of current control, the student receives the traditional grade "5-4-3-2". Then the teacher forms the arithmetic mean for the lesson, which is converted into points according to the scale (distribution) provided by the working curriculum. If the student receives "2" during the formation of the arithmetic mean traditional grade for the lesson, then this grade is converted into 0 points.

All the results of the control of knowledge are evaluated according to this scale:

59% or less correct answers – grade "2"

60% - 74% correct answers – grade "3"

75% -89% correct answers – grade "4"

90-100% correct answers – grade "5".

Evaluation criteria

Grade "5" is given if the student:

1. performed the work without mistakes and shortcomings.
2. admitted no more than one shortcoming.

Grade "4" is given if the student has completed the work completely, but made:

1. not more than one major mistake and one shortcoming;
2. no more than two shortcomings.

Grade "3" is given if the student correctly performed at least half of the work or made:

1. not more than two major mistakes or not more than one major and one minor mistake and one shortcoming;
2. not more than two or three major mistakes or one minor mistake and three shortcomings;
3. in the absence of mistakes, but in the presence of four or five shortcomings.

Grade "2" is given if the student:

1. made a number of mistakes (shortcomings) that exceed the criteria at which a grade of "3" can be set.
2. if correctly performed less than half of the tasks;
3. did not start work on tasks;
4. correctly performed no more than 10% of all tasks.

The final control is carried out in the form of a transfer credit – module 1 (4th year, 7-8 semesters), module 2 (5th year, 9-10 semesters) and final control –

module 3 (6th year, 11-12 semesters). The evaluation of the results of the final examination is carried out according to the 200-point knowledge control system adopted by the university and the national scale and is reflected in the relevant information.

2. PROGRAM OF THE ACADEMIC DISCIPLINE

INTERNAL MEDICINE (GASTROENTEROLOGY, HEMATOLOGY, PULMONOLOGY, CARDIOLOGY, RHEUMATOLOGY, NEPHROLOGY), INCLUDING ENDOCRINOLOGY, PHTHISIOLOGY, EMERGENCY CONDITIONS IN NEUROLOGY, MEDICAL PRACTICE TRAINING (PROFESSIONAL EDUCATION) INTERNAL DISEASES

930 hours/31 credits (lectures – 25 hours, practical lessons – 625 hours;
self-study work – 280 hours)

MODULE 1 (4th year)

INTERNAL MEDICINE (GASTROENTEROLOGY, HEMATOLOGY, PULMONOLOGY), INCLUDING ENDOCRINOLOGY, PHTHISIOLOGY), MEDICAL PRACTICE TRAINING (PROFESSIONAL EDUCATION) INTERNAL DISEASES

300 hours/10 credits (lectures – 19 hours, practical lessons – 177 hours,
self-study work – 104 hours)

Content module 1. Gastroenterology

72 hours/2.4 credits (lectures – 8 hours, practical lessons – 55 hours,
self-study work – 9 hours)

Topic1. Obesity and its consequences

The urgency of the problem. Methods of calculating excess body weight (body mass index) and determining obesity. Classification of obesity. The main medical consequences of obesity are metabolic syndrome, diabetes, cardiovascular and gastrointestinal diseases. Modern approaches to drug and non-drug treatment.

Topic 2. Gastroesophageal reflux disease

Definition. Etiology, pathogenesis. Classification. Erosive and non-erosive GERD, Barrett's esophagus. Clinical manifestations (typical and atypical). Data from laboratory and instrumental methods of research. Diagnostic criteria, differential diagnosis. Complication. Differentiated therapy. Primary and secondary prevention.

Topic 3. Dyspepsia. Chronic gastritis

Definition of dyspepsia. Etiology and pathogenesis. The role of Hb. pylori in the occurrence of gastroduodenal pathology. Classification. Unresearched and functional dyspepsia. Diagnosis criteria. Differential diagnosis. Modern approaches to the treatment of functional dyspepsia. Primary and secondary prevention. Forecast and performance.

Definition, etiology and pathogenesis of chronic gastritis. The role of Hb. pylori in the occurrence of chronic gastritis. Classification. Clinical manifestations, data of laboratory and instrumental research methods. The value of endoscopic (with morphology) examination. Differential diagnosis. Modern approaches to the treatment of various types of chronic gastritis. Primary and secondary prevention. Forecast and performance.

Topic 4. Peptic ulcer of the stomach and duodenum

Definition. The main causes of peptic ulcers (H. pylori, medications, etc.). Classification. Clinical manifestations. Complications (perforation, penetration, bleeding, stenosis, malignancy). Values of instrumental and laboratory diagnostic methods. Methods of diagnosing H. pylori-infection. Differential diagnosis. Patient management tactics. Eradication therapy, control of eradication efficiency. Drug therapy of H. pylory-negative ulcers. Indications for surgical treatment. Primary and secondary prevention. Forecast and performance.

Topic 5. Celiac disease and other enteropathies

Definition. Etiology, pathogenesis. The role of food component intolerance, immune factors and enzymopathies (intolerance of lactose, fructose, galactose, etc.). Syndromes of malabsorption and maldigestion. Diagnostic criteria,

differential diagnosis. Complication. Differentiated therapy. Primary and secondary prevention. Forecast and performance.

Topic 6. Inflammatory bowel diseases. Irritable bowel syndrome

Ulcerative colitis and Crohn's disease: definition, etiology and pathogenesis. Classification. Features of the clinical course depending on the degree of activity, severity and phase of the course. Laboratory and instrumental diagnostics. Diagnostic criteria, differential diagnosis. Intestinal and extraintestinal complications and diseases associated with inflammatory bowel diseases (toxic dilatation, perforation, sclerosing cholangitis, spondylitis, arthritis, dermatitis, uveitis, etc.). Treatment. Primary and secondary prevention. Forecast and performance.

Irritable bowel syndrome, definition. Etiology and pathogenesis. Classification. Clinical manifestations of different options. Roman diagnostic criteria. Differential diagnosis. Treatment of various forms. Primary and secondary prevention. Forecast and performance.

Topic 7. Gallstone disease, chronic cholecystitis and functional disorders of the biliary tract

Definition. Etiology, pathogenesis. The importance of infection, motility disorders and dyscholia in the development of chronic cholecystitis, cholangitis and gallstone disease. Classification. Features of the clinical course. Laboratory and instrumental methods of diagnosis. Differential diagnosis. Complications of gallstone disease. Treatment. Indications for surgical treatment. Primary and secondary prevention. Forecast and performance.

Topic 8. Chronic hepatitis

Definition. Classification. The role of virus persistence, toxic and medicinal agents, immune disorders and alcohol. Methods of diagnosis of viral infection. Autoimmune, toxic (drug-induced) and chronic viral hepatitis. Alcoholic liver disease. Basic clinical and biochemical syndromes. Features of the clinical course and diagnosis of individual forms. Differential diagnosis. Complication. Features

of treatment of various forms. Primary and secondary prevention. Forecast and performance.

Topic 9. Cirrhosis of the liver

Definition. Importance of viral infection, nutritional factors, alcohol, toxic substances, genetically determined metabolic defects and immune disorders. Classification. Peculiarities of clinical manifestations and diagnosis of various variants. Differential diagnosis. Liver failure and other complications. Differentiated therapy. Emergency therapy for complications. Primary and secondary prevention. Forecast and performance.

Topic 10. Chronic pancreatitis

Definition. The importance of various etiological factors. Classification. Peculiarities of the clinical course, diagnosis and differential diagnosis depending on the form and localization of the pathological process. Complication. Methods of research in the diagnosis of pancreatitis. Differentiated treatment. Primary and secondary prevention. Forecast and performance.

Content module 2. Hematology

30 hours/1 credit (lectures – 3 hours, practical lessons – 22 hours, self-study work – 5 hours)

Topic 11. Anemia

Posthemorrhagic, iron-deficient, B12-deficient, folio-deficient, aplastic, hemolytic anemia. Definition. Etiological factors and pathogenesis. Mechanisms of intravascular and intracellular hemolysis. Features of clinic and laboratory diagnostics of various forms. Differential diagnosis. Complication. Treatment of various forms of anemia. Transfusion of blood components and blood substitutes. Primary and secondary prevention. Forecast and performance.

Topic 12. Hemophilia and thrombocytopenic purpura

Definition. Etiology and pathogenesis, main clinical syndromes. Diagnosis criteria. Differential diagnosis. Treatment. Prevention of bleeding. Primary and secondary prevention. Forecast and efficiency.

Topic 13. Acute leukemias

Definition. Modern views on etiology and pathogenesis. Classification. Main clinical and hematological syndromes. Clinical manifestations. Diagnosis criteria. Differential diagnosis. Complication. Principles of treatment. Supportive therapy. Bone marrow transplantation. Primary and secondary prevention. Forecast and performance.

Topics 14. Chronic leukemias

Definition of chronic myeloid leukemia, chronic lymphoid leukemia, myeloma disease, polycythemia vera. Modern views on etiology and pathogenesis. Classification. Main clinical manifestations and clinical and hematological syndromes. Diagnosis criteria. Differential diagnosis. Complication. Principles of treatment. Bone marrow transplantation. Primary and secondary prevention. Forecast and performance.

Topic 15. Principles of evidence-based medicine

Definition of the concept. The role of evidence-based medicine in modern clinical practice. Components of evidence-based medicine. Basic concepts of clinical research. Medical and ethical aspects of evidence-based medicine.

Content module 3. Pulmonology

48 hours/1,6 credits (lectures – 4 hours, practical lessons – 38 hours,
self-study work – 6 hours)

Topic 16. Chronic obstructive pulmonary disease

Definition. The importance of smoking, environmental, occupational factors and infection in the development of chronic obstructive pulmonary disease. Classification. Clinical manifestations, data of laboratory and instrumental research methods depending on the stage (degree of severity). Differential diagnosis. Complication. Treatment. Primary and secondary prevention. Immunoprophylaxis. Forecast and performance.

Topic 17. Bronchial asthma

Definition. Etiology, features of pathogenesis. Classification. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis. Complication. Treatment. Emergency care for severe exacerbation of bronchial asthma. Primary and secondary prevention. Forecast and performance.

Topic 18. Pneumonia

Definition. Etiology. Classification. Clinical manifestations and features of the course depending on the causative agent. Data of laboratory and instrumental research methods. Differential diagnosis. Complications (acute respiratory distress syndrome, destruction of lung tissue, acute respiratory failure and others). Differentiated treatment. Primary and secondary prevention. Forecast and performance.

Topic 19. Pleurisy

Definition. Etiological factors. Classification. Clinical manifestations, data of laboratory and instrumental methods of research. Differential diagnosis. Complication. Indications for pleural puncture and drainage of the pleural cavity. Treatment. Primary and secondary prevention. Forecast and performance.

Topic 20. Infectious and destructive lung diseases

Definition. Risk factors for abscess, gangrenous abscess and lung gangrene. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis. Complication. Treatment. Indications for surgical treatment. Primary and secondary prevention. Forecast and performance.

Topic 21. Bronchiectasis

Definition of bronchiectasis. Factors that contribute to development. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis. Complication. Treatment. Indications for surgical treatment. Primary and secondary prevention. Forecast and performance.

Topic 22. Respiratory failure

Definition. Classification. Causes of occurrence. Pathogenesis. Clinical manifestations. Diagnostics, study of the function of external respiration, arterial and venous blood gases, indicators of the acid-base state of the blood. Differential

diagnosis. Treatment tactics. Primary and secondary prevention. Forecast and performance.

Topic 23. Diagnosis and treatment of diseases of internal organs in the elderly

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 of diseases of internal organs in old age.

Content module 4. Endocrinology

30 hours/1 credit (lectures – 2 hours, practical lessons – 16 hours, self-study work – 12 hours)

Topic 24. Diabetes mellitus, classification, etiology, pathogenesis, clinical presentation, diagnosis. Modern treatment of diabetes mellitus type 1

Diabetes mellitus, definition. Epidemiology of diabetes mellitus in Ukraine and worldwide, prognosis of morbidity, prevalence of diabetes mellitus amongst different age group. Etiology and pathogenesis of diabetes mellitus. Type 1 diabetes mellitus: role of viral infection and autoimmune processes, genetic predisposition. Type 2 diabetes mellitus: role of genetic predisposition, obesity, external factors. Insulineresistance and disturbance of insulin secretion. Classification of glucose intolerance states, clinical types of diabetes mellitus. Characteristics of internal organs damages due to diabetes mellitus: disturbances of cardio-vascular system, hepatobiliary system, kidneys and urinary tract, diabetic osteoarthropathy. Criteria of diagnosis of diabetes mellitus and other forms of hyperglycemia disturbances. Indications and method of performing of oral glucose tolerance test. Diagnostic importance of glycated hemoglobin test, glycated fructosamine test, C- peptide, glucosuria, ketonuria.

Main principles of therapy of diabetes mellitus. Criteria of compensation of glucose control in type 1 diabetes mellitus. Insuline therapy. Classification of insulin preparations, indications to their usage. Insulin analogues. Calculation of daily dose of insulin. Correction of dose of insulin according to bread units.

Regimes of insulintherapy: traditional (conventional), intensified (basic – bolus), pump therapy. Complications of insulintherapy: hypoglycemic states, allergic reactions, lypodystrophy, insulinresistance syndrome, Somogie syndrome, insulin oedema. Guidelines for management of type 1 diabetes mellitus.

Topic 25. Diabetes mellitus type 2, modern methods of treatment. Acute and chronic complications of diabetes mellitus

Algoorythm of treatment of diabetes mellitus type 2. Main principles of management: diet, controlled physical activity, medical preparations, self- control, patient education. Diet: physiological base, energy, restriction of simple carbohydrates, fibers, microelements, vitamins. Controlled physical activity and rules for its indications. Medical preparations: insulin sensitizers (metfomin, tiazolidinediones), secretagogues (sulfonylurea derivates, glinides), incretines (GLP- 1 analogues, DPP-4 inhibitors), α -glucosidase inhibitors, SGLT2i (sodium–glucose cotransporter 2 inhibitors), insulintherapy. Guidelines for management of type 2 diabetes mellitus.

Ketoacidosis. Ketoacidotic coma. Etiology, pathogenesis, clinical features, diagnosis and differential diagnosis, treatment. Hyperosmolar coma. Hypoglycemic coma. Etiology, pathogenesis, clinical features, diagnosis, treatment.

Chronic complications of diabetes mellitus. Microvascular complications (diabetic retinopathy, nephropathy, neuropathy); macrovascular complications (ischemic heart disease, cerebral vascular disturbances, diabetic foot syndrome). Classification, diagnosis, treatment.

Topic 26. Thyroid and parathyroid glands disorders

Definition of Iodine deficiency state. Clanical signs of iodine deficiency. Indication of iodine deficient (endemic) territories by prevalence of goiter and iodinurea level amongst different age groups of population. Estimation of size of thyroid gland. Diffuse non toxic and nodular goiter. Impact of inviroment and techical catastrophas on thyroid gland diseases. Iodine profilaxis: mass, group,

individual. Iodized salt in iodine prophylaxis. Iodine – containing drug restrictions to their usage.

Hypothyroidism: etiology, pathogenesis, clinical features, diagnosis and differential diagnosis, treatment. Primary, central, peripheral, subclinical, transient. Proper diagnosis of congenital hypothyroidism. Age impact on clinical course of hypothyroidism. Hypothyroidism as a part of autoimmune polyendocrinopathies. Subclinical hypothyroidism. Treatment of hypothyroidism. Pregnancy and hypothyroidism. Thyroiditis, clinical signs, diagnosis, treatment.

Diseases with thyrotoxicosis. Etiology, pathogenesis, clinical features of Grave's disease, endocrine ophthalmopathy, diagnosis and differential diagnosis, treatment: medicines, radioiodine ¹³¹I. Complications of treatment of Grave's disease.

Nodular goiter. Management of nodules in thyroid gland.

Pathomorphological classification of tumors in thyroid gland. Diagnosis of thyroid cancer. Impact of Chernobyl catastrophe in 1986 on thyroid cancer morbidity. Modern treatment and rehabilitation of the patients with thyroid cancer. Parathyroid glands disorders.

Parathyroid glands disorders. Hyperparathyroidism: etiology, pathogenesis, clinical features, diagnosis and differential diagnosis, treatment. Indications to surgery, postoperative period and rehabilitation. Medication treatment. Hypoparathyroidism: etiology, pathogenesis, clinical features, diagnosis and differential diagnosis, treatment.

Topic 27. Diseases of the hypothalamo-hypophysis system and adrenal glands. Obesity

Definition, epidemiology of acute and chronic adrenal insufficiency. Chronic adrenal insufficiency (Addison's disease). Etiology, pathogenesis, clinical features, diagnosis and differential diagnosis, treatment, prognosis. Acute adrenal insufficiency. Etiology, pathogenesis, clinical features, diagnosis and differential diagnosis, prophylaxis, treatment. Classification of tumors of adrenal glands. Itsenko – Cushing syndrome (glucocortinoma). Clinical features, diagnosis and differential

diagnosis, treatment. Androsteroma, corticoesteroma. Clinical features, diagnosis and differential diagnosis, treatment. Primary hyperaldosteronism (Conn syndrome). Clinical features, diagnosis and differential diagnosis, treatment. Pheochromocytoma. Clinical features, diagnosis and differential diagnosis, treatment. Congenital hyperplasia of adrenal cortex, clinical forms, diagnosis and treatment.

Classification of hypothalamo–pituitary diseases. Acromegaly. Etiology, pathogenesis, clinical features, diagnosis and differential diagnosis, treatment. Itsenko–Cushung disease. Etiology, pathogenesis, clinical features, diagnosis and differential diagnosis, treatment. Syndrome of hyperprolactinemia. Classification, etiology, pathogenesis, clinical features, diagnosis and differential diagnosis, treatment. Diabetes insipidus. Etiology, pathogenesis, clinical features, diagnosis and differential diagnosis, treatment. Nanism. Hypopituitarism. Etiology, pathogenesis, clinical features, diagnosis and differential diagnosis, treatment. Obesity. Etiology, pathogenesis, classification, clinical features, diagnosis treatment.

Content module 5. Phthisiology

60 hours/2 credits (lectures – 2 hours, practical lessons – 26 hours, self-study work – 32 hours)

Topic 28. General questions of phthisiology. Detection and diagnosis of tuberculosis.

The pathogenesis of tuberculosis, structure, metabolism, variability, resistance in the environment. Classification. Pathogenicity and virulence of mycobacteria. The main epidemiological indicators of TB infection and their evaluation. Epidemiology of tuberculosis in Ukraine and in the world. Sources of tuberculosis infection. The mechanism of infection transmission, the ways of infection. Pathogenesis of tuberculosis. Immunity in tuberculosis. Tuberculosis pathomorphosis. Clinical classification of tuberculosis. The concept of latent tuberculosis infection, primary and secondary tuberculosis. Risk groups.

Identification of symptoms that may indicate tuberculosis. Way of a patient with cough at the stage of primary care. Place of laboratory methods in detecting of tuberculosis. Microscopic diagnosis of tuberculosis. Bacteriological methods of diagnosis of tuberculosis. Molecular genetic diagnostics of tuberculosis. Application of Radiological Research in the Diagnosis of TB. The role of computer and magnetic resonance imaging in the diagnosis and differential diagnosis of tuberculosis. Radiological semiotics of pulmonary and extrapulmonary tuberculosis. The role of instrumental and invasive methods in confirming the diagnosis. Tuberculin diagnostics. Principle of the method, indications. The role of tuberculin diagnostics in detecting latent tuberculosis infection.

Topic 29. Clinical variants of the course of tuberculosis

Clinical variants of the course of tuberculosis of pulmonary, extrapulmonary, combined localization. Pulmonary, extrapulmonary, combined localization of tuberculosis. Generalized (miliary) tuberculosis. Tuberculosis of the pleura, lymph nodes, central nervous system. Tuberculosis in children. The influence of mass immunization against tuberculosis on the pathomorphosis of tuberculosis in children. The course of tuberculosis in a vaccinated and unvaccinated child.

Topic 30. General principles and methods of treatment of patients with pulmonary tuberculosis

Antituberculosis drugs. Modes of chemotherapy for sensitive and chemoresistant tuberculosis. The concept of chemoresistance. Treatment of extrapulmonary tuberculosis. Side effects of tuberculosis chemotherapy, strategies to overcome them. Treatment of tuberculosis in HIV-positive patients. Tuberculosis as a manifestation of the immune system recovery syndrome against the background of antiretroviral therapy Treatment monitoring, effectiveness assessment. Determining the results of tuberculosis treatment. Treatment under direct supervision. Outpatient and inpatient treatment of tuberculosis. Adherence to treatment. Methods of surgical treatment of pulmonary and extrapulmonary tuberculosis. Palliative care. Overcoming stigmatization and discrimination of tuberculosis patients.

Topic 31. Infection control and prevention of tuberculosis

The chain of infection transmission, ways of its interruption: detection, isolation, effective treatment of sources of infection, infection control, BCG vaccination, chemoprophylaxis. Infection control: administrative, engineering, individual aspects. Distribution of flows of patients, concepts of high, medium, and low risk zones. Respiratory hygiene. Control of the air condition of closed rooms: natural, artificial ventilation. Air filtration. UV irradiation: designs of irradiators. Individual respiratory protection: types of respirators, rules for selection and use. The concept of contact persons, foci of tuberculosis infection. Contact tracing. BCG vaccination: terms, contraindications, technique. Course of the post-vaccination period. Complications of BCG. Indications for chemoprophylaxis of tuberculosis. Modes of chemoprophylaxis.

Topic 32. Tuberculosis in combination with HIV infection and other diseases. Complications of tuberculosis

HIV-associated tuberculosis: the importance of the problem in Ukraine and the world. Pathogenesis of tuberculosis against the background of HIV infection. The importance of tuberculosis as an opportunistic infection. Course, diagnosis, treatment of TB/HIV co-infection. Antituberculosis and antiretroviral therapy appointment terms. Determination of the prognosis of the disease. Syndrome of recovery of the immune system in patients with HIV infection, its influence on the course of tuberculosis. The importance of other accompanying pathology in the course of tuberculosis: diabetes, pneumoconiosis, kidney disease, treatment with immunosuppressants, tumor necrosis factor. Tuberculosis and pregnancy. Emergencies in the tuberculosis clinic: spontaneous pneumothorax, pulmonary hemorrhage. Diagnostics, emergency care.

Content module 6. Medical practice training (professional education) internal diseases

60 hours/2 credits (lectures – 0 hours, practical lessons – 20 hours, self-study work – 40 hours)

Topic 33. Principles of organization of planned and emergency therapeutic care

Organization of the provision of planned and emergency therapeutic care and the work of a doctor in the internal medicine department of a hospital. Principles of ethics and deontology in the work of the doctor of the internal medicine department. Maintenance of medical documentation. Performing medical manipulations. Keeping a daily journal (appendix).

