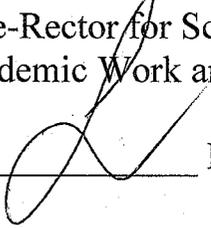


**National Pirogov Memorial Medical University, Vinnytsya
Department of Propaedeutics of Internal Medicine**

APPROVE

Higher Educational Institution
Vice-Rector for Scientific and
Academic Work and International Links


Inna ANDRUSHKO

AGREED

Head of the Department of
Propaedeutics of Internal Medicine,
professor


Nataliia PENTIUK
« 30 » 08 20 24 year

SYLLABUS OF ACADEMIC DISCIPLINE CC 22

PROPAEDEUTICS OF INTERNAL MEDICINE

Speciality	222 Medicine
Educational level	The second (master's) level
Educational programme	EPP «Medicine», 2022
Academic year	2024-2025
Department	Propaedeutics of Internal Medicine
Contact information	prop.intmed@vnmue.edu.ua 96, Khmelnytske hw, 21029, Vinnytsia, Ukraine (CNCE "Vinnytsia City Clinical Hospital #1) +38 067 622 23 07
Syllabus compilers	Prof. Nataliia Pentiuk Assoc. prof. Tetyana Tkachenko

1. Status and structure of the discipline:

Discipline status	Compulsory
Discipline code in EPP/ discipline place in EPP	CC 22, the discipline of professional training
Course/Semester	3 course / V-VI semesters
The amount of discipline (the total number of hours/number of credits ECTS)	180 hours / 6 credits ECTS
Number modules	2
Number of content modules	9
The structure of discipline	Lectures – 30 hours. Practical classes – 72 hours. Independent work – 78 hours. In general: classroom classes – 56,7%, independent extracurricular activities – 43,3%
Language of study	English
Form of study	Full-time (lectures are given remotely, in the case of “Air raid siren” practical classes are conducted in the shelter)

2. Description of the discipline

Short annotation of the course, and relevance. The program of the academic discipline "Propaedeutics of Internal Medicine" is intended for higher education institutions of the Ministry of Health of Ukraine by the requirements of the credit transfer system of the organisation of the educational process ECTS, based on a combination of learning technologies by sections and credit assessment credits - units of measurement of the student's educational load necessary for mastering the discipline or its section.

Types of educational knowledge according to the curriculum are a) lectures, b) practical classes, c) independent work of students, and d) work in a simulation center.

Students' current educational activities are monitored in practical classes by specific goals. The level of students training is determined based on monitoring the practical skills of patient examination, test results, written or oral answers to control questions, solving situational clinically-oriented problems, interpreting the results of laboratory and instrumental tests, functional tests, compiling algorithms for clinical examination of a patient with a certain nosology, carrying out differential diagnosis based on identified symptoms and syndromes.

The final control of mastering the discipline is carried out after completion as a differentiated credit according to the curriculum for the speciality 222 "Medicine".

Prerequisites – disciplines containing knowledge, skills and abilities necessary for mastering the studied discipline.

According to the curriculum, the study of the discipline "propaedeutics of internal medicine" is carried out in the V-VI semesters, when the student has acquired relevant knowledge in the basic disciplines:

– medical biology (basics of medical genetics, manifestations of the basic laws of inheritance, medical and biological bases of parasitology);

– medical and biological physics (the genesis of ECG; the physical basis of electrical stimulation of tissues and organs, pulse currents and their characteristics, pacemakers; the physical basis of the X-ray usage in medicine; modern methods and means of X-ray diagnostics; Computed Tomography; use of radionuclides; radioisotope images of organs and tissues; emission computed tomography);

– human anatomy (organ-specific features of the mucous membrane structure of tubular organs; general patterns of the muscular membrane of the wall of tubular organs structure, topography, structure, functions of the gastrointestinal tract, structure of cartilage, joints, ligaments, laryngeal muscles; glottis: boundaries, formation, parts, trachea: and bronchi: topography, wall structure, lungs: topography, external structure, lungs: particles, broncho-pulmonary segments, lobes, their structure, lung X-ray, bronchial tree: branching, wall structure, functions, alveolar tree: branching, wall structure, acinus: definition, structure, functions, pleura: general characteristics, functions, pleural cavity, its sinuses, kidneys: structure on frontal autopsy, structural and functional unit of the kidney, its components, ways of excretion of urine (components of excretory pathways of the kidney, renal sinus (sinus), its bridge, X-ray anatomy of the kidney, heart: topography, position options, shape options, external structure, chambers, projection of the heart on the anterior wall of the chest; areas of auscultation of heart valves; systemic (larger) circulation; respiratory (lesser) circulation; vessels of the torso);