Topic 34. Management of a patient with the most common diseases of the digestive organs

Patient survey (complaints, medical history), physical examination of the patients with the most common diseases of the digestive organs. Establishing a preliminary diagnosis. Defining the examination plan and interpretation of the laboratory and instrumental research results. Carrying out a differential diagnosis, establishing a clinical diagnosis and prescribing treatment. Assessment of prognosis, work capacity, prevention. Maintenance of medical documentation. Performing medical manipulations. Keeping a daily journal.

Topic 35. Management of a patient with the most common diseases of the blood and hematopoietic organs

Patient survey (complaints, medical history), physical examination of the patients with the most common diseases of the blood and hematopoietic organs. Establishing a preliminary diagnosis. Defining the examination plan and interpretation of the laboratory and instrumental research results. Carrying out a differential diagnosis, establishing a clinical diagnosis and prescribing treatment. Assessment of prognosis, work capacity, prevention. Carrying out the medical manipulations. Keeping a daily journal.

Topic 36. Management of a patient with the most common diseases of the respiratory organs

Patient survey (complaints, medical history), physical examination of the patients with the most common respiratory diseases. Establishing a preliminary diagnosis. Defining the examination plan and interpretation of the laboratory and

instrumental research results. Carrying out a differential diagnosis, establishing a clinical diagnosis and prescribing treatment. Assessment of prognosis, work capacity, prevention. Maintenance of medical documentation. Carrying out the medical manipulations. Keeping a daily journal.

Topic 37. Diagnosis and provision of emergency medical care in emergency situations with diseases of the respiratory and digestive organs

Diagnosis and provision of emergency medical care in emergency situations with diseases of the respiratory and digestive organs (acute respiratory failure, biliary colic, acute liver failure, severe exacerbation of bronchial asthma, esophageal and gastrointestinal bleeding). Maintenance of medical documentation. Carrying out the medical manipulations. Keeping a daily journal.

MODULE 2 (5th year)

INTERNAL MEDICINE (cardiology, rheumatology, nephrology)

150 hours/5 credits (lectures – 6 hours, practical lessons – 104 hours, self-study work – 40 hours)

Content module 1. Cardiology

84 hours/2,8 credits (lectures – 4 hours, practical lessons – 58,5 hours, self-study works – 21,5 hours)

Topic 1. Atherosclerosis

Definition. Role hiperlipidemiy, general and local inflammation, damage to the vessel wall and platelets in the development of atherosclerosis. Risk Factors. Features of clinical manifestations depending on the preferentially localized (aorta, coronary, mesenteric and renal arteries, the arteries of the lower extremities). Value laboratory, radiation and other instrumental methods. Differential diagnosis. Complications. Treatment. Therapeutic tactics in different ways of course. Primary and secondary prevention. Prognosis and efficiency

Topic 2. Essential hypertension

Definition. The role of central and renal disorders mechanisms regulating blood pressure, endothelial function and other factors. Classification. Clinical manifestations of additional data and methods. Target organ damage. Differential diagnosis. Stratification of risk. Complications. Non-pharmacological and pharmacological treatment. Complicated and uncomplicated hypertensive crisis, especially therapeutic management. Primary and secondary prevention. Prognosis and efficiency.

Topic 3. Secondary (symptomatic) arterial hypertension

Definition. The main causes, diagnostic renal (renovascular, renoparenchymal), endocrine (syndrome and Cushing's disease, pheochromocytoma, Conn's syndrome, hyper- and hypothyroidism and hemodynamic (coarctation of the aorta) arterial hypertension. Hypertension in obstructive sleep apnea and pregnancy. The value of laboratory and instrumental methods for differential diagnosis and verification of the diagnosis. Treatment, including surgical treatment. Primary and secondary prevention. Prognosis and efficiency.

Topic 4. Chronic coronary syndromes

Definition of coronary heart disease (CHD). Etiology and pathogenesis. Classification of CHD. The concept of «Chronic coronary syndromes». Features of the clinical course and diagnosis of various forms of stable angina. Painless form of CHD, post-infarction and diffuse atherosclerosis. Diagnosis criteria. Differentiated therapy of various forms of CHD. Prognosis-modifying therapy. Choice of myocardial revascularization method in patients with CCS. Primary and secondary prevention. Forecast and efficiency.

Topic 5. Acute coronary syndromes (unstable angina, acute myocardial infarction)

Definition. Classification. Clinical course and diagnosis of acute myocardial infarction and unstable angina. Criteria for diagnosis. Complications of acute myocardial infarction (acute left ventricular failure, arrhythmias and conduction of the heart, myocardial rupture, acute cardiac aneurysm, postinfarction Dressler

syndrome etc.). Diagnosis. Therapeutic tactics in different periods of acute myocardial infarction. Prognosis-modifying therapy. Indications for surgical treatment. Rehabilitation. Primary and secondary prevention. Prognosis and efficiency.

Topic 6. Cardiac rhythm disorders

Definition. The etiology. Classification. Electrophysiological mechanisms of arrhythmias (extrasystoles, atrial fibrillation and atrial flutter, supraventricular and ventricular tachycardia, ventricular fibrillation). Ambulatory ECG diagnosis and differential diagnosis. Complications. Drug and non-drug therapies. The role of electric therapy. Emergency therapy for paroxysmal rhythm disturbances and sudden cardiac death. Primary and secondary prevention. Prognosis and efficiency.

Topic 7. Cardiac conduction disorders

Definition. The etiology. Classification. Clinic and ECG diagnosis of sinoatrial, atrioventricular block and bundle branch block blockade. Tactics in acute and chronic Conduction disorders of the heart. Emergency aid for attack Morgagni-Adams-Stokes. Indications and principles electrocardiostimulation (temporary, permanent). Primary and secondary prevention. Prognosis and efficiency.

Topic 8. Pulmonary heart. Pulmonary embolism

Pulmonary heart. Determination. Etiology, pathogenesis. Classification. Clinical manifestations of these changes additional research methods depending on the etiological factor. Differential diagnosis. The principles of differential treatment. Primary and secondary prevention. Prognosis and efficiency.

Pulmonary artery thromboembolism (PE). Definitions, risk factors. Classification. Pathogenesis of hemodynamic disorders. Clinical course. Diagnosis. Clinical assessment of the probability of pulmonary embolism. Laboratory and instrumental research methods. Diagnostic algorithms. Differential diagnosis. Treatment of patients in the acute phase of pulmonary embolism. Risk management strategy for patients with acute pulmonary embolism. Long-term

treatment and prevention of recurrence. Primary and secondary prevention. Forecast and efficiency.

Topic 9. Congenital heart disease in adults

Definition of Congenital heart disease in adults (the defect atrial and interventricular partitions, open ductus arteriosus, coarctation of the aorta). Mechanisms hemodynamic disorders, the importance of pulmonary hypertension. The value of non-invasive and invasive methods for the diagnosis and differential diagnosis. Complications. Eisenmenger syndrome. Treatment. Indications for surgical treatment. Preventing complications. Prognosis and efficiency.

Topic 10. Infective endocarditis. Acquired heart diseases

Infective endocarditis. Definition. Etiology, pathogenesis. The clinical picture. Features of course depending on the pathogen. Diagnostic criteria. The value of laboratory methods and research in echocardiographic diagnosis. Differential diagnosis. Complications (cardiac failure, embolism, abscess, etc.). Treatment. Profiles of antibiotic therapy. Indications for surgical treatment. Primary and secondary prevention. Prognosis and efficiency.

Acquired heart diseases. Definition. Anomalies of the mitral, aortic, tricuspid valves. The etiology, hemodynamic mechanisms. Classification. Combined mitral and aortic defects. Clinical manifestations. The value of non-invasive and invasive methods. Differential diagnosis. Complications. Treatment. Indications for surgical treatment. Primary and secondary prevention. Prognosis and efficiency.

Topic 11. Myocarditis and cardiomyopathy

Definition. Classification. Etiology and pathogenesis of the main types of cardiomyopathy (inflammatory, metabolic, idiopathic etc.). Clinical manifestations. The value of laboratory and instrumental methods of research in diagnostics. Criteria for the diagnosis and differential diagnosis. Complications. Features treating various types of cardiomyopathies. Primary and secondary prevention. Prognosis and efficiency.

Topic 12. Pericarditis

Definition. Etiology and pathogenesis. Classification. Clinical-flow and diagnosis of different variants of pericarditis. Methods of verification of diagnosis. Differential diagnosis. Cardiac tamponade. Indications for puncture pericardium and its diagnostic and therapeutic value. Differentiated treatment of various forms of etiologic factors into account. Primary and secondary prevention. Prognosis and efficiency.

Topic 13. Acute and chronic heart failure

Acute heart failure. Definition. The main causes. The pathogenesis of disorders of the central and peripheral hemodynamics in various forms (lack of left and right heart). Classification. Clinical manifestations. Diagnosis. Treatment at pre-hospital, hospital stages and pre-discharge. Management of acute decompensated heart failure, acute pulmonary edema, isolated right ventricular failure, cardiogenic shock.

Chronic heart failure. Definition. The main causes. Pathogenesis, role of neurohumoral activation and cardiac remodeling. Classification. Clinical manifestations and their features depending on the variant (with reduced ejection fraction, mildly reduced ejection fraction and preserved ejection fraction), stage and functional class. Diagnosis. The value of laboratory and instrumental methods. Treatment, including prognosis-modifying therapy. Primary and secondary prevention. Prognosis and efficiency.

Content module 2. Rheumatology

39 hours/1,3 credits (lectures – 1 hours, practical lessons - 27 hours,
self-study works – 11 hours)

Topic 14. Acute rheumatic fever. Systemic connective tissue diseases (systemic lupus erythematosus)

Acute rheumatic fever. Definition. The role of streptococcal infection and immunological reactivity of acute rheumatic fever. Classification. Clinical picture (carditis, polyarthritis, chorea, skin lesions). The value of laboratory and instrumental methods. Criteria for diagnosis. Differential diagnosis Complications.

Treatment considering the degree of activity. Primary and secondary prevention. Prognosis and efficiency.

Systemic lupus erythematosus. Systemic lupus erythematosus. Definition. Etiological factors and pathogenesis. Classification. Clinical manifestations depending on diseased organs and systems and disease activity. Laboratory values, including immunological, methods. Diagnostic criteria. Differential diagnosis. Complications. Principles of treatment considering the degree of activity. Pulse therapy. Prevention. Prognosis and efficiency.

Topic 15. Systemic connective tissue diseases (systemic scleroderma, poly-/dermatomyositis)

Definition. Etiological factors, pathogenesis. Classification. Depending on the clinical picture of lesions and systems. Diagnostic criteria. Differential diagnosis. Complications. Treatment. Prevention. Prognosis and efficiency.

Topic 16. Systemic vasculitis

Hemorrhagic vasculitis (Henoch-Schoenlein vasculitis) hypersensitivity vasculitis, nodular polyarteritis. Definition. Etiology, pathogenesis. Clinical manifestations, diagnostic criteria. Differential diagnosis. Treatment. Prevention. Prognosis and efficiency.

Topic 17. Rheumatoid arthritis

Definition. Etiology, pathogenesis. Role of disturbances of the immune status of the disease. Classification. Clinical considering activity of pathological process, stage of disease, systemic manifestations. The value of laboratory and instrumental methods for the diagnosis of the disease, its stage and activity. Criteria for the diagnosis, meaning the study of synovial fluid. Differential diagnosis. Complications. Strategy treatment. Basic therapy. Tactics of treatment with glucocorticoids and NSAIDs. Prevention. Prognosis and efficiency.

Topic 18. Osteoarthritis. Gout

Definition. Etiology, pathogenesis. Classification. The clinical picture depending on the preferentially localized lesions. Diagnosis. Differential diagnosis.

Pharmacological and non-pharmacological treatment. Primary and secondary prevention. Prognosis and efficiency.

Topic 19. Spondylarthritis (Axial spondylarthritis. Reactive arthritis)

Axial spondylarthritis, including ankylosing spondylitis. Definition. Etiology, pathogenesis. Classification. The clinical picture. Value instrumental and laboratory methods. Criteria for diagnosis. Differential diagnosis. Pharmacological and non-pharmacological treatment. Prevention. Prognosis and efficiency.

Reactive arthritis. Definition. Etiology, pathogenesis. Classification. Clinical manifestations of reactive arthritis of various etiologies. Reiter's syndrome, the value of laboratory and instrumental methods of diagnosis. Criteria for diagnosis, differential diagnosis. Treatment, role of antibiotic therapy. Primary and secondary prevention. Prognosis and efficiency.

Content module 3. Nephrology

27 hours/0,9 credits (lectures – 1 hours, practical lessons – 18,5 hours, self-study works – 7,5 hours)

Topic 20. Glomerulonephritis. Renal amyloidosis

Glomerulonephritis. Definition. Etiology, the role of streptococcal infection and immunological disorders in disease development. Pathogenesis. Classification. Clinical manifestations and diagnosis of certain forms. Differential diagnosis. Complications (eclampsia, acute left ventricular failure, etc.). Treatment options considering the morphological and clinical course. Primary and secondary prevention. Prognosis and efficiency.

Amyloidosis. Definition. The etiology. Pathogenesis. Classification. Clinical manifestations of renal amyloidosis. Criteria for diagnosis. Differential diagnosis. Complications. Treatment. Primary and secondary prevention. Prognosis and efficiency.

Topic 21. Pyelonephritis. Tubulointerstitial nephritis

Pyelonephritis. Definition. The role of infection in inflammatory diseases of the urinary tract. Classification. Clinical manifestations. Instrumental and

laboratory diagnostic methods. Differential diagnosis. Complications. Treatment. Primary and secondary prevention. Prognosis and efficiency.

Tubulointerstitial nephritis. Definition. The etiology. Pathogenesis. Clinical manifestations. Criteria for the diagnosis and differential diagnosis. Complications. Treatment. Primary and secondary prevention. Prognosis and efficiency.

Topic 22. Acute kidney damage

Acute kidney damage. Definition. The etiology. Classification. Clinical manifestations and changes in laboratory parameters. Diagnostic criteria. Differential diagnosis. Complications. Treatment of acute kidney damage and its complications. Renal replacement therapy: hemodialysis, hemofiltration, hemodiafiltration. Indications and contraindications, complications. Primary and secondary prevention. Prognosis and efficiency.

Topic 23. Chronic kidney disease

Chronic kidney disease. Definition. Etiological factors. Pathogenesis of lesions and systems, their clinical manifestations. Classification. Clinical and laboratory parameters change depending on the stage. Diagnostic criteria. Differential diagnosis. Complications. Treatment depending on the stage and renoprotection. Renal replacement therapy: hemodialysis, hemofiltration, hemodiafiltration, kidney transplantation. Indications and contraindications for renal replacement therapy, complications. Primary and secondary prevention. Prognosis and efficiency.

MODULE 3 (6TH YEAR)

INTERNAL MEDICINE, INCLUDING PHTHISIOLOGY, ENDOCRINOLOGY, EMERGENCY CONDITIONS IN NEUROLOGY, MEDICAL PRACTICE TRAINING (PROFESSIONAL EDUCATION)

INTERNAL DISEASES

Total hours/credits 480/16 (lectures – 0 hours, practical lessons – 344 hours,
self-study works – 136 hours)

Content module 1. Management of patients with major symptoms and syndromes in the cardiology clinic

54,5 hours/1,8 credits (practical lessons – 49,5 hours, self-study works – 5 hours)

Topic 1. Management of a patient with arterial hypertension

Major diseases and conditions accompanied by arterial hypertension: essential (primary) and secondary hypertension, including of renal origin (renovascular, renal parenchymal); endocrine (Cushing's syndrome and disease, pheochromocytoma, primary hyperaldosteronism, hyperthyroidism, hypothyroidism); coarctation of the aorta, isolated systolic hypertension, hypertension associated with pregnancy. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of hypertension. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 2. Management of a patient with chronic (recurring) chest pain

Major diseases and conditions accompanied by chronic pain in the chest: diseases of the cardiovascular system (coronary heart disease, including stable angina, aortic root stenosis, hypertrophic cardiomyopathy); diseases of the digestive system (gastroesophageal reflux disease, cardiospasm, spasm of the esophagus, hiatal hernia, peptic ulcer and duodenal ulcer); diseases of the musculoskeletal system (osteocondrosis of the thoracic spine); panic disorder. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with chronic pain in the chest. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 3. Management of a patient with acute chest pain

Major diseases and conditions accompanied by acute pain in the chest: diseases of the cardiovascular system (acute coronary syndrome, acute pericarditis,

acute myocarditis, coronaritis, aortic dissection, pulmonary embolism); respiratory diseases (pleurisy, pneumothorax); diseases of the musculoskeletal system (myositis, costochondritis); diseases of the nervous system (shingles, intercostal neuralgia). Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with acute pain in the chest. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 4. Management of a patient with cardiac arrhythmias

Differential diagnosis of supraventricular and ventricular arrhythmia, fibrillation and atrial flutter. Clinical Management of patients. Main classes of antiarrhythmics, indications for their use, side effects. Electro-impulsive therapy. Non-pharmacological treatment of arrhythmias, including cardiac catheterization. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 5. Management of a patient with cardiac conduction disorders

Violation of sinoatrial conduction, atrioventricular block of varying degrees, bundle branch block. Sick sinus syndrome. Frederick syndrome. ECG diagnosis. Clinical Management of patients, additional instrumental examination. Methods of electrocardiostimulation. Primary and secondary prophylaxis, Prognosis and work capacity.

Topic 6. Management of a patient with dyspnea and edema

Major diseases and conditions accompanied by shortness of breath: heart failure with preserved and reduced left ventricular systolic function, respiratory failure due to the violation of bronchial permeability, and lung and pleural diseases; pulmonary vascular pathology, including pulmonary embolism; anemia; hyperventilation syndrome in case of neuroses. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated

with shortness of breath. Primary and secondary prophylaxis. Prognosis and work capacity.

Major diseases and conditions accompanied by edematous syndrome: local (venous) edema, chronic venous insufficiency, impaired venous drainage, deep vein thrombosis, lymphedema: inflammatory and obstructive; swelling associated with lesions of musculoskeletal system: arthritis, tendovaginitis, lipedema, orthostatic, idiopathic and general edema (nephrotic syndrome, cardiovascular diseases with development of heart failure, liver diseases, including cirrhosis and other conditions associated with hypoproteinemia: protein-losing enteropathy, malabsorption syndrome, nutritional and cachectic edema, endocrine diseases, including hypothyroidism and medication-induced edema). Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with edematous syndrome. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 7. Management of a patient with pulmonary hypertension

Major diseases and conditions accompanied by pulmonary hypertension: idiopathic, hereditary, associated with taking medications or toxins, associated with connective tissue diseases (systemic lupus erythematosus, systemic sclerosis), HIV infection, portal hypertension (cirrhosis), congenital heart defects in the stage of Eisenmenger's syndrome, acquired heart diseases (mitral stenosis); pulmonary hypertension associated with lung disease/hypoxia (chronic obstructive pulmonary disease), diseases that limit movement of the chest (ankylosing spondylitis, kyphosis, kyphoscoliosis); in case of pulmonary embolism and chronic thromboembolic pulmonary hypertension. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated

with pulmonary hypertension. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 8. Management of a patient with a heart murmur

Major diseases and conditions accompanied by systolic and/or diastolic murmurs in the heart, congenital heart defects (ventricular septal defect, atrial septal defect, open arterial duct, coarctation of the aorta); acquired heart defects (mitral stenosis, insufficiency of mitral valve, mitral valve prolapse, aortic valve insufficiency, tricuspid valve insufficiency, hypertrophic cardiomyopathy, "innocent" systolic murmur in young age). Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with a heart murmur. Indications for surgical treatment. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 9. Management of a patient with chronic heart failure

Main causes, pathogenesis. Classification. Criteria for chronic heart failure with reduced left ventricular (LV) ejection fraction (EF), mildly reduced LVEF, and preserved LVEF. Clinical manifestations. Differential diagnostic value of clinical manifestations and data of additional laboratory and instrumental research methods. Algorithm of differential diagnosis. Patient management tactics depending on the option, functional class and stage of heart failure. Medicinal and non-medicinal, including surgical, treatment, impact on the prognosis of various treatment methods. Primary and secondary prevention. Forecast and performance.

Content module 2. Management of patients with major symptoms and syndromes in the rheumatology clinic

30 hours/1 credit (practical lessons – 27,5 hours, self-study works – 2,5 hours)

Topic 10. Management of a patient with the pain in the back and limbs

Major diseases and conditions that are accompanied by pain in the limbs and in the back: spondylarthritis (ankylosing spondylitis, reactive arthritis, arthritis associated with Crohn's disease and ulcerative colitis), osteochondrosis, osteoporosis, dermatomyositis/polymyositis, neuropathy of different genesis, particularly caused by vasculitis, diabetes etc. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with pain in the back and limbs. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 11. Management of a patient with articular syndrome

Major diseases and conditions that are accompanied by articular syndrome: rheumatoid arthritis, osteoarthritis, reactive arthritis, gout, systemic lupus erythematosus, systemic sclerosis, dermatomyositis/polymyositis, nodular polyarteritis, acute rheumatic fever. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with pain in the back and limbs. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 12. Management of a patient with purpura

Major diseases and conditions that are accompanied by purpura: hemorrhagic vasculitis, hypersensitive vasculitis, nodular polyarteritis, idiopathic thrombocytopenic purpura, syndrome of disseminated intravascular coagulation. Differential diagnostic significance of clinical symptoms and further laboratory data and instrumental methods. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with purpura. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 13. Management of a patient with fever

Major diseases and conditions that are accompanied by prolonged fever: infective endocarditis, systemic connective tissue diseases, nodal polyarteritis, rheumatoid arthritis, malignant neoplasms, including leukemias, lymphomas, multiple myeloma, Hodgkin's disease, sepsis, tuberculosis, Crohn's disease, AIDS. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with fever. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 14. Management of a patient with weight loss

Major diseases and conditions that are accompanied by weight loss: cancer, systemic connective tissue diseases, particularly systemic lupus erythematosus, dermatomyositis/polymyositis, systemic sclerosis; systemic vasculitis, including nodular polyarteritis; diseases of the digestive tract, lungs, cardiovascular system, alimentary and psychogenic weight loss. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with weight loss. Primary and secondary prophylaxis. Prognosis and work capacity.

Content module 3. Management of patients with major symptoms and syndromes in the gastroenterology clinic

42 hours/1,4 credits (practical lessons – 38,5 hours, self-study works – 3,5 hours)

Topic 15. Management of a patient with dysphagia and heartburn

Major diseases and conditions that are accompanied by dysphagia: esophagitis, including those with gastroesophageal reflux disease; cancer of the esophagus, diffuse esophageal spasm, achalasia cardia, esophageal diverticulum,

systemic sclerosis, dysphagia in case of the damage to the central and peripheral nervous and muscular systems.