– physiology (structural and functional organization of the autonomic nervous system and its role in the regulation of visceral functions; volumes that are part of the VC and their determination using a spirometer; dynamic indicators of pulmonary ventilation, methods for their determination, the volumes that are included to the composition of VC and their definition by spirogram, the sequence and duration of periods and phases of the cardiac cycle, characteristics of S1, S2 (their origin, components, duration), mechanical manifestations of heart activity: heartbeat (its properties and features in children), pulse (its properties), electrocardiogram recording technique, types of ECG leads (standard, amplified, chest), genesis and parameters of ECG components, ECG analysis, Frank-Starling Law, reflexes (Cyon-Ludwig, Goering-Ivanov, Bainbridge, Aschner-Dagnini, Goltz), factors that determine the magnitude of blood pressure, arterial and venous pulse, components, their origin, microcirculation and its role in the mechanism exchange of fluid and various substances between blood and tissues; types of digestion depending on the location of hydrolysis, hormonal regulation of the gastrointestinal tract, enzymes of gastric juice, the role of hydrochloric acid in the digestion of nutrients, gastric and intestinal phases of gastric juice secretion, the role of gastric mucus, types of gastric contractions, exocrine activity of the pancreas and the properties of pancreatic juice, phases of pancreatic juice secretion, regulation of bile formation and secretion in duodenum,

functional characteristics of secretory processes in the small intestine, cavity and membrane hydrolysis of nutrients in different parts of the small intestine, colon function, absorption in the gastrointestinal tract proteins, water, salts, carbohydrates, fats; the small and large intestine motility; the role of the kidneys in the processes of excretion, maintenance of homeostasis, mechanisms of urination);

– biological and bioorganic chemistry (properties of enzymes, regulation of enzymatic activity, cofactors and qualitative reactions to vitamins, general patterns of metabolism, metabolism of carbohydrates and fats, common pathways of amino acid catabolism, nucleotide metabolism, molecular biology and genetics, molecular peripheral endocrine glands, the effect of insulin and adrenaline on blood glucose, water- and fat-soluble vitamins, blood chemistry in normal and pathology, proteins of the acute phase of inflammation, pigment metabolism, liver detoxification function, hormonal regulation of water-mineral-metabolic properties, urine);

– histology and embryology (dependence of vascular wall structure on hemodynamic, arteriole-venular anastomosis, organ features of veins, the structure of heart wall, its membranes, conducting system of the heart, structure and functions of bone marrow, lymph nodes, features of the structure of mucous membrane of the different gastrointestinal tract, histophysiology of secretory, morpho-functional characteristics of the liver, gallbladder, pancreas, the structure of the alveoli, the cellular composition of its lining, the renal filtration barrier, cortex and juxtamedullary blood supply systems);

– microbiology, virology and immunology (main periods of infectious disease; carrier of the pathogen, its detection; forms of infection: acute, chronic, latent, persistent, recurrence, reinfection, superinfection; pneumonia streptococci: morphology, pathogenicity, pathogenesis, immunology pneumococcal infections, the microbiota of the human body, its role in normal physiological processes and pathology, the characteristics of diseases caused by opportunistic pathogens);

– pathophysiology (types and pathogenesis of allergic reactions, the definition of inflammation, local and general signs, main components of inflammation, mechanisms of development; dysfunction in hypoxia; types, mechanisms of development, effects on the body of hyper- and hypoglycaemia, types and pathogenesis of oedema; anaemia, definition, classification, heart failure, definition, types, indicators of hemodynamic, arterial hyper- and hypotension; types, aetiology, the pathogenesis of shock, collapse; types, aetiology, pathogenesis, pathological types of respiration and dyspnoea; types, causes, syndromes of hyper- and hypoacidity; jaundice, acholic syndrome, liver failure; types, causes, mechanisms of oliguria, polyuria, proteinuria, haematuria development, mechanisms of nephritic, nephrotic syndromes, renal failure, kidney hypo- and hyperfunction, pain, types, mechanisms of pain);

– pathomorphology (clinical and morphological forms of atherosclerosis, organ lesions in atherosclerosis, morphology of myocardial infarction, chronic ischemic disease, morphological changes in blood vessels, heart in hypertension, morphology of joint manifestations, morphological characteristics of bronchial diseases, lungs).