Major diseases and conditions involving heartburn, gastroesophageal reflux disease, undiagnosed dyspepsia, chronic gastritis, peptic ulcer and duodenal ulcer. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with dysphagia and heartburn. Primary and secondary prophylaxis, Prognosis and work capacity.

Topic 16. Management of a patient with dyspepsia

Definition. Main causes of development. Classification. Functional dyspepsia and its variants: epigastric pain syndrome and postprandial distress syndrome. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 17. Management of a patient with abdominal pain

Major diseases and conditions accompanied by chronic abdominal pain: cholecystitis, dyskinesia of the gallbladder and sphincter of Oddi, cholelithiasis, pancreatitis, chronic gastritis, peptic ulcer and duodenal ulcer, irritable bowel syndrome, Crohn's disease, ulcerative colitis. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with chronic abdominal pain. Indications for surgical treatment. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 18. Management of a patient with diarrhea and constipation

Major diseases and conditions associated with prolonged diarrhea: chronic atrophic gastritis, diseases of operated stomach, Zollinger-Ellison syndrome,

irritable bowel syndrome, Crohn's disease, syndrome of excessive bacterial growth in the small intestine, celiac disease, food intolerance, Whipple disease, ulcerative colitis, chronic pancreatitis, diabetic enteropathy, amyloidosis, acquired immune deficiency syndrome. The role of food intolerance components, enzymopathies and immune factors. Malabsorption and maldigestion syndromes. Secretory, exudative, dysmotoric and functional diarrhea. Main scatological syndromes. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with diarrhea. Primary and secondary prophylaxis. Prognosis and work capacity.

Major diseases and conditions, accompanied by constipation: irritable bowel syndrome, bowel cancer, anorectal diseases, hypothyroidism, neurogenic and psychogenic disorders, eating disorders, situational and iatrogenic constipation. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with constipation. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 19. Management of a patient with jaundice

Major diseases and conditions that are accompanied by jaundice: chronic hepatitis, cirrhosis and liver cancer, hemolytic anemia, cholelithiasis, pancreatic head cancer, cancer of the major duodenal papilla, benign hyperbilirubinemia. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with jaundice. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 20. Management of a patient with hepatomegaly and hepatolienal syndrome

Major diseases and conditions that are accompanied by hepatomegaly and hepatolienal syndrome: diseases of the liver parenchyma and vessels, including chronic hepatitis, cirrhosis and liver cancer, hepatic vein thrombosis; diseases of the blood and blood-forming organs, including leukemia, Hodgkin's disease, erythremia; right-ventricular heart failure, particularly in case of constrictive pericarditis; storage diseases, including hemochromatosis etc.. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with hepatomegaly and hepatolienal syndrome. Indications for surgical treatment. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 21. Management of a patient with portal hypertension and ascites

Major diseases and conditions that lead to the development of portal hypertension and ascites: cirrhosis and liver tumors, right-ventricular heart failure, particularly in case of constrictive pericarditis, hepatic vein thrombosis, thrombosis of the portal vein or its branches; thrombosis, stenosis, obliteration of the inferior vena cava at the level of hepatic veins or above etc. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with portal hypertension and ascites. Indications for endoscopic and surgical treatment (bypass surgery, liver transplantation). Primary and secondary prophylaxis. Prognosis and work capacity.

Content module 4. Management of patients with major symptoms and syndromes in the pulmonology clinic

36 hours/1,2 credits (practical lessons - 33 hours, self-study works – 3 hours)

Topic 22. Management of a patient with pulmonary infiltrate

Major diseases and conditions that are accompanied by pulmonary infiltrates: pneumonia, infiltrative pulmonary tuberculosis, pulmonary eosinophilic infiltration, pulmonary infarction, lung cancer, benign lung tumors, pulmonary sarcoidosis, focal fibrosis. Significance of clinical symptoms and further laboratory data and instrumental method in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with pulmonary infiltrate. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 23. Management of a patient with chronic cough

Major diseases and conditions that are accompanied by cough: chronic obstructive pulmonary disease, asthma, tuberculosis, bronchiectasis, malignant tumors of the lungs and bronchi, pneumoconiosis, left-ventricular heart failure, gastroesophageal reflux disease and post nasal drip syndrome. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with cough. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 24. Management of patients with broncho-obstructive syndrome

Major diseases and conditions accompanied by broncho-obstructive syndrome: chronic obstructive pulmonary disease, asthma, cancer of the trachea, bronchi and mediastinum. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with broncho-obstructive syndrome. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 25. Management of a patient with cyanosis

Major diseases and conditions that are accompanied by cyanosis, heart and lung disease, including congenital heart at Eisenmenger syndrome, acquired heart

defects (mitral stenosis), cardiac and respiratory failure, and the formation of abnormal hemoglobin. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with cyanosis. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 26. Management of a patient with hemoptysis

Major diseases and conditions that are accompanied by hemoptysis: malignant tumors of the bronchi and the lungs, tuberculosis, pneumonia, bronchiectasis, pulmonary abscess, mitral stenosis, pulmonary infarction etc. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with hemoptysis. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 27. Management of a patient with pleural effusion

Major diseases and conditions that are accompanied by pleural effusion: pneumonia, tuberculosis, cancers of the lungs and pleura, heart failure, acute pancreatitis, cirrhosis, nephrotic syndrome, systemic connective tissue diseases, chest trauma. Significance of clinical symptoms and further laboratory data and instrumental methods in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with pleural effusion. Indications for pleural puncture, possible complications. Primary and secondary prophylaxis. Prognosis and work capacity.

Content module 5. Management of patients with major symptoms and syndromes in the hematology clinic

21 hours/0,7 credits (practical lessons - 18 hours, self-study works – 3 hours)

Topic 28. Management of a patient with anemia

Differential diagnosis of posthemorrhagic, iron- and B12-deficient, aplastic, hemolytic anemias. Significance of clinical symptoms and laboratory, instrumental methods data in differential diagnosis. The algorithm of differential diagnosis. Clinical management of the patient. Non-pharmacological and pharmacological treatment. Indications, contraindications, technique and possible complications of blood components and substitutes transfusion. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 29. Management of patients with leukocytosis and lymphadenopathy

Major diseases and conditions accompanied by leukocytosis: lymphoma, acute and chronic lymphoid and myeloid leukemias, reactive lymphadenitis, sepsis. Differential diagnosis of clinical symptoms and laboratory, instrumental investigations` results. Differential diagnosis algorithm. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases accompanied by leukocytosis. Primary and secondary prophylaxis. Prognosis and work capacity.

Major diseases and conditions accompanied by lymphadenopathy: Hodgkin and non-Hodgkin malignant lymphomas, acute and chronic lymphoid and myeloid leukemia, infectious mononucleosis, reactive lymphadenitis, tuberculosis, sarcoidosis, metastatic lesions of lymph nodes, systemic connective tissue diseases, AIDS, sepsis. Differential diagnosis of clinical symptoms and laboratory, instrumental investigations` results. Differential diagnosis algorithm. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases accompanied by lymphadenopathy. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 30. Management of a patient with bleeding

Major diseases and conditions accompanied by bleeding: hemophilia, idiopathic thrombocytopenic purpura, malignant diseases of the blood, accompanied by thrombocytopenia. Differential diagnosis of clinical symptoms, laboratory and instrumental methods results. Differential diagnosis algorithm.

Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases associated with hemorrhagic syndrome. Primary and secondary prophylaxis. Prognosis and work capacity.

Content module 6. Management of patients with major symptoms and syndromes in the nephrology clinic

18 hours/0,6 credits (practical lessons – 16,5 hours, self-study works – 1,5 hours)

Topic 31. Management of a patient with urinary syndrome

Major diseases and conditions accompanied by urinary syndrome: acute and chronic glomerulonephritis, tubulointerstitial renal diseases, pyelonephritis, cystitis, urethritis, urolithiasis, diabetic nephropathy, renal infarction, renal tuberculosis, hypernephroma, hemorrhagic vasculitis. Significance of clinical symptoms and laboratory, instrumental investigations' results in differential diagnosis. Differential diagnosis algorithm. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases accompanied by urinary syndrome. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 32. Management of a patient with nephrotic syndrome

Major diseases and conditions, accompanied by nephrotic syndrome: acute and chronic glomerulonephritis, renal amyloidosis, diabetic nephropathy, multiple myeloma. Significance of clinical symptoms and laboratory, instrumental investigations' results in differential diagnosis. Differential diagnosis algorithm. Clinical management of the patient. Non-pharmacological and pharmacological treatment of major diseases accompanied by nephrotic syndrome. Primary and secondary prophylaxis. Prognosis and work capacity.

Topic 33. Management of a patient with chronic kidney disease

Definition and classification of chronic kidney disease. Etiological factors. Pathogenesis of the lesions of organs and systems, their clinical manifestations. Diagnostic value of laboratory and instrumental methods. Clinical management of the patient, differentiated non-pharmacological and pharmacological treatment on

different stages. Substitution therapy: dialysis, renal transplantation. Indications and contraindications, possible complications. Primary and secondary prophylaxis. Prognosis and work capacity.

Content module 7. Emergency conditions in the clinic of internal medicine

78 hours/2,6 credits (practical lessons – 71,5 hours, self-study works – 6,5 hours)

Topic 34. Tactics in patients with cardiac and respiratory arrest

Urgent diagnosis and emergency care standards in the pre-hospital and hospital care. Algorithms of cardio-pulmonary resuscitation. Drug support. Prolonged life support and tactics of further management of patients.

Topic 35. Management of a patient with hypertensive crisis

Diagnosis criteria of hypertensive urgencies and hypertensive emergencies. Standards of emergency treatment in the pre-hospital and hospital care depending on the type of the crisis and damage to target organs. Prevention of hypertensive crisis.

Topic 36. Management of a patient with acute coronary syndrome

Diagnostic criteria, differential diagnosis and standards of emergency treatment for pre-hospital and hospital care. Clinical management of patients depending on the variant of acute coronary syndrome. Therapy with evidence of improving the prognosis. Primary and secondary prophylaxis.

Topic 37. Management of a patient with pulmonary embolism

Diagnostic criteria, differential diagnosis and standards of emergency treatment of pulmonary embolism. Tactics of treatment depending on the severity of the condition. Primary and secondary prophylaxis.

Topic 38. Management of a patient with acute heart failure

Diagnostic criteria, differential diagnosis and standards of emergency treatment of acute heart failure in the pre-hospital and hospital care. Tactics of treatment depending on the cause and clinical variant. Primary and secondary prophylaxis.

Topic 39. Management of a patient with shock

Diagnostic criteria, differential diagnosis and emergency treatment in the pre-hospital and hospital care depending on the cause: hypovolemic, cardiogenic, obstructive, distributive, including anaphylactic and septic shocks. Further management of patients.

Emergency conditions caused by immediate hypersensitivity reactions (anaphylactic shock, laryngeal edema, Quincke's edema): diagnostic criteria, standards of emergency treatment in pre-hospital and hospital care. Secondary prophylaxis.

Topic 40. Management of a patient with paroxysmal heart rhythm disorders and heart conduction disorders

Ventricular extrasystole of high gradations, supraventricular (including in WPW syndrome) and ventricular paroxysmal tachycardia, atrial fibrillation and flutter. Diagnostic standards, differential diagnosis and emergency treatment at the pre-hospital and hospital stages. Treatment tactics depending on the type of heart rhythm disorder and hemodynamic state. Electropulse therapy and electrocardiostimulation. Prevention recommendations.

High grade atrioventricular blocks. Stokes-Adams syndrome. Standards of diagnostics, differential diagnosis and emergency treatment in pre-hospital and hospital care. Treatment tactics. Recommendations for the prophylaxes.

Topic 41. Management of a patient with acute respiratory failure

Acute respiratory failure (including ventilation, pulmonary, due to violations of ventilation-perfusion ratios): diagnostic criteria, differential diagnosis, standards of emergency treatment in the pre-hospital and hospital care depending on the cause and severity. Recommendations for prophylaxis.

Topic 42. Management of a patient with the melena and hematemesis

Diagnostic criteria, differential diagnosis and treatment. Clinical management of patients depending on the cause (esophageal varices bleeding, gastric erosions, peptic ulcer of stomach and duodenum, cancers, ulcerative colitis, hemorrhagic vasculitis) and severity. The role of endoscopic, instrumental and

laboratory methods of investigation. Conservative treatment, indications for transfusion. Indications for endoscopic hemostasis or urgent surgical treatment. Primary and secondary prophylaxis.

Topic 43. Management of a patient with an acute hepatic failure

Clinical features depending on the etiology. Diagnostic criteria, differential diagnosis. The role of laboratory and instrumental methods of investigation. Standards of emergency treatment. Differential diagnosis of hepatic and uremic coma. Artificial and bio-combined devices for hepatic substitution therapy. Liver transplantation. Predictors of a poor prognosis. Recommendations for prophylaxis.

Topic 44. Management of a patient with oliguria

Standards for the diagnosis and management of the patients. Clinical management of the patients depending on the cause (pre-renal, renal, post-renal). The role of instrumental and laboratory methods of investigation. Conservative treatment, indications for hemodialysis. Recommendations for prophylaxis.

Topic 45. Management of a patient with a coma

Diagnostic criteria, differential diagnosis and treatment. Determining the cause, treatment strategy based on etiology (comas which are caused by a primary lesion of the central nervous system, for example in stroke, meningitis; caused by the loss of electrolytes, water; linked to the violation of gas exchange, including hypoxic; toxic comas: uremic, hepatic, alcohol-induced; caused by a respiratory failure etc.). Recommendations for prophylaxis.

Topic 46. Management of a patient with syncope

Diagnostic criteria, differential diagnosis and emergency treatment in the pre-hospital and hospital care depending on the cause (cardiogenic causes: in particular, the structural pathology - valvular heart disease, including aortic stenosis, hypertrophic cardiomyopathy, pericarditis/cardiac tamponade, prosthetic valve dysfunction, aortic dissection, high grade pulmonary hypertension, pulmonary embolism; arrhythmogenic: paroxysmal cardiac arrhythmias, sinus node dysfunction, high grade atrioventricular block, artificial pacemaker dysfunction; reflexive syncope, including vasovagal, situational, caused by the

stimulation of the carotid sinus and syncope caused by orthostatic hypotension).
Primary and secondary prophylaxis.

Content module 8. Endocrinology

30 hours/1 credit (practical lessons – 14 hours, self-study works – 16 hours)

Topic 47. Management of patients with diabetes mellitus

Criteria for the diagnosis of diabetes mellitus and other categories of hyperglycemia. Indications and rules for glucose tolerance test. Diagnostic value of glycated hemoglobin, glucosuria, ketonuria. Criteria for compensation of metabolism, achievement of normoglycemia. Ketoacidotic conditions in diabetes mellitus. Etiology, pathogenesis, clinic, diagnosis, differential diagnosis, treatment. The main methods of treatment of diabetes mellitus, diet, dosed exercise, insulin therapy, teaching the patient, self-control.

Complications of insulin therapy: hypoglycemic conditions, insulin allergy, post-injection lipodystrophy, insulin resistance, chronic insulin overdose (Somogy syndrome), insulin edema.

Chronic complications of diabetes mellitus. Classification. Diabetic nephropathy, stages of development, diagnosis, differential diagnosis, treatment and prevention. Diabetic retinopathy: stages of the process, diagnosis, prevention and treatment. Diabetic neuropathy, classification, diagnosis and treatment. Diabetic foot, classification, diagnosis, treatment.

Topic 48. Management of patients with underlying thyroid disease

The concept of endemic (non-toxic) and nodular forms of goiter. Diseases accompanied by thyrotoxicosis. Rationale for the diagnosis of thyrotoxicosis. Medical, surgical treatment of toxic goiter. Chronic thyroiditis. Rationale for the diagnosis of autoimmune thyroiditis. Nodular forms of goiter. Classification of thyroid tumors. Rationale for the diagnosis of thyroid cancer

Topic 49. Management of a patient with ketoacidotic and hypoglycemic emergencies, thyrotoxic and addisonian crises

Etiology and pathogenesis of diabetic (ketoacidotic) coma. Clinical features and course options. Diagnosis and differential diagnosis. Algorithm for providing medical care to patients with diabetic coma.

Hypoglycemic coma and hypoglycemia, the main causes, provoking factors. Classification of hypoglycemia by severity, diagnosis. Treatment of hypoglycemia depending on the severity.

Etiology and pathogenesis thyrotoxic and addisonian crises. Clinical manifestations, diagnosis and differential diagnosis. Algorithm for providing emergency care.

Content module 9. Phthisiology

30 hours/1 credit (practical lessons – 15 hours, self-study works – 15 hours)

Topic 50. Management of tuberculosis patients

Individual approach to the patient. Adherence of a tuberculosis patient to treatment. Therapy under the direct supervision of a medical worker: treatment of a patient with tuberculosis in an inpatient and outpatient setting. Standards of treatment of tuberculosis patients. Differential diagnosis of pulmonary dissemination, infiltrative changes, focal and rounded shadows, cavity formations in the lungs. Additional laboratory and instrumental examination methods (accelerated cultural methods of MBT detection - VASTEK, Xpert MTB/RIF, genetic laboratory methods - nucleic acid amplification tests (PCR), serological tests for tuberculosis, computer tomography of the chest organs, fibrobronchoscopy with lavage water sampling for microscopic and cultural examination, transthoracic/transbronchial or open puncture lung biopsy, thoracoscopy with pleural biopsy with sampling of exudate for microscopic and cultural examination). Secondary prevention of tuberculosis.

Topic 51. Management of patients with chemoresistant tuberculosis

Clinical manifestations, symptoms and signs of multidrug-resistant tuberculosis and tuberculosis with widespread drug resistance. Establishing a diagnosis of drug-resistant tuberculosis. New technological achievements of express diagnostics of multidrug-resistant tuberculosis. Tactics of patient

management and standards of treatment of patients with drug-resistant tuberculosis. Results of treatment of multidrug-resistant tuberculosis. Surgical treatment of multidrug-resistant tuberculosis and tuberculosis with widespread drug resistance. Recommendations for the prevention of chemoresistant tuberculosis.

Topic 52. Management of patients with tuberculosis in combination with HIV infection

Clinical picture of tuberculosis in HIV-infected patients. Diagnosis of tuberculosis in HIV-infected persons, diagnosis of HIV infection in tuberculosis patients. Treatment of co-infection of tuberculosis and HIV: treatment of tuberculosis, treatment of HIV infection (concept of immune reconstitution syndrome). Prevention of tuberculosis in HIV-infected people. Control over tuberculosis/HIV co-infection. Implementation of prophylactic co-trimoxazole therapy for HIV-infected patients with tuberculosis.

Content module 10. Emergency conditions in neurology

30 hours/1 credit (practical lessons – 15 hours, self-study works – 15 hours)

Topic 53. Management of a patient with an acute cerebrovascular disorder

Short scheme of neurological examination. Clinical classification of acute cerebrovascular disorders. Glasgow coma scale. Cerebral coma and criteria for its diagnosis. Transient cerebrovascular disorders. Transient ischemic attacks. Ischemic cerebral stroke. Hemorrhagic stroke. Criteria for diagnosis. Differential diagnosis. Intensive care in the acute period. Subarachnoid hemorrhage. Criteria for diagnosis, differential diagnosis. Principles of the intensive care in the acute period. Management of patients after a stroke. Secondary prevention of stroke. Standards of treatment.

Topic 54. Management of a patient with epileptic and non-epileptic paroxysmal states

Types and causes of a short-term loss of consciousness. Epileptic attack. Neurogenic syncope. Somatogenic syncope. Psychogenic syncope. Drop attacks. Differential diagnosis and treatment. The role of instrumental and laboratory methods of investigation.

Epilepsy. Status epilepticus, diagnosis and emergency care.

Topic 55. Management of a patient with an infectious and infectious-allergic diseases of central and peripheral nervous system

Meningeal syndrome. Methods of detection meningeal symptoms. Diagnosis and differential diagnosis of the different types of meningitis. Criteria for diagnosis of encephalitis (herpetic, parainfectious, after vaccination). Neuroborreliosis (neurological manifestations of Lyme disease). Diagnosis of poliomyelitis, myelitis, neuroborreliosis.

Infectious-allergic mononeuropathy and polyradiculoneuropathy (Guillain–Barré syndrome, post-diphtheritic polyneuropathy, chronic demyelinating polyneuropathy).

Topic 56. Management of a patient with acute pain syndromes in the case of damage to the central and peripheral nervous system

Headache. Primary (migraine, muscle tension pain) and secondary. Prosopalgia. Neuralgia of a trigeminal nerve, pterygopalatine node ganglionitis, Hunt's syndrome. Diagnosis, differential diagnosis, instrumental methods of examination and treatment.

Back pain. Vertebrogenic lesions of the nervous system: reflex and radicular syndromes of cervical, thoracic and lumbosacral levels. Diagnosis, differential diagnosis, instrumental methods of investigation and treatment.

Non-vertebrogenic pain syndromes (herpetic ganglionitis, brachial plexitis, carpal canal syndrome). Diagnosis, differential diagnosis, instrumental methods of investigation and treatment.

Topic 57 Management of a patient with neurological manifestations of HIV-infection

Types of damage of nervous system, caused by HIV: acute meningoencephalitis, atypical aseptic meningitis, myelopathy, damage of a peripheral nervous system, AIDS-related dementia. Etiology, pathogenesis, main clinical manifestations.

Damage of a nervous system that occurs against the background of immunodeficiency: caused by toxoplasmosis, herpes simplex virus, cytomegalovirus, papovavirus, fungi. Tumors of the central nervous system in patients with AIDS: primary lymphoma, Kaposi's sarcoma. Cerebrovascular disorders in patients with AIDS. Diagnosis of the neurological manifestations of AIDS, treatment, prognosis, prevention.

Content module 11. Medical practice training (professional education) internal diseases

105 hours/3,5 credits (practical lessons – 40 hours, self-study works – 65 hours)

Topic 58. Principles of organization of medical care in Ukraine

Principles of organization of medical care in Ukraine, basics of Ukrainian legislation on health care. Organization of planned and emergency therapeutic care and doctor's work in the therapeutic department of a hospital. Duties and rights of the doctor of the therapeutic department. Principles of ethics and deontology in the work of the doctor of the therapeutic department. Maintenance of medical documentation. Keeping a daily journal (Appendix 2).

Topic 59. Management of a patient with diseases of the cardiovascular system

Patient survey (collect complaints, medical history, organs and systems surveys, life history), physical examination of the patients with diseases of the cardiovascular system. Identification of the leading symptom or syndrome. Establishing a preliminary diagnosis. Defining the examination plan, interpretation of the laboratory and instrumental research results. Diagnostic criteria. Carrying out a differential diagnosis; carrying out and substantiating a clinical diagnosis and

prescribing non-pharmacological and pharmacological treatment, including prognosis-modifying treatment. Assessment of prognosis, work capacity, prevention. Maintenance of medical documentation. Carrying out the medical manipulations. Keeping a daily journal.