The purpose of the course and its significance for professional activities.

The purpose of teaching the discipline "Propaedeutics of Internal Medicine" is to form basic clinical reasoning and to acquire professional competencies in the patient examination, interpretation of obtained data and evaluation of the main manifestations of internal organ diseases in compliance with medical ethics and deontology.

The main tasks of studying the discipline "Propaedeutics of Internal Medicine" are:

- to master the theoretical knowledge necessary to detect human diseases,
- to gain the practical skills and methods of physical and laboratory-instrumental examination of patients,
- to master the general methodical approaches of patient clinical examination,
- to diagnose certain internal human diseases with their typical manifestations,
- to form students' moral-ethical and deontological qualities in professional communication with patients

Postrequisites – disciplines, the study of which requires knowledge, abilities and skills acquired after completing the study of this discipline.

Propaedeutics of Internal Medicine is forming the basis for gaining skills in the following clinical disciplines - internal medicine, general practice (family medicine), medical psychology, infectious diseases, oncology, anaesthesiology and intensive care, which provides "vertical" integration with these disciplines and skills knowledge of the basic methods of examination of the patient in the process of further training and professional activities.

3. Learning outcomes.

The discipline provides the acquirement of *competencies* by students:

General (GC)

- GC 1. Ability to abstract thinking, analysis and synthesis,
- GC 2. The ability to learn and to be modernly trained.
- GC 3. Ability to apply knowledge in practical situations.
- GC 4. Knowledge and understanding of the subject area and understanding of professional activity.
- GC 5. Ability to adapt and act in a new situation.
- GC 6. Ability to make reasonable decisions.
- GC 7. Ability to work in a team.
- GC 8. Ability for interpersonal interactions.
- GC 9. Ability to communicate in a foreign language.
- GC 10. Ability to use information and communication technologies.
- GC 11. Ability to search, process and analyse information from various sources.
- GC 12. Certainty and persistence in defined tasks and responsibilities.
- GC 13. Awareness of equal opportunities and gender issues.
- GC 14. The ability to realize one's rights and responsibilities as a member of society, to be aware of the values of a 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 understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle.

Professional competencies (PC)

- PC 1. Ability to collect medical information about the patient and to analyse clinical data.
- PC 2. Ability to determine the required list of laboratory and instrumental tests and to evaluate the results.
- PC 3. Ability to establish a preliminary diagnosis of the disease.
- PC 6. Ability to perform medical manipulations.
- PC 7. Ability to diagnose emergencies.
- PC 8. Ability to determine the management and provide care in emergencies.
- 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 13. Ability to carry out sanitary hygienic and preventive measures.
- PC 16. Ability to maintain medical documentation, including electronic forms.
- PC 17. The ability to assess the impact of the environment, socio-economic and biological determinants on the state of health of an individual, family, or population.
- PC 21. To convey one's knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying unambiguously.
- PC 24. To comply with ethical principles in working with patients.
- PC 25. To follow professional and academic integrity, to bear responsibility for the reliability of the obtained scientific results.

Integrative final program learning outcomes (PLO), forming of which studying of academic discipline contributes to:

PLO 1. To have a relevant knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.

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

PLO 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.

PLO 4. Highlight and identify leading clinical symptoms and syndromes (according to list 1: 4 - 8, 12, 13, 15, 17 - 22, 24, 26 - 30, 32 35, 36, 38, 40, 43, 46, 51 - 55, 59 - 61, 64, 66, 67, 70, 73); according to standard methods, using previous data of the patient's history, data of the patient's examination, information about the person, his organs and systems, establish a preliminary diagnosis of the disease (according to list 2: 1, 3, 4, 41, 44, 47, 48, 52, 55, 56, 67, 69, 73, 75, 76, 80, 82, 85, 86, 97, 98, 102, 105, 112, 114, 119, 152, 155, 166).