Topic 60. Management of a patient with diseases of the musculoskeletal system and connective tissue

Patient survey (collect complaints, medical history, organs and systems surveys, life history), physical examination of the patients with diseases of the musculoskeletal system and connective tissue. Identification of the leading symptom or syndrome. Establishing a preliminary diagnosis. Defining the examination plan, interpretation of the laboratory and instrumental research results. Diagnostic criteria. Carrying out a differential diagnosis; carrying out and substantiating a clinical diagnosis and prescribing non-pharmacological and pharmacological treatment, including prognosis-modifying treatment. Assessment of prognosis, work capacity, prevention. Maintenance of medical documentation. Carrying out the medical manipulations. Keeping a daily journal.

Topic 61. Management of a patient with diseases of the digestive system

Patient survey (collect complaints, medical history, organs and systems surveys, life history), physical examination of the patients with diseases of the digestive organs. Identification of the leading symptom or syndrome. Establishing a preliminary diagnosis. Defining the examination plan, interpretation of the laboratory and instrumental research results. Diagnostic criteria. Carrying out a differential diagnosis; carrying out and substantiating a clinical diagnosis and prescribing non-pharmacological and pharmacological treatment, including prognosis-modifying treatment. Assessment of prognosis, work capacity, prevention. Maintenance of medical documentation. Carrying out the medical manipulations. Keeping a daily journal.

Topic 62. Management of a patient with diseases of the respiratory organs

Patient survey (collect complaints, medical history, organs and systems surveys, life history), physical examination of the patients with diseases of the respiratory system. Identification of the leading symptom or syndrome. Establishing a preliminary diagnosis. Defining the examination plan, interpretation of the laboratory and instrumental research results. Diagnostic criteria. Carrying out a differential diagnosis; carrying out and substantiating a clinical diagnosis and prescribing non-pharmacological and pharmacological treatment, including prognosis-modifying treatment. Assessment of prognosis, work capacity, prevention. Maintenance of medical documentation. Carrying out the medical manipulations. Keeping a daily journal.

Topic 63. Management of a patient with diseases of the blood and hematopoietic organs

Patient survey (collect complaints, medical history, organs and systems surveys, life history), physical examination of the patients with diseases of the of the blood and hematopoietic organs. Identification of the leading symptom or syndrome. Establishing a preliminary diagnosis. Defining the examination plan, interpretation of the laboratory and instrumental research results. Diagnostic criteria. Carrying out a differential diagnosis; carrying out and substantiating a clinical diagnosis and prescribing non-pharmacological and pharmacological treatment, including prognosis-modifying treatment. Assessment of prognosis, work capacity, prevention. Maintenance of medical documentation. Carrying out the medical manipulations. Keeping a daily journal.

Topic 64. Management of a patient with diseases of the genitourinary system

Patient survey (collect complaints, medical history, organs and systems surveys, life history), physical examination of the patients with diseases of the genitourinary system. Identification of the leading symptom or syndrome. Establishing a preliminary diagnosis. Defining the examination plan, interpretation of the laboratory and instrumental research results. Diagnostic criteria. Carrying out a differential diagnosis; carrying out and substantiating a clinical diagnosis and

prescribing non-pharmacological and pharmacological treatment, including prognosis-modifying treatment. Assessment of prognosis, work capacity, prevention. Maintenance of medical documentation. Carrying out the medical manipulations. Keeping a daily journal.

Topic 65. Differential approach to providing emergency medical care in emergency situations with diseases of the cardiovascular system

Provision of emergency medical care in emergency conditions with diseases of the cardiovascular system (hypertensive crisis, acute coronary syndrome, acute heart failure, circulatory and respiratory arrest, paroxysmal heart rhythm disorders (paroxysmal tachycardia and atrial fibrillation/flutter)) taking into account age, concomitant diseases, pregnancy. Maintenance of medical documentation. Performing medical manipulations. Keeping a daily journal.

Topic 66. Differentiated approach to providing emergency medical care in emergency situations with diseases of the digestive organs

Provision of emergency medical care in emergency conditions with diseases of the digestive organs (biliary colic, acute liver failure, esophageal and gastrointestinal bleeding) taking into account age, concomitant diseases, pregnancy. Maintenance of medical documentation. Performing medical manipulations. Keeping a daily journal.

Topic 67. Differential approach to providing emergency medical care in emergency situations for diseases of the respiratory organs and genitourinary system

Provision of emergency medical care in emergency conditions with diseases of the respiratory organs and genitourinary system (acute respiratory failure, severe exacerbation of bronchial asthma, acute kidney damage) taking into account age, concomitant diseases, pregnancy. Maintenance of medical documentation. Performing medical manipulations. Keeping a daily journal.

4. Structure of academic discipline

Names of content modules and topics	Number of hours
	full time education

	total	including				
		l.	p.	lab.	ind.	s-s.w.
1	2	3	4	5	6	7
Module 1 (4th year). Internal medicine (gastroenterology, hematology, pulmonology), including endocrinology, phthisiology, medical practice training (professional education) internal diseases						
Content module 1. Gastroenterology						
Topic 1. Obesity and its consequences	6		5,5			0,5
Topic 2. Gastroesophageal reflux disease	7	1	5,5			0,5
Topic 3. Dyspepsia. Chronic gastritis	7	1	5,5			0,5
Topic 4. Peptic ulcer of the stomach and duodenum	7	1	5,5			0,5
Topic 5. Celiac disease and other enteropathies	7		5,5		1	0,5
Topic 6. Inflammatory bowel diseases. Irritable bowel syndrome	7	1	5,5			0,5
Topic 7. Gallstone disease, chronic cholecystitis and functional biliary disorders	7	1	5,5			0,5
Topic 8. Chronic hepatitis	7	1	5,5			0,5
Topic 9. Cirrhosis of the liver	7,5	1	5,5			1
Topic 10. Chronic pancreatitis	7,5	1	5,5			1
Preparation and writing of medical history	2					2
Together according to the content module 1	72	8	55		1	8
Content module 2. Hematology						
Topic 11. Anemia	6,5		5,5			1
Topic 12. Hemophilia and thrombocytopenic purpura	7,5	1	5,5			1
Topic 13. Acute leukemias	7,5	1	5,5			1
Topic 14. Chronic leukemias	7,5		5,5		1	1
Topic 15. Principles of evidence-based medicine	1	1				
Together according to the content module 2	30	4	22,0		1	4
Content module 3. Pulmonology						
Topic 16. Chronic obstructive pulmonary disease	7,5	1	5,5			1
Topic 17. Bronchial asthma	7	1	5,5			0,5
Topic 18. Pneumonia	7,5	1	5,5			1
Topic 19. Pleurisy	6		5,5			0,5

Topic 20. Infectious and destructive lung diseases.	6		5,5			0,5
Topic 21. Bronchiectasis	6		5,5			0,5
Topic 22. Respiratory failure	7		5		1	1
Topic 23. Diagnosis and treatment of diseases of internal organs in the elderly	1	1				
Together according to the content module 3	48	3	38		1	5
Content module 4. Endocrinology						
Topic 24. Diabetes mellitus, classification, etiology, pathogenesis, clinical presentation, diagnosis. Modern treatment of Diabetes mellitus type 1	7,5	0,5	4			3
Topic 25. Diabetes mellitus type 2, modern methods of therapy. Acute and chronic complications of diabetes mellitus	7,5	0,5	4			3
Topic 26. Thyroid and parathyroid glands disorders	8	1,0	4			3
Topic 27. Diseases of the hypothalamo-hypophysis system and adrenal glands. Obesity	7		4			3
Together according to the content module 4	30	2	16			12
Content module 5. Phthisiology						
Topic 28. General issues of phthisiology. Detection and diagnosis of tuberculosis	13	1	5			7
Topic 29. Clinical variants of the course of tuberculosis	12		5			7
Topic 30. General principles and methods of treatment of tuberculosis patients	12	1	5			6
Topic 31. Infection control and prevention of tuberculosis	11,5		5,5			6
Topic 32. Tuberculosis in combination with HIV infection and other diseases. Complications of tuberculosis	11,5		5,5			6
Together according to the content module 5	60	2	26			32
Content module 6. Medical practice training (professional education) internal diseases						

Topic 33. Principles of organization of planned and emergency therapeutic care	11		4			7
Topic 34. Management of a patient with the most common diseases of the digestive organs	12		4			8
Topic 35. Management of a patient with the most common diseases of the blood and hematopoietic organs	12		4			8
Topic 36. Management of a patient with the most common diseases of the respiratory organs	12		4			8
Topic 37. Diagnosis and provision of emergency medical care in emergency situations with diseases of the respiratory and digestive organs	13		4		1	8
Together according to the content module 6	60		20		1	39
Total number of hours for module 1	300	19	177		4	100
						104
Module 2 (5th year). Internal medicine (cardiology, rheumatology, nephrology)						
Content module 1. Cardiology						
Topic 1. Atherosclerosis	5,5		4,5			1
Topic 1. Essential hypertension	7	1	4,5			1,5
Topic 3. Secondary arterial hypertension	6		4,5			1,5
Topic 4. Chronic coronary syndromes	7	1	4,5			1,5
Topic 5. Acute coronary syndromes (unstable angina, acute myocardial infarction)	7	1	4,5			1,5
Topic 6. Cardiac rhythm disorders	6		4,5			1,5
Topic 7. Cardiac conduction disorders	6		4,5			1,5
Topic 8. Pulmonary heart. Pulmonary embolism	6		4,5			1,5
Topic 9. Congenital heart disease in adults	6		4,5			1,5
Topic 10. Infective endocarditis. Acquired heart diseases	6		4,5			1,5
Topic 11. Myocarditis and cardiomyopathy	6		4,5			1,5
Topic 12. Pericarditis	5,5		4,5			1
Topic 13. Acute heart failure. Chronic heart failure	8	1	4,5		1	1,5

Writing a medical history	2					2
Together according to the content module 1	84	4	58,5		1	20,5
Content module 2. Rheumatology						
Topic 14. Acute rheumatic fever. Systemic connective tissue diseases (systemic lupus erythematosus)	6,5		4,5			2
Topic 15. Systemic connective tissue diseases (systemic scleroderma, poly/dermatomyositis)	6,5		4,5			2
Topic 16. Systemic vasculitis	6		4,5			1,5
Topic 17. Rheumatoid arthritis	7	1	4,5			1,5
Topic 18. Osteoarthritis. Gout	6		4,5			1,5
Topic 19. Spondylarthritis (Axial spondylarthritis. Reactive arthritis)	7		4,5		1	1,5
Together according to the content module 2	39	1	27		1	10
Content module 3. Nephrology						
Topic 20. Glomerulonephritis. Renal amyloidosis	6,5		4,5			2
Topic 21. Pyelonephritis. Tubulointerstitial nephritis	6		4,5			1,5
Topic 22. Acute kidney damage.	6		4,5			1,5
Topic 23. Chronic kidney disease	8,5	1	5		1	1,5
Together according to the content module 3	27	1	18,5		1	6,5
Total number of hours for module 2	150	6	104		3	37
					40	
Module 3 (6th year). Internal medicine, including phthisiology, endocrinology, emergency conditions in neurology, medical practice training (professional education) internal diseases						
Content module 1. Management of patients with major symptoms and syndromes in the cardiology clinic						
Topic 1. Management of a patient with hypertension	6		5,5			0,5
Topic 2. Management of a patient with chronic (recurring) chest pain	6		5,5			0,5
Topic 3. Management of a patient with acute chest pain	6		5,5			0,5
Topic 4. Management of a patient with cardiac arrhythmias	6		5,5			0,5
Topic 5. Management of a patient with cardiac conduction disorders	6		5,5			0,5

Topic 6. Management of a patient with dyspnea and edema	6		5,5			0,5
Topic 7. Management of a patient with pulmonary hypertension	6		5,5			0,5
Topic 8. Management of a patient with a heart murmur	6		5,5			0,5
Topic 9. Management of a patient with chronic heart failure	6		5,5			1
Together according to the content module 1	54,5		49,5			5
Content module 2. Management of patients with major symptoms and syndromes in the rheumatology clinic						
Topic 10. Management of a patient with the pain in the back and limbs	6		5,5			0,5
Topic 11. Management of a patient with articular syndrome	6		5,5			0,5
Topic 12. Management of a patient with purpura	6		5,5			0,5
Topic 13. Management of a patient with fever	6		5,5			0,5
Topic 14. Management of a patient with weight loss	6		5,5			0,5
Together according to the content module 2	30		27,5			2,5
Content module 3. Management of patients with major symptoms and syndromes in the gastroenterology clinic						
Topic 15. Management of a patient with dysphagia and heartburn	6		5,5			0,5
Topic 16. Management of a patient with dyspepsia	6		5,5			0,5
Topic 17. Management of a patient with abdominal pain	6		5,5			0,5
Topic 18. Management of a patient with diarrhea and constipation	6		5,5			0,5
Topic 19. Management of a patient with jaundice	6		5,5			0,5
Topic 20. Management of a patient with hepatomegaly and hepatolienal syndrome	6		5,5			0,5
Topic 21. Management of a patient with portal hypertension and ascites	6		5,5			0,5
Together according to the content module 3	42		38,5			3,5

Content module 4. Management of patients with major symptoms and syndromes in the pulmonology clinic						
Topic 22. Management of a patient with pulmonary infiltrate	6		5,5			0,5
Topic 23. Management of a patient with chronic cough	6		5,5			0,5
Topic 24. Management of a patient with broncho-obstructive syndrome	6		5,5			0,5
Topic 25. Management of a patient with cyanosis	6		5,5			0,5
Topic 26. Management of a patient with hemoptysis	6		5,5			0,5
Topic 27. Management of a patient with pleural effusion	6		5,5			0,5
Together according to the content module 4	36		33			3
Content module 5. Management of patients with major symptoms and syndromes in the hematology clinic						
Topic 28. Management of a patient with anemia	7		6			1
Topic 29. Management of a patient with leukocytosis and lymphadenopathy	6,5		6			0,5
Topic 30. Management of a patient with bleeding	7,5		6		1	0,5
Together according to the content module 5	21		18		1	2
Content module 6: Management of patients with basic symptoms and syndromes in the nephrological clinic						
Topic 31. Management of a patient with urinary syndrome	6		5,5			0,5
Topic 32. Management of a patient with nephrotic syndrome	6		5,5			0,5
Topic 33. Management of a patient with chronic kidney disease	6		5,5			0,5
Together according to the content module 6	18		16,5			1,5
Content module 7. Emergency conditions in the clinic of internal medicine						
Topic 34. Tactics in patients with cardiac and respiratory arrest	6		5,5			0,5
Topic 35. Management of a patient with hypertensive crisis	6		5,5			0,5
Topic 36. Management of a patient with acute coronary syndrome	6		5,5			0,5

Topic 37. Management of a patient with pulmonary embolism	6		5,5			0,5
Topic 38. Management of a patient with acute heart failure	6		5,5			0,5
Topic 39. Management of a patient with shock	6		5,5			0,5
Topic 40. Management of a patient with paroxysmal cardiac arrhythmias and heart conduction disorders	6		5,5			0,5
Topic 41. Management of a patient with acute respiratory failure	6		5,5			0,5
Topic 42. Management of a patient with the melena and hematemesis	6		5,5			0,5
Topic 43. Management of a patient with an acute hepatic failure	6		5,5			0,5
Topic 44. Management of a patient with oliguria	6		5,5			0,5
Topic 45. Management of a patient with a coma	6		5,5			0,5
Topic 46. Management of a patient with syncope	6		5,5			0,5
Together according to the content module 7	78		71,5			6,5
Content module 8. Endocrinology						
Topic 47. Management of patients with diabetes mellitus	10		5			5
Topic 48. Management of patients with underlying thyroid disease	10		4			6
Topic 49. Management of a patient with ketoacidotic and hypoglycemic emergencies, thyrotoxic and addisonian crises	10		5			5
Together according to the content module 8	30		14			16
Content module 9. Phthisiology						
Topic 50. Management of tuberculosis patients	10		5			5
Topic 51. Management of patients with chemoresistant tuberculosis	10		5			5
Topic 52. Management of patients with tuberculosis in combination with HIV infection	10		5			5
Together according to the content module 9	30		15			15

Content module 10. Emergency conditions in neurology						
Topic 1. Management of a patient with an acute cerebrovascular disorder	7,5		5			2,5
Topic 2. Management of a patient with epileptic and non-epileptic paroxysmal states	7,5		5			2,5
Topic 3. Management of a patient with infectious and infectious-allergic diseases of central and peripheral nervous system	7,5		5			2,5
Topic 4. Management of a patient with acute pain syndromes in the case of damage to the central and peripheral nervous system	4					4
Topic 5. Management of a patient with neurological manifestations of HIV-infection.	3,5					3,5
Together according to the content module 10	30		15			15
Content module 11. Medical practice training (professional education) internal diseases						
Topic 58. Principles of organization of medical care in Ukraine	8		4			4
Topic 59. Management of a patient with diseases of the cardiovascular system	10		4			6
Topic 60. Management of a patient with diseases of the musculoskeletal system and connective tissue	10		4			6
Topic 61. Management of a patient with diseases of the digestive system	10		4			6
Topic 62. Management of a patient with diseases of the respiratory organs	10		4			6
Topic 63. Management of a patient with diseases of the blood and hematopoietic organs	10		4			6
Topic 64. Management of a patient with diseases of the genitourinary system	10		4			6
Topic 65. Differential approach to providing emergency medical care in emergency situations with diseases of the cardiovascular system	10		4			6

Topic 66. Differentiated approach to providing emergency medical care in emergency situations with diseases of the digestive organs	10		4			6
Topic 67. Differential approach to providing emergency medical care in emergency situations for diseases of the respiratory organs and genitourinary system	11		4		1	6
Writing of a medical history	2					2
Training for the final control	4					4
Together according to the content module 11	105		40			65
Final control	5,5		5,5			
Total number of hours for module 3	480		344		2	134
						136
Total number of hours for discipline	930	25	625		9	271
						280

5. Topics of lectures

№	Name of the topic	Number of hours
Module 1 (4th year). Internal medicine (gastroenterology, hematology, pulmonology), including endocrinology, phthisiology, medical practice training (professional education) internal diseases		
1.	Gastroesophageal reflux disease	1
2.	Chronic gastritis	1
3.	Peptic ulcer of the stomach and duodenum	1
4.	Inflammatory bowel diseases	1
5.	Chronic cholecystitis, gallstone disease	1
6.	Chronic hepatitis	1
7.	Cirrhosis	1
8.	Chronic pancreatitis	1
9.	Anemia	1
10.	Acute leukemias	1
11.	Principles of evidence-based medicine	1

12.	Chronic obstructive pulmonary disease	1
13.	Bronchial asthma	1
14.	Pneumonia	1
15.	Diagnosis and treatment of diseases of internal organs in the elderly	1
16.	Diabetes mellitus	1
17.	Thyroid gland diseases	1
18.	General issues of phthisiology. Detection and diagnosis of tuberculosis	1
19.	General principles and methods of treatment of tuberculosis patients. Priority to outpatient treatment	1
Total number of hours for module 1		19
Module 2 (5th course). Internal medicine (cardiology, rheumatology, nephrology)		
1.	Essential hypertension	1
2.	Chronic coronary syndromes	1
3.	Acute coronary syndrome (unstable angina, acute myocardial infarction)	1
4.	Chronic heart failure	1
5.	Rheumatoid arthritis	1
6.	Chronic kidney disease	1
Total number of hours for module 2		6
Total number of hours for discipline		25

6. Topics of seminars

№	Name of the topic	Number of hours
1.	-	-
2.		

7. Topics of practical lessons

№	Name of the topic	Number of hours
Module 1 (4th year). Internal medicine (gastroenterology, hematology, pulmonology), including endocrinology, phthisiology, medical practice training (professional education) internal diseases		

1.	Obesity and its consequences	5,5
2.	Gastroesophageal reflux disease	5,5
3.	Dyspepsia. Chronic gastritis	5,5
4.	Peptic ulcer of the stomach and duodenum	5,5
5.	Celiac disease and other enteropathies	5,5
6.	Inflammatory bowel diseases. Irritable bowel syndrome	5,5
7.	Gallstone disease, chronic cholecystitis and functional disorders of the biliary tract	5,5
8.	Chronic hepatitis	5,5
9.	Cirrhosis	5,5
10.	Chronic pancreatitis	5,5
11.	Anemia	5,5
12.	Hemophilia and thrombocytopenic purpura	5,5
13.	Acute leukemias	5,5
14.	Chronic leukemias	5,5
15.	Chronic obstructive pulmonary disease	5,5
16.	Bronchial asthma	5,5
17.	Pneumonia	5,5
18.	Pleurisy	5,5
19.	Infectious and destructive lung diseases	5,5
20.	Bronchiectasis	5,5
21.	Respiratory failure	5
22.	Diabetes mellitus, classification, etiology, pathogenesis, clinical presentation, diagnosis. Modern treatment of diabetes mellitus type 1	4
23.	Diabetes mellitus type 2, modern methods of therapy. Acute and chronic complications of diabetes mellitus	4
24.	Thyroid and parathyroid glands disorders	4
25.	Diseases of the hypothalamo-hypophysis system and adrenal glands. Obesity	4
26.	General issues of phthisiology. Detection and diagnosis of tuberculosis	5

27.	Clinical variants of the course of tuberculosis	5
28.	General principles and methods of treatment of tuberculosis patients	5
29.	Infection control and prevention of tuberculosis	5,5
30.	Tuberculosis in combination with HIV infection and other diseases. Complications of tuberculosis	5,5
31.	Principles of organization of planned and emergency therapeutic care	4
32.	Management of a patient with the most common diseases of the digestive organs	4
33.	Management of a patient with the most common diseases of the blood and hematopoietic organs	4
34.	Management of a patient with the most common diseases of the respiratory organs	4
35.	Diagnosis and provision of emergency medical care in emergency situations with diseases of the respiratory and digestive organs	4
Total number of hours for module 1		177

Module 2 (5th year). Internal medicine (cardiology, rheumatology, nephrology)

1.	Atherosclerosis	4,5
2.	Essential hypertension	4,5
3.	Secondary hypertension	4,5
4.	Chronic coronary syndromes	4,5
5.	Acute coronary syndrome (unstable angina, acute myocardial infarction)	4,5
6.	Cardiac rhythm disorders	4,5
7.	Cardiac conduction disorders	4,5
8.	Pulmonary heart. Pulmonary embolism	4,5
9.	Congenital heart disease in adults	4,5
10.	Infective endocarditis. Acquired heart diseases	4,5
11.	Myocarditis and cardiomyopathy	4,5
12.	Pericarditis	4,5
13.	Acute heart failure. Chronic heart failure	4,5
14.	Acute rheumatic fever. Systemic connective tissue diseases (systemic lupus erythematosus)	4,5

15.	Systemic connective tissue diseases (scleroderma, poly-/dermatomyositis)	4,5
16.	Systemic vasculitis	4,5
17.	Rheumatoid arthritis	4,5
18.	Osteoarthritis. Gout	4,5
19.	Spondylarthritis (Axial spondylarthritis. Reactive arthritis	4,5
20.	Glomerulonephritis. Renal amyloidosis	4,5
21.	Pyelonephritis. Tubulointerstitial nephritis	4,5
22.	Acute kidney injury	4,5
23.	Chronic kidney disease	5
Total number of hours for module 2		104
Module 3 (6th year). Internal medicine, including phthisiology, endocrinology, emergency conditions in neurology, medical practice training (professional education) internal diseases		
1.	Management of a patient with arterial hypertension	5,5
2.	Management of a patient with chronic (recurring) chest pain	5,5
3.	Management of a patient with acute chest pain	5,5
4.	Management of a patient with cardiac arrhythmias	5,5
5.	Management of patients with cardiac conduction disorders	5,5
6.	Management of a patient with dyspnea and edema	5,5
7.	Management of a patient with pulmonary hypertension	5,5
8.	Management of a patient with a heart murmur	5,5
9.	Management of a patient with chronic heart failure	5,5
10.	Management of a patient with the pain in the back and limbs	5,5
11.	Management of a patient with articular syndrome	5,5
12.	Management of a patient with purpura	5,5
13.	Management of a patient with fever	5,5
14.	Management of a patient with weight loss	5,5
15.	Management of a patient with dysphagia and heartburn	5,5
16.	Management of a patient with dyspepsia	5,5
17.	Management of a patient with abdominal pain	5,5
18.	Management of a patient with diarrhea and constipation	5,5
19.	Management of a patient with jaundice	5,5
20.	Management of a patient with hepatomegaly and hepatolienal syndrome	5,5
21.	Management of a patient with portal hypertension and ascites	5,5
22.	Management of a patient with pulmonary infiltrate	5,5
23.	Management of a patient with chronic cough	5,5
24.	Management of a patient with bronchial-obstructive syndrome	5,5

25.	Management of a patient with cyanosis	5,5
26.	Management of a patient with hemoptysis	5,5
27.	Management of a patient with pleural effusion	5,5
28.	Management of a patient with anemia	6
29.	Management of a patient with leukocytosis and lymphadenopathy	6
30.	Management of a patient with bleeding	6
31.	Management of a patient with urinary syndrome	5,5
32.	Management of a patient with nephrotic syndrome	5,5
33.	Management of a patient with chronic kidney disease	5,5
34.	Tactics in patients with cardiac and respiratory arrest	5,5
35.	Management of a patient with hypertensive crisis	5,5
36.	Management of a patient with acute coronary syndrome	5,5
37.	Management of a patient with pulmonary embolism	5,5
38.	Management of a patient with acute heart failure	5,5
39.	Management of a patient with shock	5,5
40.	Management of a patient with paroxysmal cardiac arrhythmias and heart conduction disorders	5,5
41.	Management of a patient with acute respiratory failure	5,5
42.	Management of a patient with the melena and hematemesis	5,5
43.	Management of a patient with an acute hepatic failure	5,5
44.	Management of a patient with oliguria	5,5
45.	Management of a patient with a coma	5,5
46.	Management of a patient with syncope	5,5
47.	Management of patients with diabetes mellitus	5
48.	Management of patients with underlying thyroid disease	4
49.	Management of a patient with ketoacidotic and hypoglycemic emergencies, thyrotoxic and addisonian crises	5
50.	Management of tuberculosis patients	5
51.	Management of patients with chemoresistant tuberculosis	5
52.	Management of patients with tuberculosis in combination with HIV infection	5
53.	Management of a patient with an acute cerebrovascular disorder.	5
54.	Management of a patient with epileptic and non-epileptic paroxysmal states	5
55.	Management of a patient with infectious and infectious-allergic diseases of central and peripheral nervous system	5
56.	Principles of organization of medical care in Ukraine	4
57.	Management of a patient with diseases of the cardiovascular system	4

58.	Management of a patient with diseases of the musculoskeletal system and connective tissue	4
59.	Management of a patient with diseases of the digestive system	4
60.	Management of a patient with diseases of the respiratory organs	4
61.	Management of a patient with diseases of the blood and hematopoietic organs	4
62.	Management of a patient with diseases of the genitourinary system	4
63.	Differential approach to providing emergency medical care in emergency situations with diseases of the cardiovascular system	4
64.	Differentiated approach to providing emergency medical care in emergency situations with diseases of the digestive organs	4
65.	Differential approach to providing emergency medical care in emergency situations for diseases of the respiratory organs and genitourinary system	4
66.	Final control	5,5
Total number of hours for module 3		344
Total number of hours for discipline		625

8. Topics of laboratory lessons

№	Name of the topic	Number of hours
1.	-	-
2.		

9. Self-study work

№	Name of the topic	Number of hours
Module 1 (4th year). Internal medicine (gastroenterology, hematology, pulmonology), including endocrinology, phthisiology, medical practice training (professional education) internal diseases		
1.	- Preparation for a practical lesson on topic №1 “Obesity and its consequences” - Mastering the method of calculating the body mass index.	0,5

2.	- Preparation for a practical lesson on topic №2 “Gastroesophageal reflux disease” - Mastering the skills of interpreting 24-hour esophageal pH monitoring data by topic - Mastering the skills of interpreting the endoscopic picture of the esophagus by topic.	0,5
3.	- Preparation for a practical lesson on topic №3 “Dyspepsia. Chronic gastritis” - Mastering the skills of interpreting the results of breath tests with a stable isotope (^{13}C-urea) - Mastering the skills of interpretation of acid formation research (intragastric topographic express pH-metry) - Mastering the skills of interpreting the results of esophagogastroduodenoscopy with biopsy by topic.	0,5
4.	- Preparation for a practical lesson on topic №4 “Peptic ulcer of the stomach and duodenum” - Mastering the skills of interpreting the endoscopic picture of the stomach and duodenum by topic.	0,5
5.	- Preparation for a practical lesson on topic №5 “Celiac disease and other enteropathies” - Mastering the skills of interpretation of the results of immunoenzymatic determination of antibodies to tissue transglutaminase and to gliadin peptides in celiac disease (ELISA method), hydrogen tests.	0,5
6.	- Preparation for a practical lesson on topic №6 “Inflammatory bowel diseases. Irritable bowel syndrome” - Mastering the skills of interpreting the endoscopic picture of the colon by topic - Mastering the skills of interpreting the results of fecal calprotectin.	0,5
7.	- Preparation for a practical lesson on topic №7 “Gallstone disease, chronic cholecystitis and functional disorders of the biliary tract” - Mastering the skills of interpreting ultrasound data of the liver, bile ducts and gallbladder by topic.	0,5
8.	- Preparation for a practical lesson on topic №8 “Chronic hepatitis” - Mastering the skills of interpreting general and biochemical blood analysis data (total protein, protein fractions, bilirubin and its fractions, ALT, AST, alkaline phosphatase activity) - Mastering the skills of evaluating the results of serological blood tests (serum markers of viral and autoimmune hepatitis; polymerase chain reaction, qualitative and quantitative analysis; virus genotyping).	0,5

9.	- Preparation for a practical lesson on topic №9 “Cirrhosis of the liver” - Mastering the skills of interpreting the results of biochemical analysis (ALT, AST, GHTP, LF, bilirubin and its fractions, proteins and protein fractions, glucose, coagulogram) - Mastering the skills of interpretation of ultrasound data of the liver, gall bladder, pancreas, spleen and vessels of the portal system (dopplerography) by topic.	1
10.	- Preparation for a practical lesson on topic №10 “Chronic pancreatitis” - Mastering the skills of interpreting the data of general blood analysis, urine (α-amylase), biochemical blood analysis (elastase 1, α-amylase), stool analysis for fecal elastase 1 - Mastering the skills of evaluating the results of carbohydrate metabolism research (glucose, insulin, C-peptide, pancreatic polypeptide, blood glucagon; test with sugar load, galactose, D-xylose).	1
11.	Preparation and writing of medical history	2
12.	- Preparation for a practical lesson on topic №11 “Anemia” - Mastering the skills of interpreting a general blood test - Mastering the skills of interpreting the results of iron metabolism research (serum iron, serum total iron-binding capacity, transferrin saturation with iron, ferritin level) - Mastering the skills of assessing bone marrow punctate data.	1
13.	- Preparation for a practical lesson on topic №12 “Hemophilia and thrombocytopenic purpura” - Mastering the skills of interpreting a general blood test - Mastering the method of blood group determination - Mastering the skills of coagulogram interpretation in hemophilia.	1
14.	- Preparation for a practical lesson on topic №13 “Acute leukemia” - Mastering the skills of interpretation of general blood analysis and myelogram - Mastering the method of transfusion of blood components and blood substitutes - Assessment of cytochemical research data.	1
15.	- Preparation for a practical lesson on topic №14 “Chronic leukemias” - Mastering the skills of interpretation of general blood analysis and myelogram - Mastering the skills of interpreting the data of x-ray examination of bones by topic.	1

16.	- Preparation for a practical lesson on topic №16 “Chronic obstructive pulmonary disease” - Mastering the skills of interpretation of sputum analysis (microscopic, bacteriological, bacterioscopic examination), determination of sensitivity to antibiotics - Mastering the skills of interpreting indicators of the function of external breathing by topic.	1
17.	- Preparation for a practical lesson on topic №17 “Bronchial asthma” - Mastering the skills of interpretation of sputum analysis (microscopic, bacteriological, bacterioscopic examination) - Mastery of the skills of interpretation of external breathing function data by topic.	0,5
18.	- Preparation for a practical lesson on topic №18 “Pneumonia” - Mastering the skills of interpretation of sputum analysis (microscopic, bacteriological, bacterioscopic examination), determination of sensitivity to antibiotics - Mastering the skills of interpreting the data of sonography and radiography of the chest cavity in two projections by topic.	1
19.	- Preparation for a practical lesson on topic №19 “Pleurisy” - Mastering the skills of interpreting the data of sonography and radiography of the chest cavity by topic - Mastering the skills of interpretation of pleural fluid analysis (microscopic, bacteriological and bacterioscopic examination).	0,5
20.	- Preparation for a practical lesson on topic №20 “Infectious and destructive lung diseases” - Mastery of the skills of interpretation of chest x-ray data by topic - Mastering the skills of interpreting general blood analysis, sputum analysis (bacteriological, microscopic, determination of sensitivity to antibiotics).	0,5
21.	- Preparation for a practical lesson on topic №21 “Bronchiectasis” - Mastery of the skills of interpretation of chest x-ray data by topic - Mastering the skills of interpreting general blood analysis, sputum analysis (bacteriological, microscopic, determination of sensitivity to antibiotics).	0,5
22.	- Preparation for a practical lesson on topic №22 “Respiratory failure” - Mastering the skills of interpreting the gas composition of arterial and venous blood.	1

23.	- Preparation for a practical lesson on the topic №24 “Diabetes mellitus, classification, etiology, pathogenesis, clinical presentation, diagnosis. Modern treatment of Diabetes mellitus type 1” - Mastering the skills of interpretation of laboratory examination methods (glucose-tolerance test, glycemic profile, C-peptide, HbA1c, lipids) by topic - Mastering the skills of interpretation of glycemic profile, HbA1c, prescription of insulin drugs, of writing the prescriptions for basic insulin preparations by topic.	3
24.	- Preparation for a practical lesson on the topic №25 “Diabetes mellitus type 2, modern methods of treatment. Acute and chronic complications of Diabetes mellitus” - Mastering the skills of interpretation of glycemic profile, glycated hemoglobin level, of writing the prescriptions on main antidiabetic drugs by topic - Mastering the skills of treatment the patient with ketoacidosis, ketoacidotic and hypoglycemic comas by topic.	3
25.	- Preparation for a practical lesson on the topic №26 “Thyroid and parathyroid glands disorders” - Mastering the skills of interpretation of thyroid and parathyroid hormone tests (PTH, TSH, fT₃, fT₄, ATPO, calcitonin, anti-rTSH, thyroglobulin) by topic.	3
26.	- Preparation for a practical lesson on the topic №27 "Diseases of the hypothalamo-hypophysis system and adrenal glands. Obesity” - Mastering the skills of interpretation of adrenal glands hormone test (ACTH, cortisol, aldosteron, metanephrines in urine) by topic - Mastering the skills of interpretation of hormone test (GH, ILF-1, prolactin, gonadotropins, vasopressin) and Zimnitsky urine test by topic - Mastering the skills of determining the degree of obesity by BMI by topic.	3
27.	- Preparation for a practical lesson on topic №28 “General issues of phthiology. Detection and diagnosis of tuberculosis” - Mastering the skills of identifying groups at risk of tuberculosis. - Mastering the skills of conducting a screening survey regarding symptoms that may indicate tuberculosis - Mastering the skills of making a route for patients with symptoms that may indicate tuberculosis at the stage of primary medical care - Mastering the skills of interpreting the gamma interferon release test, the results of sputum examination by the smear method, cultural research and molecular genetic tests, the LF-LAM test.	7

28.	- Preparation for a practical lesson on topic №29 “Clinical variants of the course of tuberculosis” - Mastering the skills of interpreting the gamma interferon release test, the results of sputum examination by the smear method, cultural research and molecular genetic tests, the LF-LAM test. - Mastering the skills of interpretation of X-ray data of the chest cavity in two projections by topic.	7
29.	- Preparation for a practical lesson on topic №30 “General principles and methods of treatment of patients with tuberculosis” - Compilation of an algorithm for the treatment of tuberculosis at the primary level of medical care. - Mastering the skills of identifying and overcoming the side effects of chemotherapy for tuberculosis. - Mastering the skills of forming adherence to treatment in patients.	6
30.	- Preparation for a practical lesson on topic №31 “Infection control and prevention of tuberculosis” - Mastering the skills of correct use of personal protective equipment for respiratory organs. - Mastering the method of tuberculin skin test. - Mastering the skills of tuberculin skin test interpretation.	6
31.	- Preparation for a practical lesson on topic №32 “Tuberculosis in combination with HIV infection and other diseases. Complications of tuberculosis” - Development of an algorithm for the diagnosis of tuberculosis in an HIV-positive patient at an outpatient appointment. - Mastering the skills of interpreting the gamma interferon release test, the results of sputum examination by the smear method, cultural research and molecular genetic tests, the LF-LAM test. - Mastering the skills of interpretation of radiographic data of the chest cavity in two projections by topic.	6
32.	- Preparation for a practical lesson on topic №33 “Principles of organizing the provision of planned and emergency therapeutic care” - Mastery of medical documentation management skills. - Mastering the method of measuring blood pressure.	7
33.	- Preparation for a practical lesson on topic №34 “Management of a patient with the most common diseases of the digestive organs” - Mastering the technique of ECG registration.	8

34.	- Preparation for a practical lesson on topic №35 “Management of a patient with the most common diseases of the blood and hematopoietic organs” - Improvement of blood group determination methods.	8
35.	- Preparation for a practical lesson on topic №36 “Management of a patient with the most common diseases of the respiratory organs” - Mastering the technique of performing subcutaneous, intramuscular, intravenous injections.	8
36.	- Preparation for a practical lesson on topic №37 “Diagnosis and provision of emergency medical care in emergency situations with diseases of the respiratory and digestive organs”.	8
37.	Individual tasks	4
Total number of hours for module 1		104
Module 2 (5th year). Internal medicine (cardiology, rheumatology, nephrology)		
1.	- Preparation for a practical lesson on the topic №1 “Atherosclerosis” - Skills to analyze blood lipid spectrum.	1
2.	- Preparation for a practical lesson on the topic №2 “Essential hypertension” Mastering the technique of blood pressure measurement - Mastering the technique of ECG recording and skills of ECG and echocardiography interpretation by topic.	1,5
3.	- Preparation for a practical lesson on the topic №3 “Secondary arterial hypertension” - Mastering the skills of data interpretation echocardiography by topic. - Mastering the skills of ECG interpretation by topic.	1,5
4.	- Preparation for a practical lesson on the topic №4 “Chronic coronary syndromes” - Mastering the skills of ECG interpretation by topic.	1,5
5.	- Preparation for a practical lesson on the topic №5 “Acute coronary syndrome (unstable angina, acute myocardial infarction)” - Mastering the skills of ECG interpretation by topic. - Skills to analyze blood biochemical parameters (markers of myocardial necrosis).	1,5
6.	- Preparation for a practical lesson on the topic №6 “Cardiac rhythm disorders” - Mastering the skills of ECG interpretation by topic.	1,5
7.	- Preparation for a practical lesson on the topic №7 “Cardiac conduction disorders” - Mastering the skills of ECG interpretation by topic.	1,5

8.	- Preparation for a practical lesson on the topic №8 “Pulmonary heart. Pulmonary embolism” - Acquiring skills echocardiography interpretation of data by topic - Skills to analyze coagulation, D-dimer.	1,5
9.	- Preparation for a practical lesson on the topic №9 “Congenital heart disease in adults” - Mastering the skills of data interpretation Doppler echocardiography by topic. - Mastering the interpretation of these X-ray of the chest by topic. - Mastering the skills of ECG interpretation by topic.	1,5
10.	- Preparation for a practical lesson on the topic №10 “Infective endocarditis. Acquired heart diseases” - Mastering the skills of interpreting Doppler echocardiographic data by topic - Mastering the interpretation of the data of X-ray examination of the chest by topic - Mastering the skills of ECG interpretation by topic - Mastering the skills of interpretation of microbiological blood tests - Mastering the skills of interpretation of biochemical blood test data (acute phase parameters, total protein and protein fractions, procalcitonin).	1,5
11.	- Preparation for a practical lesson on the topic №11 “Myocarditis and cardiomyopathy” - Acquiring skills echocardiography interpretation of data by topic - Mastering the skills of interpretation of these biochemical blood tests (acute phase inflammatory markers, total protein and protein fractions).	1,5
12.	- Preparation for a practical lesson on the topic №12 “Pericarditis” - Mastering the skills of interpretation of these biochemical blood tests acute phase inflammatory markers, total protein and protein fractions).	1
13.	- Preparation for a practical lesson on the topic №13 “Acute heart failure. Chronic heart failure” - Acquiring skills echocardiography interpretation of data by topic - Acquiring skills echocardiography interpretation of data by topic - Acquiring skills biochemical blood tests analysis (natriuretic peptide).	1,5
14.	Preparation and writing of medical history	2

15.	- Preparation for a practical lesson on the topic №14 “Acute rheumatic fever. Systemic connective tissue diseases (systemic lupus erythematosus)” - Mastering the skills of interpretation of biochemical blood tests (acute phase inflammatory markers, total protein and protein fractions) - Mastering the skills of interpretation of these immunological blood tests (ANA, dsDNA, Sm-antigen).	2
16.	- Preparation for a practical lesson on the topic №15 “Systemic connective tissue diseases (systemic scleroderma, poly-/dermatomyositis)” - Mastering the skills of interpretation of biochemical blood tests (acute phase inflammatory markers, total protein and protein fractions, CPK) - Mastering the skills of interpretation of these immunological blood tests (SCL-70, Jo-1).	2
17.	- Preparation for a practical lesson on the topic №16 “Systemic vasculitis» - Mastering the skills of interpretation of laboratory blood tests (acute phase inflammation markers, total protein and protein fractions, creatinine, pANCA, cANCA, HbsAg).	1,5
18.	- Preparation for a practical lesson on the topic №17 “Rheumatoid arthritis” - Mastering the skills of interpretation of these immunological blood tests (RF, anti-CCP) - Mastering the skills of interpretation of X-ray of joints by topic.	1,5
19.	- Preparation for a practical lesson on the topic №18 “Osteoarthritis. Gout” - Mastering the skills of interpretation of X-ray examination of joints by topic. - Mastering the skills of interpretation of serological blood tests.	1,5
20.	- Preparation for a practical lesson on the topic №19 “Spondylarthritis (Axial spondylarthritis. Reactive arthritis)” - Mastering the skills of interpretation of serological blood tests - Mastering the skills of interpretation of X-ray of joints, sacroiliac joints by topic.	1,5
21.	- Preparation for a practical lesson on the topic №20 “Glomerulonephritis. Kidney amyloidosis” - Mastering the skills of interpretation of these laboratory studies (urin alysis, daily proteinuria, blood count, total protein and protein fractions, creatinine, glomerular filtration rate, cholesterol, blood electrolytes). - Mastering the skills of interpretation of the renal ultrasound by topic.	2

22.	- Preparation for a practical lesson on the topic №21 “Pyelonephritis. Tubulointerstitial nephritis” - Mastering the skills of interpretation of these laboratory studies (urin alysis, urine on Nechiporenko and Zimnitskiy, microbiological urinalysis, creatinine, glomerular filtration rate, uric acid).	1,5
23.	- Preparation for a practical lesson on the topic №22 “Acute kidney damage” - Mastering the skills of interpretation of these laboratory studies (urin alysis, complete blood count, total protein and protein fractions, creatinine, blood electrolytes).	1,5
24,	- Preparation for a practical lesson on the topic №23 “Chronic kidney disease” - Mastering the skills of interpretation of these laboratory studies (urin alysis, complete blood count, total protein and protein fractions, creatinine, glomerular filtration rate, blood electrolytes).	1,5
25.	Individual tasks	3
Total number of hours for module 2		40
Module 3 (6th year). Internal medicine, including phthisiology, endocrinology, emergency conditions in neurology, medical practice training (professional education) internal diseases		
1.	- Preparation for a practical lesson on the topic №1 “Management of a patient with arterial hypertension” - Improvement of methods of registration and interpretation of ECG, blood pressure measurement and interpretation of the data by topic. - Improvement of the interpretation of these laboratory studies (creatinine in the blood, glomerular filtration rate, blood electrolytes).	0,5
2.	- Preparation for a practical lesson on the topic №2 “Management of chronic (recurring) pain in the chest” - Improvement of interpreting ECG results and test with dosed physical load by topic. - Improvement of interpretation of laboratory diagnostic testing (blood lipid profile).	0,5
3.	- Preparation for a practical lesson on the topic №3 “Management of patient with acute pain in the chest” - Improvement of ECG interpretation by topic. - Improvement of the interpretation X-ray data of the chest by topic. - Improvement of the interpretation of results of laboratory examination methods (biochemical markers of myocardial necrosis, coagulation, D-dimer).	0,5

4.	- Preparation for a practical lesson on the topic №4 “Management of patients with cardiac arrhythmia” - Improvement of the interpretation of ECG in the case of arrhythmia by topic. - Improvement of the interpretation of results of laboratory examination methods (coagulogram).	0,5
5.	- Preparation for a practical lesson on the topic №5 “Management of patient with cardiac conduction disorders” - Improvement of the interpretation of ECG in patients with cardiac conduction disorders by topic.	0,5
6.	- Preparation for a practical lesson on the topic №6 “Management of patient with dyspnea and edema syndrome” - Improvement of the data of dopplerography by topic. - Improvement of the interpretation of results of laboratory examination methods (total bilirubin and its fractions, total protein and its fractions, transaminases, blood creatinine, glomerular filtration rate).	0,5
7.	- Preparation for a practical lesson on the topic №7 “Management of patient with pulmonary hypertension” - Improvement of the dopplerography data interpretation by topic.	0,5
8.	- Preparation for a practical lesson on the topic №8 “Management of patient with murmur in heart” - Improvement of the dopplerography data interpretation by topic. - Improvement of the X-ray of the chest data interpreting by topic.	0,5
9.	- Preparation for a practical lesson on the topic №9 “Management of patients with chronic heart failure” - Improvement of the data of dopplerography by topic. - Improvement of the interpretation of results of laboratory examination methods (analysis of ascetic fluid, coagulogram, blood creatinine, glomerular filtration rate, blood electrolytes, the concentration of natriuretic peptide in the blood).	0,5
10.	- Preparation for a practical lesson on the topic №10 “Management of patient with pain in the back and limbs” - Improvement of the interpretation X-ray data of the spinal column and sacroiliac joints by topic. - Improvement of the interpretation of laboratory studies (data of immune status, HLA-B27, KK).	0,5
11.	- Preparation for a practical lesson on the topic №11 “Management of patient with articular syndrome” - Improvement of the interpretation X-ray data by topic. - Improvement of the interpretation of laboratory studies (analysis of synovial fluid, CBC, uric acid, RF, anti-CCP, ANA, ds-DNA).	0,5

12.	- Preparation for a practical lesson on the topic №12 “Management of patient with purpura” - Improvement of the interpretation of laboratory studies (CBC, coagulogram, PANCA, CANCA).	0,5
13.	- Preparation for a practical lesson on the topic №13 “Management of patient with fever” - Improvement of the interpretation X-ray of the chest, ultrasound of organs of abdominal cavity by topic. - Improvement of the interpretation of laboratory examination methods data (CBC, urine analysis, bacteriological sowing of blood, ANA, ds-DNA).	0,5
14.	- Preparation for a practical lesson on the topic №14 “Management of patient with weight loss”.	0,5
15.	- Preparation for a practical lesson on the topic №15 “Management of patients with dysphagia and heartburn” - Improving interpretation data of esophagogastroduodenoscopy by topic. - Improvement interpretation data of secretory function of the stomach (daily pH monitoring).	0,5
16.	- Preparation for a practical lesson on the topic №16 “Management of patients with dyspepsia” - Improvement interpretation data of secretory function of the stomach (topographic rapid pH meter).	0,5
17.	- Preparation for a practical lesson on the topic №17 “Management of patients with pain in the stomach” - Improving interpretation of the results of gastrointestinal endoscopy (esophagogastroduodenoscopy, colonoscopy) by topic. - Improving interpretation of the results of biochemical blood tests (blood total protein and its fractions, serum transaminase, total bilirubin and its fractions, alkaline phosphatase, alpha-amylase, GGTP).	0,5
18.	- Preparation for a practical lesson on the topic №18 “Management of patients with diarrhea and constipation” - Improving interpretation of the results of gastrointestinal endoscopy (colonoscopy) by topic. - Improving interpretation of the results of respiratory tests (from ¹³C-urea, triglycerides, ¹³C, ¹³C-starch, lactose and ¹³C-hydrogen test with glucose and lactulose) - Improving interpretation of the results of fecal elastase-1.	0,5
19.	- Preparation for a practical lesson on the topic №19 «Management of patients with jaundice” - Improving data interpretation of the ultrasound of the liver, gallbladder and bile ducts by topic.	0,5

20.	- Preparation for a practical lesson on the topic №20 “Management of patients with hepatomegaly and hepatolienal syndrome” - Improving the interpretation of the results of biochemical blood tests (total bilirubin and its fractions, albumin, serum transaminases, blood total protein and its fractions, alkaline phosphatase, alpha-amylase, GGTP) - Improving interpretation of the results of abdominal ultrasound by topic.	0,5
21.	Preparation for a practical lesson on the topic №21 “Management of a patient with portal hypertension and ascites” - Improving interpretation of endoscopic examination data of the digestive tract by topic.	0,5
22.	- Preparation for a practical lesson on the topic №22 “Management of patients with pulmonary infiltrate” - Improving the interpretation of X-ray of chest in two projections by topic. - Improving the interpretation of the laboratory studies (general and microbiological examination of sputum).	0,5
23.	- Preparation for a practical lesson on the topic №23 “Management of chronic cough” - Improving the interpretation of the X-ray of the chest cavity by topic. - Improvement interpretation of the spirometry, the results of provocative tests with bronchodilators by topic.	0,5
24.	- Preparation for a practical lesson on the topic №24 “Management of patients with broncho-obstructive syndrome” - Improvement interpretation of the spirometry, the results of provocative tests with bronchodilators by topic.	0,5
25.	- Preparation for a practical lesson on the topic №25 “Management of patients with cyanosis” - Improving the interpretation of the X-ray of the chest cavity by topic. - Improving echocardiography interpretation by topic. - Improving the interpretation of these laboratory studies (arterial and venous blood gases).	0,5
26.	- Preparation for a practical lesson on the topic №26 “Management of patients with hemoptysis” - Improving the interpretation of the X-ray of the chest cavity by topic. - Improving the interpretation of laboratory studies (coagulation and D-dimer).	0,5

27.	- Preparation for a practical lesson on the topic №27 “Management of patients with pleural effusion” - Improving the interpretation of the X-ray of the chest by topic. - Improving the interpretation of laboratory studies (biochemical, cytological, microbiological analysis of pleural fluid).	0,5
28.	- Preparation for a practical lesson on the topic №28 “Management of a patient with anemia” - Improving methods of determining blood type - Techniques review for transfusion of blood components and substitutes - Improving the interpretation of complete blood count, bone marrow punctate and bone marrow biopsy - Improving the interpretation of iron metabolism parameters in blood serum.	0,5
29.	- Preparation for a practical lesson on the topic №29 “Patient management with leukocytosis and lymphadenopathy” - Improving the interpretation of complete blood count, bone marrow punctate - Improving interpretation of cytology lymph node biopsy data	0,5
30.	- Preparation for a practical lesson on the topic №30 “Patient management with bleeding” - Improving the interpretation of complete blood count and coagulation.	0,5
31.	- Preparation for a practical lesson on the topic №31 “Urinary syndrome management” - Improvement of the radiology methods interpretation of the urinary system investigation by topic. - Improvement of results interpretation of laboratory research methods (urinalysis, urine test by Nechiporenko and Zimnitskiy, microbiological urinalysis, creatinine, glomerular filtration rate, urea, uric acid blood).	0,5
32.	- Preparation for a practical lesson on the topic №32 “Patient management with nephrotic syndrome” - Improvement of results interpretation of laboratory studies (complete blood count, urinalysis, daily proteinuria, cholesterol, total protein with protein fractions, creatinine, glomerular filtration rate).	0,5
33.	- Preparation for a practical lesson on the topic №33 “Chronic kidney disease management” - Improvement of results interpretation of laboratory studies (complete blood count, urinalysis, electrolytes, urea, creatinine, glomerular filtration rate).	0,5
34.	- Preparation for a practical lesson on the topic №34 “Tactics in case of circulation and respiratory arrest” - Improving algorithms of cardio-pulmonary resuscitation.	0,5

35.	- Preparation for a practical lesson on the topic №35 “Management of the patient with hypertensive crisis” - Improved methods of measurement of blood pressure and interpretation of the data.	0,5
36.	- Preparation for a practical lesson on the topic №36 “Management of the patient with acute coronary syndrome” - Improved methods of registration and interpretation of ECG by topic. - Improving the interpretation of laboratory methods examination (biochemical markers of myocardial necrosis).	0,5
37.	- Preparation for a practical lesson on the topic №37 “Management of the patient with pulmonary embolism” - Improving interpretation of ECHO-CG and chest X-ray by topic. - Improving the interpretation of laboratory methods of examination (coagulogram, indicators of gas balance in blood, acid-base indicators in blood).	0,5
38.	- Preparation for a practical lesson on the topic №38 “Management of the patient with acute heart failure” - Improving interpretation of ECHO-CG by topic.	0,5
39.	- Preparation for a practical lesson on the topic №39 “Management of the patient with shock” - Improving methods of registration and interpretation of ECG and ECHO-CG by topic.	0,5
40.	- Preparation for a practical lesson on the topic №40 “Management of the patient with paroxysmal cardiac arrhythmias and heart conduction disorders” - Improving methods of ECG interpretation by topic. - Improving interpretation of coagulogram.	0,5
41.	- Preparation for a practical lesson on the topic №41 “Management of the patient with acute respiratory failure” - Improving interpretation of chest X-ray by topic. - Improving the interpretation of laboratory methods of examination (indicators of gas balance in blood, acid-base indicators in blood).	0,5
42.	- Preparation for a practical lesson on the topic №42 “Management of the patient with the melena and hematemesis” - Improving interpretation of fibrogastroduodenoscopy, colonoscopy by topic. - Improving methods of blood type determination, blood and blood substitutes transfusion.	0,5

43.	- Preparation for a practical lesson on the topic №43 “Management of the patient with acute hepatic failure” -Improving interpretation of laboratory methods of examination (ALT, AST total bilirubin with fractions, urea, interpretation of coagulogram, arterial and venous blood gases, acid-base balance, urine toxicology, virus-screening of the serum).	0,5
44.	- Preparation for a practical lesson on the topic №44 “Management of the patient with oliguria” - Improving technique of bladder catheterization with soft catheter.	0,5
45.	- Preparation for a practical lesson on the topic №45 “Management of the patient with a coma” - Improving the interpretation of laboratory methods of examination (complete blood count, blood glucose, ALT, AST, blood creatinine, glomerular filtration rate, total bilirubin with factions, electrolytes, coagulogram, indicators of gas balance in blood, acid-base indicators in blood).	0,5
46.	- Preparation for a practical lesson on the topic №46 “Management of the patient with syncope” - Improving methods of ECG interpretation by topic - Improving methods of measurement of blood pressure and interpretation of the data.	0,5
47.	- Preparation for a practical lesson on the topic №47 “Management of patients with diabetes mellitus” - Improvement of the interpretation of the laboratory research methods (blood glucose, glycemic profile, glycated hemoglobin, ketone bodies in the blood and urine) by topic.	5
48.	- Preparation for a practical lesson on the topic №48 “Management of patients with underlying thyroid disease” - Improvement of the interpretation of the laboratory research methods (levels of TSH, fT3, fT4, ATPO, antibodies to TSH receptors, ioduria) by topic.	6
49.	- Preparation for a practical lesson on the topic №49 “Management of a patient with ketoacidotic and hypoglycemic emergencies, thyrotoxic and addisonian crises” - Improvement of the interpretation of the laboratory research methods (blood glucose, glycated hemoglobin, electrolytes, ketone bodies in the blood and urine, acid-base state of the blood, levels of TSH, fT4, ACTH, cortisol, aldosterone) by topic.	5
50.	- Preparation for a practical lesson on the topic №50 “Management of tuberculosis patients” - Improvement of the interpretation of radiological research data of the thoracic cavity and other organs by topic - Improving the interpretation of the results of laboratory research methods (bacteriological, molecular genetic).	1 2 2

51.	- Preparation for a practical lesson on the topic №51 “Management of patients with chemoresistant tuberculosis” - Improvement of the interpretation of radiological research data of the thoracic cavity and other organs by topic - Improving the interpretation of the results of laboratory research methods (bacteriological, molecular genetic, drug sensitivity tests).	1 2 2
52.	- Preparation for a practical lesson on the topic №52 “Management of patients with tuberculosis in combination with HIV infection” - Improvement of the interpretation of radiological research data of the thoracic cavity and other organs by topic - Improving the interpretation of the results of laboratory research methods (bacteriological, molecular genetic, immunological).	1 2 2
53.	Preparation for a practical lesson on the topic №53 “Management of a patient with an acute cerebrovascular disorder”.	2,5
54.	Preparation for a practical lesson on the topic №54 “Management of a patient with epileptic and non-epileptic paroxysmal states”.	2,5
55.	Preparation for a practical lesson on the topic №55 “Management of a patient with infectious and infectious-allergic diseases of central and peripheral nervous system”.	2,5
56.	Self-study lesson on the topic №56 “Management of a patient with acute pain syndromes in the case of damage to the central and peripheral nervous system”.	4
57.	Self-study lesson on the topic №57 “Management of a patient with neurological manifestations of HIV-infection”.	3,5
58.	- Preparation for a practical lesson on the topic №58 “Principles of organization of medical care in Ukraine” - Mastering the skill of intravenous infections.	6
59.	- Preparation for a practical lesson on the topic №59 “Management of a patient with diseases of the cardiovascular system” - Mastering the skill of ECG recording and interpretation - Mastering the interpretation of Doppler-Echo-CG - Improving of the interpretation of laboratory methods of examination (blood lipids, coagulogram, D-dimer, biochemical markers of myocardionecrosis, creatinine, glomerular filtration rate) - Improving the blood pressure measuring and data interpretation.	6

60.	- Preparation for a practical lesson on the topic №60 “Management of a patient with diseases of the musculoskeletal system and connective tissue” - Improving the interpretation of the results of ultrasound and X-ray examination of the spine, chest cavity and joints - Improving the interpretation of synovial fluid analysis - Improving the interpretation of serologic reactions' results in autoimmune diseases.	6
61.	- Preparation for a practical lesson on the topic №61 “Management of a patient with diseases of the digestive system” - Improving the interpretation of the abdominal cavity ultrasound, pH-metry of the esophagus and stomach - Improving the interpretation of gastrointestinal tract endoscopy - Improving the interpretation of blood biochemistry (total protein and fractions, total bilirubin and fractions, serum transaminases, alkaline phosphatase, GGTP) - Improving the interpretation of breathing tests results, fecat elastase-1.	6
62.	- Preparation for a practical lesson on the topic №62 “Management of a patient with diseases of the respiratory organs” - Improving the interpretation of the ultrasound and X-ray examinations of chest cavity, spirometry and bronchial endoscopy - Improving the interpretation of sputum and pleural fluid analysis.	6
63.	- Preparation for a practical lesson on the topic №63 “Management of a patient with diseases of the blood and hematopoietic organs” - Improving the interpretation of complete blood count, sternal putcate, hystomormhological analysis of lymph nodes byoptate - Improving the interpretation of iron metabolism markers in the serum - Improvement of brood type determination - Improvement of blood components and substitutes transfusion	6
64.	- Preparation for a practical lesson on the topic №64 “Management of a patient with diseases of the genitourinary system” - Improving the interpretation of X-ray examination of genitourinary tract results by topic - Improving the interpretation of laboratory examination (urin alysis, urine analysis on Nechiporenko and Zimnitskiy, microbiological urinalysis, creatinine, glomerular filtration rate, urea, uric acid)	6

65.	- Preparation for a practical lesson on the topic №65 “Differential approach to providing emergency medical care in emergency situations with diseases of the cardiovascular system” - Improving the CPR methodic - Improving the interpretation of ECG, Doppler-Echo-CG, coagulogram results by topic.	6
66.	- Preparation for a practical lesson on the topic №66 “Differentiated approach to providing emergency medical care in emergency situations with diseases of the digestive organs” - Improving the interpretation of biochemical blood tests (total protein and fractions, total bilirubin and fractions, serum transaminases, alkaline phosphatase, GGTP) by topic - Improving the interpretation of the ultrasound examination and gastrointestinal tract endoscopy by topic.	6
67.	- Preparation for a practical lesson on the topic №67 “Differential approach to providing emergency medical care in emergency situations for diseases of the respiratory organs and genitourinary system” - Improving the interpretation of the X-ray examination of chest cavity by topic - Improving the interpretation of laboratory examination (arterial and venous blood gases, acid-base balance) - Improving of the urinary bladder catheterization with a soft catheter skill.	
68.	Individual tasks	2
69.	Writing of a medical history	2
70.	Training for final module control	4
Total number of hours for module 3		136
Total number of hours for discipline		280

10. Individual tasks

- Presentation of an article at a practical session
- Report at clinical conferences of department bases
- Presentation of medical history at a practical session
- Writing theses, articles.

11. Methods of teaching

Depending on the source of knowledge: verbal (explanation, lecture, conversation, scientific discussion, report); visual (illustration, demonstration); practical (practical lesson, mastering practical skills), work with the books.

Depending on the logical type of teaching: analytical, synthetical, analytical and synthetical, inductive, deductive, transductive.

Depending on the level of learning activity: explanatory-illustrative, reproductive, problematic, search level; investigatory, method of a lessons on problematics.

Interactive: role play, work in small groups (teams), case-method, creative tasks, use of interactive video lessons, attending medical meetings, consiliums, conferences, «brainstorm», «discussion».

On-line studying methods with the use of modern educational platforms and resources (LIKAR.nmu, Zoom, Skype, Classroom etc.).

12. Methods and forms of control, distribution of grades, that students receive, evaluation

Control methods: oral, written, tests, practice.

Regulations of the evaluation of current and final control of the discipline (made in accordance with the «Regulations on procedure of evaluation of students' knowledge during current and final control of the discipline in Bogomolets National Medical University» of 05.09.2019)

In the organization of educational process according to the credit-transfer system session-module control is used, which includes the following means of control:

The evaluational system includes current and final control.

Monitoring of the initial level of knowledge includes determination of the initial level of students' knowledge of allied disciplines necessary for mastering the discipline that the student is taught. The results of this monitoring don't affect the

current assessment, since they play an introductory role in teacher-student communication.

Current assessment includes 100% interrogation of the group at a practical lesson with an obligatory evaluation of all the lesson's components – test control, oral interrogation, solving of situational tasks, description of medications etc. Each topic also includes the monitoring of practical skills.

Each part of the lesson and current learning is graded with a traditional «5-4-3-2» grade scale, then the grade is converted into the points in accordance with the distribution scale, determined by the working syllabus, composed and approved before the beginning of the discipline. If a student receives «2», this grade is converted into 0 points.

Student can improve his skills and knowledge on the topic, that he received «2» and 0 points accordingly, for during the following semester, during the current control, according to the department's regulations, without receiving any points.

Students can become familiar with a written assignment, verified by the teacher, and appeal to the Head of the department or their assistant in case of disagreement.

Assessments are also subject:

Workbooks included in the educational program of the discipline; topics assigned for self-studying in extracurricular time.

Department also adds extra-points for participation and obtaining medal places in national and other olympiads for the discipline.

At the end of a lesson, teacher announces the mean grades to the students.

Total sum of the points received due to the current assessment is a component of a total grade for the discipline depending on the type of final control.

The total possible score for the current assessment is 80 points (200 points for the transfer credit).

Current learning is composed of all the points student collected during all of the auditorium classes. Topics of the missed lessons are learned by the student individually without receiving any points according to the «Regulations on

procedure of evaluation of students' knowledge during current and final control of the discipline in Bogomolets National Medical University». Thus, current assessment doesn't equate the minimal number of points required for admission to a final control for the discipline. Points from the current assessment are reassigned to the individual assignments if the department allows.

Procedure for the calculation of points for the discipline

During the evaluation of learning of each topic of the module, students are given grades by the 4-point (traditional) system and the multi-point scale using accepted and approved criteria. All assignments, determined by the study guidelines for the topic, are evaluated. Student has to receive a grade for each topic. Traditional grades are then converted into points.

Traditional grades are converted into points according to the number of topics per module. The number of points corresponding to the grade "5" is calculated by dividing the maximum number of points for the current educational activity, namely 80 (for transfer credit - 200) by the number of practical classes. To calculate the grade "3", the number of points is calculated, which is 60% of the maximum number of points for the current educational activity.

The value of each topic within the same module has to be the same.

Methods of the current assessment have to be standard and have to include control of theoretical and practical training.

Final score for current assessment is determined by the arithmetic sum of points for each lesson.

Lecture material is evaluated during the final control (additional points may be assigned for lecture attendance according to the department's regulations).

Head of the department regularly monitors the current learning, minding the risk-group students (significant number of «abs», unsatisfactory grades). At the department's methodical councils staff members discuss the results of current learning. Risk-group students are offered to voluntarily take additional lessons for more profound understanding of the subject in advance, before or after

the final control, according to the Regulations of the provision of educational services in the University.

Final control

Final control involves determining the level of formed knowledge and skills. It is conducted after the completion of the study of the discipline. It includes control of theoretical and practical training. The control is carried out in the form of a final control.

The students are admitted to the final control of the discipline if they attended at least 75% of classes (lectures, practical classes) with all received points during the study of the discipline.

If the students attended less than 75% (missed more than 25%) of the classes, they are considered to have failed the educational program and plan of the discipline, and therefore must re-learn the discipline.

The educational classes that were missed for any reason, including due to illness, are mastered by students independently in extra-auditory time according to the department's regulations (by writing a summary of the educational topic, medical history, distance learning, consultations, demonstration of practical skills, etc). The student shows the summary of the missed topic to the teacher of the group during the next educational session or after the beginning of the attendance of educational classes. If the summary is present, the teacher makes a mark in the form of the letter "K" in the journal of attendance and students' success in the column of the missed topic, without assigning a grade. The presence of the summary of the missed lesson is confirmation of the student's completion of the educational program.

The teacher returns the summary of the missed lesson to the student. The department's teacher maintains a Register of summaries for missed classes according to the form, which is in appendix to the academic journal and shows the dynamics of students' mastery of missed educational topics. Such Register is subject to weekly control by the head of the department.

The department does not establish a separate schedule indicating the hours for accepting summaries of missed classes. Students do not make up for missed lectures, at the same time, missed lectures are included in the total number of missed classes in the academic discipline.

Assessment of the discipline

The final control is carried out in the form of a transfer credit – module 1 (4th year, 7-8 semesters), module 2 (5th year, 9-10 semesters) and final control – module 3 (6th year, 11-12 semesters; combined form of conducting).

The number of educational questions submitted for final control should contain the most important questions from the discipline, and should not constitute the entire educational material, the study of which is provided by the educational program for the discipline.

The evaluation of the results of the final control and the transfer credit are carried out according to the 200-point control system, adopted by the university, and the national scale; it must be reflected in the relevant information.

Transfer credit is a form of final control, which involves the assessment of mastering of educational material based on ongoing control without assigning a grade. Assessment of the results is carried out according to the 200-point control system adopted by the university and is reflected in the relevant information. The exam is considered passed if the student did not receive a "2" during the ongoing study and attended 75% of classroom classes.

When issuing a transfer credit for a discipline, the student is given the right to redo unsatisfactory grades no later than three days (cycle system - per day) before the final control in order to accumulate the number of points for enrollment in the discipline.

The regulations for the final control with a list of questions are discussed and approved at the methodical meeting of the department, the Center for Therapeutic Disciplines, approved by the Vice-Rector for Scientific, Pedagogical and Educational Work and made public before the start of training (website, stand, introduction at the first lecture or practical session).

Final control (FC) – is a form of final control of determining the skills and knowledge formed by the student in a separate academic discipline for the entire period of studying the discipline, which is carried out after the end of studying during the last class. When assigning a grade for the discipline, the number of points accumulated by the student for the ongoing study (maximum number of points is 80) and the result of passing the FC in points (maximum number of points is 120) are considered. The student completes the FC with the number of points they have accumulated during the ongoing study. The form of FC and the type of tasks are determined by the educational (work) program of the discipline and the department's regulations. Enrollment of credit for the studied discipline is carried out if the total number of points received by the student is not less than the minimum. The number of points is determined by the work program for the academic discipline and corresponds to the minimum value of the grade E, and therefore is 111 points.

- Admission to the FC is 75% attendance of the classes, including lectures. Admission in terms of points is not established.
- The student's ability to complete a FC in a discipline is not affected by the results of other disciplines.

Distribution of the points received by students

Module 1 (4th year). Internal medicine (gastroenterology, hematology, pulmonology) including endocrinology, phthisiology, medical practice training (professional education) internal diseases. The form of control is transfer credit

Current assessment and self-study work*		Individual tasks	Total
Traditional scale	Conversion into points		
T1-T35		7,5 (4 points – writing a medical history; 3,5 points – a report for a practical session)	Maximum 200 points
5	5,5		
4	4,5		

3	3,4		
2	0		

Note. * - 50% of points – self-study work (points for each topic)

Module 2 (5th year). Internal medicine (cardiology, rheumatology, nephrology). The form of control is transfer credit

Current assessment and self-study work*		Individual tasks	Total
Traditional scale	Conversion into points		
T1-T23		9,1 points (5 points – writing a medical history; 4,1 points – a report for a practical session)	Maximum 200 points
5	8,3		
4	6,8		
3	5,2		
2	0		

Note. * - 50% of points – self-study work (points for each topic)

Module 3. Internal medicine, including phthisiology, endocrinology, emergency conditions in neurology, medical practice training (professional education) internal diseases. The form of control is final control

Current assessment and self-study work*		Individual tasks	Total for current assessment	Final control	Total
Traditional scale	Conversion into points				
T1-T65		2 points: 1 point – writing a medical history; 1 point – a report for a practical session)	Maximum 80 points	Maximum 120 points	Maximum 200 points
5	1,2				
4	1,0				
3	0,7				
2	0				

Note. * - 50% of points – self-study work (points for each topic)

Score for the discipline is determined by the arithmetical mean of the points for the first (4th year), second (5th year) and third (6th year) modules.

Compliance of rating scales with the quality of the assimilation of educational material

Mark by national rating scale	Mark in points	Mark by ECTS scale	Explanation
Excellent	170-200	A	Excellent (excellent performance only with a small amount of errors)
Good	155-169	B	Very good (above average with several errors)
	140-154	C	Good (generally correct execution with certain number of significant errors)
Satisfactory	125-139	D	Satisfactory (not bad, but with a significant number of shortcomings)
	111-124	E	Enough (performance satisfies minimum criteria)
Unsatisfactory	60-120	FX	Unsatisfactory (with a possibility of redrafting)
	0-59	F	Unsatisfactory (with mandatory reexamination of the discipline)

Procedure for liquidation of academic debt

In case of receiving an unsatisfactory grade within 60-100 points (FX), student can attempt to pass 2 more times: once – to the departments' committee including Head of the department, and for the last time – to the committee including Head of the department and the Dean.

Retake exam of the discipline is conducted according to the schedule made by the department, verified by the Dean (an interval between attempts/disciplines 3 or more days). Exams on disciplines studied during a certain academic year must be passed before the beginning of the next academic year. Academic debt at the beginning of the academic year is a reason for expelling the student from the

university for failing to fulfill the requirements of study programme requirements (arrangement of an academic leave and a repeated course because of health issues).

In case of receiving an unsatisfactory grade within 1-59 points (F) student must once more learn it in extracurricular time on a paid basis. Repeated unsatisfactory result as a result of relearning the discipline, in addition to two failed retake exams or unsatisfactory grades for 3 disciplines, and missed auditory classes without sound reasons with total hours equating 120 hours and more, is a reason for expelling the student from the university for failing to fulfill the requirements of study programme.

Grades for other disciplines don't affect the student's ability to pass the final control.

LIST OF THEORETICAL QUESTIONS FOR THE FINAL MODULE CONTROL

Module 3 (6th year). Internal medicine, including physiology, endocrinology, emergency conditions in neurology, medical practice training (professional education) internal diseases

- Management of a patient with arterial hypertension: algorithms and standards of diagnosis and treatment
- Management of a patient with chest pain: algorithms and standards of diagnosis and treatment
- Management of a patient with cardiac arrhythmias: algorithms and standards of diagnosis and treatment
- Management of a patient with cardiac conduction disorder: algorithms and standards of diagnosis and treatment
- Management of a patient with shortness of breath: algorithms and standards of diagnosis and treatment
- Management of a patient with edema: algorithms and standards of diagnosis and treatment

- Management of a patient with pulmonary hypertension: algorithms and standards of diagnosis and treatment
- Management of a patient with a heart murmur: algorithms and standards of diagnosis and treatment
- Management of a patient with a congestive heart failure: algorithms and standards of diagnosis and treatment
- Management of a patient with back and limbs pain: algorithms and standards of diagnosis and treatment
- Management of a patient with an articular syndrome: algorithms and standards of diagnosis and treatment
- Management of a patient with purpura: algorithms and standards of diagnosis and treatment
- Management of a patient with fever: algorithms and standards of diagnosis and treatment
- Management of a patient with weight loss: algorithms and standards of diagnosis and treatment
- Management of a patient with dysphagia and heartburn: algorithms and standards of diagnosis and treatment
- Management of a patient with dyspepsia: algorithms and standards of diagnosis and treatment
- Management of a patient with abdominal pain: algorithms and standards of diagnosis and treatment
- Management of a patient with chronic diarrhea: algorithms and standards of diagnosis and treatment
- Management of a patient with constipation: algorithms and standards of diagnosis and treatment
- Management of a patient with jaundice: algorithms and standards of diagnosis and treatment
- Management of a patient with hepatomegaly and hepatolienal syndrome: algorithms and standards of diagnosis and treatment

- Management of a patient with portal hypertension and ascitis: algorithms and standards of diagnosis and treatment
- Management of a patient with pulmonary infiltrate: algorithms and standards of diagnosis and treatment
- Management of a patient with chronic cough: algorithms and standards of diagnosis and treatment
- Management of a patient with broncho-obstructive syndrome: algorithms and standards of diagnosis and treatment
- Management of a patient with cyanosis: algorithms and standards of diagnosis and treatment
- Management of a patient with hemoptysis: algorithms and standards of diagnosis and treatment
- Management of a patient with pleural effusion: algorithms and standards of diagnosis and treatment
- Management of a patient with anemia: algorithms and standards of diagnosis and treatment
- Management of a patient with bleeding: algorithms and standards of diagnosis and treatment
- Management of a patient with leukocytosis and lymphadenopathy: algorithms and standards of diagnosis and treatment
- Management of a patient with urinary syndrome: algorithms and standards of diagnosis and treatment
- Management of a patient with nephrotic syndrome: algorithms and standards of diagnosis and treatment
- Management of a patient with chronic kidney disease: algorithms and standards of diagnosis and treatment
- Diabetes mellitus, classification, etiology, pathogenesis, clinic, diagnosis: diagnostic algorithms and protocols
- Type 1 and type 2 diabetes, modern methods of therapy: treatment algorithms and protocols

- Acute and chronic complications of diabetes. Algorithms and protocols for the treatment of hypoglycemic coma, diabetic ketoacidotic coma, diabetic neuropathy, diabetic nephropathy, retinopathy, diabetic foot syndrome
- Iodine deficiency diseases of the thyroid gland. Signs of an endemic area according to WHO. Clinic, diagnosis, prevention and treatment
- Hypothyroidism and thyroiditis. Classification, diagnosis, clinic, treatment: algorithms for diagnosis and treatment of iodine deficiency diseases, hypothyroidism, thyroiditis
 - Thyrotoxicosis. Clinical forms. Diagnosis, treatment
 - Thyroid cancer. Classification, clinic, diagnosis, treatment
 - Algorithms for diagnosis and treatment of thyrotoxicosis, thyroid cancer
- Etiology and pathogenesis of the main comatose states in endocrinological practice
- Diabetic (ketoacidotic) coma: definition, provoking factors, clinic, diagnosis, differential diagnosis
- Treatment of ketoacidotic coma (pre-hospital stage, intensive care unit): laboratory control, rehydration, insulin therapy, correction of electrolyte disturbances and metabolic acidosis
- Hypoglycemic coma and hypoglycemia: main causes, provoking factors, classification of hypoglycemia by degree of severity, diagnosis. Treatment of hypoglycemia depending on the degree of severity
 - The concept of hyperosmolar and lacticidotic coma in diabetes
 - Protocol for providing medical care to patients with diabetic comas
 - Thyrotoxic crisis. Etiology and pathogenesis, clinic, diagnosis, differential diagnosis, treatment
- Addisonian crisis. Etiology and pathogenesis, clinic, diagnosis, differential diagnosis, treatment
- Tactics in patients with cardiac and respiratory arrest

- Diagnostic and emergency care standards in patients with hypertensive crises in the pre-hospital and hospital care
- Diagnostic and emergency care standards in patients with acute coronary syndrome in the pre-hospital and hospital care
- Diagnostic and emergency care standards in patients with pulmonary embolism in the pre-hospital and hospital care
- Diagnostic and emergency care standards in patients with acute heart failure in the pre-hospital and hospital care
- Diagnostic and emergency care standards in patients with shock in the pre-hospital and hospital care
- Diagnostic and emergency care standards in patients with paroxysmal cardiac arrhythmias in the pre-hospital and hospital care
- Diagnostic and emergency care standards in patients with high grade atrioventricular blocks
- Diagnostic and emergency care standards in patients with acute respiratory failure in the pre-hospital and hospital care
- Diagnostic and emergency care standards in patients with melena and hematemesis in the pre-hospital and hospital care
- Diagnostic and emergency care standards in patients with oliguria in the pre-hospital and hospital care
- Diagnostic and emergency care standards in patients with coma (including hypoglycemic, diabetic, hepatic and uremic) in the pre-hospital and hospital care
- Protocols of diagnosis and of pre-hospital and hospital care in patients with thyrotoxic crisis
- Protocols of diagnosis and of pre-hospital and hospital care in patients with Addisonian crisis
- Primary forms of tuberculosis
- Secondary forms of tuberculosis

- Extrapulmonary tuberculosis: tuberculosis of the bones, lymph nodes, kidneys, meninges etc.
- Monoresistant, polyresistant, multidrug-resistant tuberculosis (MDRTB) and tuberculosis with widespread drug resistance
- Tuberculosis in combination with HIV infection
- Pulmonary hemorrhage
- Spontaneous pneumothorax
- Management of a patient with an acute cerebrovascular disorder: algorithms and standards of a diagnosis and treatment of transient ischemic attacks, acute ischemic and hemorrhagic strokes.
- Management of a patient with a status epilepticus: algorithms and standards of a diagnosis and treatment.
- Management of a patient with infectious and infectious-allergic diseases of central and peripheral nervous system: algorithms and standards of a diagnosis and treatment of meningitis, encephalitis, myelitis, poliomyelitis, neuroborreliosis.
- Management of a patient with infectious-allergic diseases of nervous system: algorithms and standards of a diagnosis and treatment of Guillain–Barré syndrome, post-diphtheritic polyneuropathy, chronic demyelinating polyneuropathy.
- Management of a patient with headache and trigeminal neuralgias: algorithms and standards of a diagnosis and treatment.
- Management of a patient with vertebrogenic and non-vertebrogenic pain syndromes: algorithms and standards of a diagnosis and treatment.
- Differential diagnosis of arterial hypertension based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of cardiac arrhythmias based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of cardiac conduction disorders based on the results of clinical, laboratory and instrumental examination

- Differential diagnosis of dyspnea based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of chest pain based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of edema based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of pulmonary hypertension based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of heart murmur based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of pain in the back and limbs based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of articular syndrome based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of purpura based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of dysphagia and heartburn based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of dyspepsia based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of abdominal pain based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of chronic diarrhea based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of constipations based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of jaundice based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of pulmonary infiltrate based on the results of clinical, laboratory and instrumental examination

- Differential diagnosis of portal hypertension based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of chronic cough based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of broncho-obstructive syndrome based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of cyanosis based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of hemoptysis based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of pleural effusion based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of anemia based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of lymphadenopathy and leukocytosis based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of urinary syndrome based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of nephrotic syndrome based on the results of clinical, laboratory and instrumental examination
- Differential diagnosis of chronic kidney disease based on the results of clinical, laboratory and instrumental examination.

LIST OF PRACTICAL WORK AND TASKS FOR THE FINAL CONTROL

Module 3 (6th year). Internal medicine, including phthisiology, endocrinology, emergency conditions in neurology, medical practice training (professional education) internal diseases

The list of typical tasks of activity and skills which are checked at carrying out of the final module 3:

- Work with the patient
 - Collect complaints, medical history, life history;
 - Collect information about the general condition of the patient (consciousness, constitution, fatness) and assess the appearance (examination of the skin, subcutaneous fat, palpation of lymph nodes, thyroid and mammary glands), examine the condition of the musculoskeletal system, joints;
 - Examine the condition of the respiratory organs (chest examination, chest palpation, percussion and lung auscultation);
 - Examine the condition of the cardiovascular system (examination and palpation of the heart and blood vessels, percussion of the heart and auscultation of the heart and blood vessels);
 - Examine the condition of the digestive organs (examination, percussion, superficial and deep palpation);
 - Examine the condition of the urinary system (examination of the lumbar region, palpation of the kidneys).
- Make a probable (preliminary) diagnosis of the disease (List 2)
- Assign and justify laboratory and / or instrumental examination of a patient with diseases (List 2)
- Interpret the results of laboratory and instrumental research (List 3)
- Carry out differential diagnosis of diseases (List 2)
- Make a clinical diagnosis of the disease (List 1)
- Determine the necessary regime and diet of a patient with diseases (List 2)
- Determine the principles and nature of treatment (conservative, operative) of diseases (List 2)
- Diagnose and provide assistance in emergencies (List 4)
- Perform medical manipulations (List 5)
- Determine the tactics of secondary prevention of patients who are subject to dispensary supervision
- Keep medical records of the patient.

List 1 (syndromes & symptoms)

1. ANEMIA (acute and chronic post-hemorrhagic anemia, iron-deficiency, B12-deficiency, foliodeficiency anemia, aplastic anemia, hemolytic anemia).

2. ARTERIAL HYPERTENSION (essential arterial hypertension, secondary arterial hypertensions, i.e.: renal hypertension - renovascular, renal parenchymal type; endocrine hypertension - Cushing syndrome & disease, pheochromocytoma, primary hyperaldosteronism, hyperthyroidism, hypothyroidism; coarctation of aorta, isolated systolic arterial hypertension, obstructive sleep apnea syndrome, arterial hypertension during pregnancy).

3. ASCITES (cirrhosis and kidney tumor, right ventricular insufficiency, incl. one accompanying a constrictive pericarditis, renal vein thrombosis, thrombosis of the portal vein or its derivatives, thrombosis, stenosis, obliteration of the inferior vena cava at or above the hepatic vein level etc.)

4. CHEST PAIN (acute coronary syndrome, stenocardia, aortic stenosis, hypertrophic cardiomyopathy, mitral valve prolapse, coronaritis, aortitis, myocarditis, acute pericarditis, stratification of aorta, pleuritis, thromboembolism of pulmonary artery, pneumothorax, tumors of mediastinum, gastroesophageal reflux disease, cardiospasm, spasm of esophagus, hiatal hernia, peptic ulcer of stomach & duodenum, pancreatitis, osteochondrosis of spine at the chest, shingles, myositis, costochondritis, intercostal neuralgia, panic attack syndrome).

5. ABDOMINAL PAIN (cholecystitis, dyskinesia of gallbladder and Oddi sphincter of Oddi, cholelithiasis, pancreatitis, chronic gastritis, peptic ulcer and other ulcers of the stomach and duodenum, irritable bowel syndrome, celiac disease and other enteropathy, Crohn's disease, ulcerative colitis).

6. PAIN IN THE BACK & LIMBS (ankylosing spondylitis, osteoarthritis, osteochondrosis of the spine, osteoporosis, dermatomyositis/polymyositis, neuropathy, particularly caused by diabetes).

7. BRONCHO-OBSTRUCTIVE SYNDROME (chronic obstructive pulmonary disease, asthma, cancer of the trachea, bronchi and mediastinum).

8. BULBAR SYNDROME (in case of acute cerebrovascular disorder, Guillain–Barré acute demyelinating polyradiculoneuropathy, post-diphtheritic polyneuropathy, myelitis, poliomyelitis, tick-born encephalitis).

9. PLEURAL EFFUSION (tuberculosis, pneumonia, cancers of the lungs and pleura, heart failure, acute pancreatitis, cirrhosis, nephrotic syndrome, chest trauma, hypothyroidism, systemic connective tissue diseases).

10. HEMORRHAGIC SYNDROME (hemorrhagic vasculitis, nodular polyarteritis, hypersensitivity vasculitis, hemophilia, idiopathic thrombocytopenic purpura, disseminated intravascular coagulation syndrome, thrombocytopenia caused by blood cancer).

11. HEPATOMEGALY & HEPATOSPLENOMEGALY SYNDROME (chronic hepatitis, cirrhosis and liver cancer, thrombosis of the hepatic veins, leukemia, lymphogranulomatosis, erythremia, right ventricular heart failure, particularly in constrictive pericarditis, storage diseases, including hemochromatosis).

12. HYPERGLYCEMIA (diabetes mellitus, hypercorticism, thyrotoxicosis, pheochromocytoma, acromegaly).

13. HYPORGLYCEMIA (adrenal deficiency, hypothyroidism, hypopituitarism, insulin-producing tumours, hepatic and renal failure, sepsis).

14. HEADACHE (in case of acute cerebrovascular disorders, encephalitis, meningitis, migraine).

15. DYSPHAGIA (esophagitis, including those accompanying an atgastroesophageal reflux disease, cancer of the esophagus, diffuse esophageal spasm, achalasia cardia, esophageal diverticulum, dysphagia caused by lesion of the central and peripheral nervous system and muscular system, systemic scleroderma).

16. JAUNDICE (chronic hepatitis, cirrhosis and liver cancer, hemolytic anemia, cholelithiasis, pancreatic head cancer, cancer of major duodenal papilla, benign hyperbilirubinemia).

17. DYSPNEA (in heart failure with preserved and reduced left ventricular systolic function; respiratory failure due to impaired patency of bronchial tree, lung

and pleural diseases, including pneumonia, tuberculosis and pneumothorax; pulmonary vascular pathology, including pulmonary embolism and chest diseases or respiratory muscles, hyperventilation syndrome cause by the neuroses and neurocirculatory dystonia, lesions of the respiratory center in the organic brain diseases, anemia, botulism).

18. CONSTIPATION (irritable bowel syndrome, colon cancer, anorectal disease, hypothyroidism, situational, iatrogenic, psychogenic and neurogenic constipation, malnutrition).

19. GOITER (nontoxic and toxic goiter, thyroiditis, thyroid cancer).

20. COUGH (chronic obstructive pulmonary disease, asthma, tuberculosis, bronchoectatic disease, pneumonia, pneumoconiosis, malignant tumors of the lungs and bronchi, left ventricular heart failure, post-nasal drip syndrome, gastroesophageal reflux disease).

21. KETOSIS, KETOACIDOSIS (diabetes mellitus, hypercorticism, starvation, infectious diseases).

22. HEMOPTYSIS (tuberculosis, cancers of the bronchi and lungs, pneumonia, bronchoectatic disease, lung abscess, mitral stenosis, pulmonary infarction).

23. PULMONARY INFILTRATES (pneumonia, infiltrative pulmonary tuberculosis, pulmonary eosinophilic infiltration, heart attack and lung cancer, benign tumors of the lung, pulmonary sarcoidosis, focal pulmonary fibrosis).

24. LYMPHADENOPATHY (tuberculosis, sarcoidosis, infectious mononucleosis, connective tissue disease, metastatic lesions, acute and chronic lymphoid and myeloid leukemia, Hodgkin's disease, non-Hodgkin lymphoma, reactive lymphadenitis, sepsis, HIV infection).

25. FEVER (rheumatoid arthritis, infective endocarditis, malignant tumors, including leukemia, lymphoma, multiple myeloma, Hodgkin's disease, lymphogranulomatosis, sepsis, tuberculosis, connective tissue disease, polyarteritis nodosa, suppurative cholangitis, abscesses of internal organs, Crohn's disease, purulent pyelonephritis).

26. MENINGEAL SYNDROME (in case of meningitis, acute cerebrovascular disorders).

27. EDEMATOUS SYNDROME (venous edema: chronic venous insufficiency, impaired venous return, deep vein thrombosis; lymphedema: inflammatory, obstructive; fat, orthostatic and idiopathic; edema caused by lesions of bone and muscular system: arthritis, tendovaginitis; nephrotic syndrome, cardiovascular diseases with the development of heart failure, liver diseases, including cirrhosis and other hypoproteinemic conditions: exudative enteropathy, malabsorption syndrome, nutritional and cachexiac edema; edema caused by taking medications and endocrine diseases: hypothyroidism).

28. NEPHROTIC SYNDROME (acute and chronic glomerulonephritis, renal amyloidosis, diabetic nephropathy, multiple myeloma).

29. PARESIS, PARALYSIS (in case of acute cerebrovascular disorder, Guillain–Barré acute demyelinating polyradiculoneuropathy, post-diphtheritic polyneuropathy, myelitis, poliomyelitis, tick-born encephalitis, neuroborreliosis, plexopathy).

30. HEARTBURN (gastroesophageal reflux disease, chronic gastritis, unexamined dyspepsia, peptic ulcer of stomach and duodenum).

31. PORTAL HYPERTENSION (chronic viral hepatitis, cirrhosis and liver tumors, right ventricular heart failure, including constrictive pericarditis, hepatic vein thrombosis, thrombosis of the hepatic portal vein or its branches, thrombosis, stenosis, and obliteration).

32. SPEECH DISORDER (APHASIA) (in case of acute cerebrovascular disorder).

33. IMPAIRMENT OF CONSCIOUSNESS (in case of epilepsy, acute cerebrovascular disorder, encephalitis, meningitis).

34. PAROXYSMAL CARDIAC ARRHYTHMIAS (extrasystole, persistent atrial fibrillation and flutter, paroxysmal ventricular tachycardia).

35. RADICULAR SYNDROME (vertebrogenic radiculopathies, Guillain–Barré syndrome).

36. URINARY SYNDROME (acute and chronic glomerulonephritis, tubulointerstitial renal diseases, pyelonephritis, cystitis, urethritis, urolithiasis, diabetic nephropathy, renal infarction, renal tuberculosis, hypernephroma, hemorrhagic vasculitis).

37. ARTICULAR SYNDROME (rheumatoid arthritis, osteoarthritis, axial spondylitis, reactive arthritis, gout, systemic lupus erythematosus, systemic sclerosis, acute rheumatic fever).

38. SEIZURES (EPILEPTIC SEIZURES) (in case of epilepsy, acute cerebrovascular disorder, encephalitis).

39. WEIGHT LOSS (cancer, systemic lupus erythematosus, nodular polyarteritis, diseases of the digestive tract, lungs, including tuberculosis, cardiovascular system, alimentary and psychogenic weight loss, HIV).

40. CHRONIC DIARRHEA (chronic atrophic gastritis, diseases of operated stomach, Zollinger-Ellison syndrome, Crohn's disease, ulcerative colitis, celiac disease, Whipple disease, syndrome of excessive bacterial growth in the small intestine, food intolerance, irritable bowel syndrome, chronic pancreatitis, diabetic enteropathy, amyloidosis, acquired immune deficiency syndrome).

41. CENTRAL & PERIPHERAL CYANOSIS (heart and lung diseases, including congenital heart defects at the stage of Eisenmenger syndrome, acquired heart defects – mitral stenosis, insufficiency of the tricuspid valve, cardiac and respiratory failure, and the formation of abnormal hemoglobin).

42. HEART MURMUR (congenital heart defects: ventricular septal defect, atrial septal defect, open arterial duct, coarctation of the aorta; acquired heart defects: mitral stenosis, insufficiency of mitral valve, mitral valve prolapse, aortic stenosis, aortic valve insufficiency, tricuspid valve insufficiency, hypertrophic cardiomyopathy, "innocent" systolic murmur in young age).

List 2 (diseases)

Diseases of the cardiovascular system

1. Essential hypertension

2. Secondary (symptomatic) hypertension:
 - renal (renovascular, renoparenchymatous);
 - endocrine (Itsenko-Cushing's syndrome and disease, pheochromocytoma, primary aldosteronism, hyper- and hypothyroidism);
 - coarctation of the aorta;
 - hypertension during pregnancy.
3. Atherosclerosis
4. Stable angina
5. Unstable angina. Acute myocardial infarction
6. Pericarditis
7. Pulmonary hypertension
8. Acquired heart defects: mitral, aortic and tricuspid valves, combined mitral and aortic defects
9. Congenital heart defects: atrial and interventricular septal defect, open ductus arteriosus, aortic coarctation
10. Infectious endocarditis
11. Myocarditis and cardiomyopathy
12. Pulmonary embolism
13. Cardiac rhythm disorders
14. Cardiac conduction disorders
15. Heart failure.

Respiratory diseases

1. Chronic obstructive pulmonary disease
2. Asthma
3. Pneumonia
4. Pleurisy
5. Infectious destructive lung disease
6. Respiratory failure.

Diseases of the digestive system

1. Chronic esophagitis and gastroesophageal reflux disease

2. Functional disorders of the stomach, gallbladder, biliary tract and intestine
3. Chronic gastritis and duodenitis
4. Peptic ulcer of the stomach and duodenum
5. Celiac disease and others enteropathy
6. Ulcerative colitis, Crohn's disease
7. Gallstone disease; chronic cholecystitis
8. Chronic hepatitis
9. Cirrhosis
10. Chronic pancreatitis.

Diseases of the musculoskeletal system and connective tissue

1. Osteoarthritis
2. Systemic lupus erythematosus
3. Systemic scleroderma
4. Gout
5. Reactive arthritis
6. Acute rheumatic fever
7. Rheumatoid arthritis
8. Dermatomyositis/poliomyositis
9. Ankylosing spondylitis
10. Systemic vasculitis (hypersensitive and hemorrhagic vasculitis, nodular polyarteritis).

Diseases of the genitourinary system

1. Pyelonephritis
2. Tubulointerstitial nephritis
3. Acute and chronic glomerulonephritis
4. Amyloidosis of the kidneys
5. Nephrotic syndrome
6. Chronic kidney disease.

Diseases of the blood

1. Anemia

2. Acute and chronic leukemia
3. Lymphomas
4. Multiple myeloma
5. Hemophilia
6. Idiopathic thrombocytopenic purpura.

Diseases of the endocrine system

1. Diabetes mellitus type 1
2. Diabetes mellitus type 2
3. Iodine deficiency diseases of the thyroid gland
4. Hypothyroidism
5. Thyrotoxicosis
6. Thyroid cancer.

Diseases of central and peripheral nervous system

1. Cerebrovascular diseases (transient ischemic attack, ischemic stroke, hemorrhagic stroke)
2. Epilepsy
3. Non-epileptic paroxysmal states
4. Infectious diseases of nervous system (meningitis, encephalitis, myelitis, poliomyelitis, neuroborreliosis) including HIV-infection
5. Infectious-allergic mononeuropathy and polyneuropathy (Guillain–Barré syndrome, post-diphtheritic polyneuropathy, chronic demyelinating polyneuropathy, in HIV-positive patients).
6. Migraine and prosopalgias (neuralgia of a trigeminal nerve, pterygopalatine node ganglionitis, Hunt's syndrome)
7. Vertebrogenic lesions of the nervous system: reflex and radicular syndromes of cervical, thoracic and lumbosacral levels.
8. Non-vertebrogenic pain syndromes (herpetic ganglionitis, brachial plexitis, carpal canal syndrome).

List 3 (emergency condition)

- Hypertensive crises

- Acute coronary syndrome
- Acute heart failure
- Acute respiratory failure
- Addisonian crisis
- Acute hepatic encephalopathy
- Acute kidney injury
- Arrest of the circulation and respiration
- Comas, including hypoglycemic and diabetic
- Gastrointestinal and esophageal bleeding
- Laryngeal edema / angioedema
- Paroxysmal cardiac arrhythmias and conduction disorders (paroxysmal tachycardia, atrial fibrillation/atrial flutter, high grade atrioventricular blocks, Stokes-Adams syndrome)
- Thyrotoxic crisis (Thyroid storm)
- Acute pulmonary embolism
- Shocks
- Vascular disorders of the nervous system (transitory ischemic attack, ischemic stroke, hemorrhagic stroke)
- Epileptic status
- Non-epileptic paroxysmal states (syncope)
- Infectious diseases of the nervous system (meningitis, encephalitis, myelitis, poliomyelitis, neuroborrheliosis)
- Infectious-allergic mononeuropathy and polyradiculoneuropathy (Guillain–Barré syndrome, post-diphtheritic polyneuropathy)

List 4 (laboratory and instrumental methods)

1. Analysis of pleural fluid
2. Analysis of ascitic fluid
3. Analysis of synovial fluid
4. Analysis of urine by Nechiporenko
5. Analysis of urine according to Zymnysky

6. Alpha-amylase activity in blood and urine, fecal elastase 1
7. Blood proteins and their fractions, C-reactive protein
8. Blood lipids and lipoproteins and their fractions
9. General blood test
10. General analysis of urine, test for microalbuminuria
11. Biochemical indicators of serum iron metabolism (ferritin, iron)
12. Glucose tolerance test, glycemic profile, C-peptide, glycated hemoglobin, fructosamine
13. Ketone bodies of blood and urine
14. Indicators of acid-base status of blood
15. Blood electrolytes
16. Blood aminotransferases
17. Total bilirubin and its fractions
18. Coagulogram
19. Biochemical markers of myocardial necrosis, D-dimer
20. Creatinine and blood urea, glomerular filtration rate
21. Blood uric acid
22. Blood alkaline phosphatase
23. General immunological profile of blood
24. Serological reactions in autoimmune diseases
25. Study of the function of external breathing
26. Standard ECG (in 12 leads)
27. Microbiological study of biological fluids and secretions
28. Markers of viral hepatitis
29. Procalcitonin
30. General analysis of the sternal point
31. General analysis of sputum
32. TSH, T4, T3, calcitonin, antibodies to thyroperoxidase (ATPO), antibodies to TSH receptors, antibodies to thyroglobulin
33. ACTH, cortisol, aldosterone and renin

34. Metanephrines in blood and urine
35. Echocardiography and dopplerography
36. Stress tests for diagnosis of myocardial ischemia
37. Methods of instrumental visualization of the thyroid gland
38. X-ray contrast angiography
39. Methods of instrumental visualization of abdominal organs
40. Methods of instrumental visualization of chest cavity organs
41. Methods of instrumental visualization of the genitourinary system
42. Methods of instrumental visualization of the skull, spine, bones and joints
43. pH-metry of the stomach and esophagus
44. Breath tests with ¹³C-urea, ¹³C-triglycerides, ¹³C-starch, ¹³C-lactose and breath water tests with glucose and lactulose
45. Endoscopic examination of the bronchi
46. Endoscopic examination of the digestive tract
47. Histomorphological study of biopsy of lymph nodes
48. Histomorphological study of a biopsy of parenchymal organs
49. Histomorphological study of muscle and skin biopsies.

List 5 (medical procedures)

- Blood pressure measurement
- 12-lead ECG registration
- Carry out cardiopulmonary resuscitation (artificial ventilation of the lungs and indirect heart massage)
- Catheterization of the bladder with a soft catheter
- Administer intravenous injections
- Blood group determination

Know clinical pharmacology of main groups of drugs

1. α and β - agonists
2. Antiaggregants
3. Antianginal

4. Antiarrhythmic
5. Antibacterial
6. Antihypertensive
7. Anticoagulants
8. Expectorants
9. Hemostatics
10. Glucocorticoids and immunosuppressive drugs, cytostatics
11. Diuretics
12. Proton-pump inhibitors
13. Histamine H₂-receptor antagonists
14. NSAIDs (nonsteroidal anti-inflammatory drugs)
15. Oral hypoglycemic drugs and insulin, thyroxine, imidazole derivatives
16. Mineralocorticoids
17. Iron medications
18. Anticholinergics

Be able to prepare medical documentation

1. Medical card of an inpatient
2. Extract from the medical card of an inpatient
3. Procedural sheet (form B №28)
4. Referral to MSEC
5. Medical death certificate
6. Leaflet of incapacity for work
7. Sanatorium-resort map
8. Emergency report of an infectious disease, food, acute occupational poisoning, unusual reaction to vaccination (form №058/o)
9. Prescriptions for all sections of the discipline.

13. Methodological support

1. Textbooks, training aids
2. Methodical recommendations for lectures, video presentations of lectures

3. Plans of practical classes, lectures
4. Tasks for independent work (see above, p. 10)
5. Methodical recommendations for practical lessons for students and teachers
6. Algorithms for performing practical skills, medical manipulations, video films
7. Standardized results of laboratory and instrumental research methods
8. Dummies, phantoms, etc
9. Simulators, electronic guides, computers with appropriate information support
10. Workbooks on the topics of practical classes
11. Test questions, situational tasks, format A test tasks for current and final control of students' knowledge and skills
12. Theoretical questions, practical tasks for final control.

14. Recommended literature

Basic

1. Внутрішня медицина: ревматологія: навчальний посібник / В.Є. Кондратюк, М.Б. Джус. – К.: ВСВ «Медицина», 2017. – 272 с.
2. Внутрішні хвороби. У 2 т. Т. 1 / Л.В.Глушко, С.В.Федоров, І.М. Скрипник, М.М. Островський/ За ред. проф. Л.В.Глушка. – К.: ВСВ «Медицина», 2019. – 680 с.
3. Внутрішні хвороби: Підручник, заснований на принципах доказової медицини 2018/19 / Керівник проекту Александра Кубец, гол. ред. Адріана Яремчук-Кочмарик, Анатолій Свінціцький; пер. з польск. – Краків: Практична медицина, 2018. – 1632 с.
4. Гастроентерологія. Підручник: У 2 Т. - Т.2 / за ред. проф. Н.В Харченко., О.Я. Бабака. - Кіровоград: Поліум, 2017. – 432 с.
5. Ендокринологія: підручник (Ю.І. Комісаренко, Г.П. Михальчишин, П.М. Боднар та ін.) За ред. професора Ю.І. Комісаренко, -

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53. Zipes D.P., Libby P., Bonow R.O. et al. Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine, 2-Volume Set 11th Edition. Elsevier; 2018. – 2128 p.

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2. <https://www.acc.org › guidelines>
3. <https://www.asn-online.org/education/training/fellows/educational-resources.aspx#Guidelines>
4. www.brit-thoracic.org.uk/standards-of-care/guidelines
5. <https://cprguidelines.eu/>
6. https://dec.gov.ua/cat_mtd/galuzevi-standarti-ta-klinichni-nastanovi/
7. <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>
8. <http://www.eagen.org/>
9. <http://www.ers-education.org/guidelines.aspx>
10. <http://www.enp-era-edta.org/#/44/page/home>
11. https://www.eular.org/recommendations_management.cfm
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13. <http://www.esmo.org/Guidelines/Haematological-Malignancies>

14.

<https://ehaweb.org/organization/committees/swg-unit/scientific-working-groups/structure-and-guidelines/>

15. <http://www.gastro.org/guidelines>

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19. http://www.ifp.kiev.ua/index_ukr.htm

20. <http://kdigo.org/home/guidelines/>

21. <https://www.nice.org.uk>

22. <http://www.oxfordmedicaleducation.com/>

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<http://phc.org.ua/>

30. Наказ МОЗ України від 16 лютого 2022 року № 302 «Про затвердження порядку організації виявлення туберкульозу та латентної туберкульозної інфекції»

https://www.phc.org.ua/sites/default/files/users/user90/MOZ_nakaz_16.02.2022_302.pdf

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31. Профілактика і лікування туберкульозу в біженців та інших груп населення в умовах гуманітарної кризи: міжвідомчий польовий посібник (ВООЗ, 2022):

https://www.phc.org.ua/sites/default/files/users/user90/TB_refugees_ENG-UKR.pdf

32. Посібник для обрання молекулярних діагностичних експрес-тестів, рекомендованих ВООЗ, що призначені для виявлення туберкульозу та хіміорезистентного туберкульозу (ВООЗ, 2022)/EN

<https://www.phc.org.ua/kontrol-zakhvoryuvan/tuberkuloz/dlya-fakhivciv-z-tuberkulozu/kerivni-dokumenti-z-tb>

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34. Наказ МОЗ України від 06.10.2021 № 2161 «Про внесення змін до стандартів охорони здоров'я при туберкульозі»

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35. Наказ МОЗ від 06.05.2021 № 882 «Про затвердження санітарно-протиепідемічних норм і правил використання ультрафіолетового бактерицидного випромінювання для знезараження повітря та дезінфекції поверхонь в приміщеннях закладів охорони здоров'я та установ/закладів соціальних послуг/соціального захисту населення»

<https://moz.gov.ua/article/ministry-mandates/nakaz-moz-ukraini-vid-06052021--882-pro-zatverdzhennja-sanitarno-protiepidemichnih-pravil-i-norm-vikoristannja-ultrafiolotovogo-baktericidnogo-viprominjuvannja-dlja-znezarazhennja-povitrja-ta-dezinfekcii-poverhon>

36. Наказ МОЗ України від 09.03.2021 № 406 «Про затвердження Порядку епідеміологічного нагляду за туберкульозом та Зміни до критеріїв, за

якими визначаються випадки інфекційних та паразитарних захворювань, які підлягають реєстрації» <https://zakon.rada.gov.ua/laws/show/z0622-21>

37. Наказ МОЗ від 01.02.2019 № 287 «Про затвердження Стандарту інфекційного контролю для закладів охорони здоров'я, що надають допомогу хворим на туберкульоз» <https://zakon.rada.gov.ua/laws/show/z0408-19#Text>

38. <http://www.diabetes.org>

39. <https://www.youtube.com/c/EndoTime>

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41. <http://jcees.endocenter.kiev.ua>

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43. Ішемічний інсульт.

<https://www.umj.com.ua/article/168420/ishemichnij-insultrekomendatsiyi-aha-ta-a-sa-2019-chastina-i>

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**Diary
of medical practice (professional training) internal medicine**

Student _____
 Faculty _____ 4th year of study _____ group _____
 Second educational level (master's) Specialty 222 Medicine
 Term of practice: from _____ 20__ till _____ 20__.
 Location of practice: _____

Hospital _____
 The university supervisor _____

Clinical base _____
 supervisor _____
 Student _____

Full Name

came to the institution (hospital, enterprise, organization)

Seal of the institution « _____ » _____ 20__ .

(signature)

(position, surname, initials of the responsible person)

left the institution (hospital, enterprise, organization)

Seal of the institution « _____ » _____ 20__ .

(signature)

(position, surname, initials of the responsible person)

Schedule of practice

Date and time	Content of work performed (titles of work)	Notes on type and performance of skills
9:00-10:00	Participation in the organizational meeting and in the round of the head of the department. Working with medical documentation.	
10:00-11:00	Participation in esophago-gastro-duodenoscopy, chest X-ray, etc. Performing medical manipulations (determination of the group of blood, blood pressure measurement, ECG recording, subcutaneous, intramuscular, and intravenous injections).	Examination of the mucous membrane of the esophagus, stomach, interpretation of endoscopic examination data. Interpretation of the chest X-ray data
11:00-11:20	Break	

11:20-12:20	Patient care in the department (2 patients). 1. Patient M., 60 years old. Diagnosis: Bronchial asthma persistent, severe, uncontrolled course. Exacerbation of medium severity. Respiratory failure 1st degree. This is evidenced by... Examination... Treatment... 2. Patient V., 55 years old. Diagnosis: Iron deficiency anemia, of moderate severity. This is evidenced by... Examination... Treatment... etc.	Treatment of 2 patients (Questioning, physical examination). Establishing a preliminary diagnosis. Making a diagnostic plan. Assessment the results of clinical, biochemical and instrumental tests. Prescription of the treatment.
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Student's signature

The diary was approved by the clinical base supervisor _____

The diary was checked by the university supervisor _____

Date _____

**Summarized report
of medical practice (professional training) internal medicine**

Student _____ 4th year of study
 _____ faculty, group _____
 on the clinical base

List of skills	Number skills	Score
1. Daily patients' care in the department (examination of the patient, making and proving the preliminary diagnosis, planning the investigation and treatment, working with medical documentation)	10-12	
2. Participation in the emergency medical care in case of emergencies (acute respiratory failure, severe exacerbation of bronchial asthma, biliary colic, acute liver failure, esophageal and gastrointestinal bleeding)	3-5	
3. Participation in esophagogastroduodenoscopy, chest X-ray, etc.	3 - 5	
4. Interpretation and evaluation of the results of general blood test, biochemistry, sputum analysis, pH-monitoring, etc.	10-12	
5. Determination of the group of blood	2-3	
6. Blood pressure measurement	10-12	
7. ECG recording	4-5	

8. Performing of subcutaneous, intramuscular, and intravenous injections	8-10	
9. Interpretation of the results of spirometry	1-3	
10. Assessment of the chest X-ray	5-8	
11. Assessment of the results of endoscopy (bronchoscopy, gastroduodenoscopy, colonoscopy)	2-4	
12. Assessment of the abdominal and thoracic ultrasound findings	2-4	
Total/score		

Student's signature _____

The report was approved by the university supervisor _____

Date _____

Diary
of medical practice (professional training) internal medicine

Student _____
 Faculty _____ 6th year of study _____ group _____
 Second educational level (master's) Specialty 222 Medicine
 Term of practice: from _____ 20__ till _____ 20__ .
 Location of practice: _____
 Hospital _____
 The university supervisor _____

_____ Clinical base
 supervisor _____

Student

_____ Full Name

came to the institution (hospital, enterprise, organization)

Seal of the institution « _____ » _____ 20__ .

_____ (signature) _____ (position, surname, initials of the responsible person)

left the institution (hospital, enterprise, organization)

Seal of the institution « _____ » _____ 20__ .

_____ (signature) _____ (position, surname, initials of the responsible person)

Schedule of practice

Date and time	Content of work performed (titles of work)	Note on character and performance skills
9:00-10:00	Participation in the organizational meeting and in the round of the head of the department. Working with medical documentation.	
10:00-11:00	Participation in fibroesophago-gastro-duodenoscopy/X-ray examination of chest organs, etc. Performing medical manipulations (determination of the group of blood, blood pressure measurement, ECG recording, subcutaneous, intramuscular, and intravenous injections, urinary bladder catheterization, providing cardio-pulmonary resuscitation).	Examination of the mucous membrane of the esophagus, stomach, interpretation of endoscopic examination data. Interpretation of the chest X-ray data
11:00-11:20	Break	

11:20-12:20	Patient care in the department (2 patients). 1. Patient M., 60 years old. Diagnosis: Bronchial asthma persistent, severe, uncontrolled course. Exacerbation of medium severity. Respiratory failure 1st degree. This is evidenced by... Examination... Treatment... 2. Patient V., 55 years old. Diagnosis: Iron deficiency anemia, of moderate severity. This is evidenced by... Examination... Treatment... etc.	Treatment of 2 patients (Questioning, physical examination). Establishing a preliminary diagnosis. Making a diagnostic plan. Assessment the results of clinical, biochemical and instrumental tests. Prescription of the treatment.
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Student's signature

The diary was approved by the clinical base supervisor _____

The diary was checked by the university supervisor _____

Date _____

Appendix 4

Example

Summarized report of medical practice (professional training) internal medicine

Student _____ 6th year of study

_____ faculty, group _____

on the clinical base _____

List of skills	Number skills	Score
1. Daily patients' care in the department (examination of the patient, making and proving the preliminary diagnosis, planning the investigation and treatment, working with medical documentation)	15-20	
2. Participation in the emergency medical care in case of emergencies (acute respiratory failure, severe exacerbation of bronchial asthma, biliary colic, acute liver failure, esophageal and gastrointestinal bleeding, hypertensive emergencies, acute coronary syndrome, acute heart failure, circulatory and respiratory arrest, paroxysmal heart rhythm disturbances, acute kidney injury)	5-8	
3. Participation in esophagogastroduodenoscopy, chest X-ray, echocardiography, etc.	5 - 8	
4. Interpretation of general analysis of blood and urine, biochemical analysis of blood, analysis of sputum, coagulation, lipid profile, etc.	15-20	
5. Determination of blood group	3-5	
6. Measurement of blood pressure and interpretation of the obtained data	15-20	
7. Registration and interpretation of ECG, Echocardiogram data	8-10	
8. Administration of intravenous injections	10-12	
9. Interpretation of the results of the study of the spirometry, esophageal and stomach pH-monitoring, etc.	3-5	

10. Interpretation of ultrasound and X-ray examination of the spine, thoracic organs and joints, abdominal organs, etc.	10-15	
11. Assessment of the results of endoscopy (bronchoscopy, gastroduodenoscopy, colonoscopy)	4-6	
12. Writing a case history	1	
Total/score		

Student's signature _____

The report was approved by the university
supervisor _____

Date _____