PLO 5. Obtain information about complaints, anamnesis morbi and vitae, evaluate the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental tests, evaluate information about the diagnosis (according to list 4: 1 - 8, 10, 13, 14 - 19, 26, 27, 29, 30 - 34, 37, 46, 48 - 50), taking into account the age of the patient.

PLO 7. Assign and analyse additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4), patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2: 1, 3, 4, 41, 44, 47, 48, 52, 55, 56, 67, 69, 73, 75, 76, 80, 82, 85, 86, 97, 98, 102, 105, 112, 114, 119, 152, 155, 166).

PLO 8. Determine the main clinical syndrome or what causes the severity of the victim's condition (according to list 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care facility, outside its borders), including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.

PLO 17. Perform medical manipulations (according to list 5: 1, 2, 4, 12, 29) in the conditions of a medical institution, at home or work based on a previous clinical diagnosis and/or parameters of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.

PLO 21. Search for the necessary information in the professional literature and databases of other sources, and analyse, evaluate and apply this information.

PLO 25. It is unambiguous to convey one's knowledge, conclusions and arguments on healthcare problems and related issues to specialists and non-specialists.

PLO 27. Communicate freely in the state language and English, both orally and in writing to discuss professional activities, research and projects.

Learning outcomes for the discipline:

As a result of studying the discipline, students will know about:

- the most important etiological and pathogenetic factors in the formation of pathological processes in the human body;
- methodical bases of clinical patient examination, patient examination schemes and writing case history;
- methodological basics of physical examination of the patient - questioning, visual inspection, palpation, percussion, auscultation;
- the most important symptoms and syndromes in the clinic of internal diseases and their semiotic interpretation;
- clinical and diagnostic interpretation of the most important laboratory and instrumental test values;
- medical Greek-Latin terminology in defining the main manifestations of diseases and its use in professional vocabulary.

As a result of studying the discipline, students will be able to:

1. Collect data on the patient's complaints, medical history, and life history (including professional history), under the conditions of a healthcare institution, its unit or at the patient's home, using the results of an interview with the patient, according to a standard patient survey scheme.

2. Under any circumstances (in a health care facility, its unit, at the patient's home, etc.), using knowledge about a person, his organs and systems, according to certain algorithms:

- collect information about the patient's general condition and appearance;
- examine the respiratory system (visual inspection, palpation, percussion and auscultation of the chest and lungs);
- examine the cardiovascular system (visual inspection and palpation of the heart and surface vessels, determination of percussive borders of the heart, auscultation of the heart and vessels);
- examine the organs of the abdominal cavity (visual inspection, superficial palpation, percussion and auscultation of the abdomen, deep palpation of the colon, stomach, liver, spleen, and kidneys);
- examine the musculoskeletal system (inspection and palpation).

3. Evaluate information about the patient's condition in the healthcare institution, its unit, applying a standard procedure, using information about a person, his organs and systems, based on the results of laboratory and instrumental tests: pleural fluid analysis, serum protein and its fractions, C-reactive protein, serum glucose, glycated haemoglobin, lipid panel, serum ferritin and iron, creatinine, blood urea, glomerular filtration rate, blood electrolytes, blood aminotransferases, total serum bilirubin and its fractions, prothrombin index, serum uric acid, alkaline phosphatase, stool elastase, calprotectin, pulmonary function test (PFT), standard ECG (in 12 leads), endoscopic examination of the bronchi, endoscopic examination of the digestive tract, echocardiography, complete blood count, urinalysis, sputum analysis, methods of instrumental visualization of abdominal organs, thoracic cavity organs, urinary system, the spine, bones and joints, pH-metry of the stomach and oesophagus.

4. To be able to identify and record the leading clinical symptom or syndrome of the disease: chest pain, bronchial obstruction syndrome, hydrothorax, pneumothorax, lung consolidation syndrome, obturation and compression atelectasis syndrome, cavity syndrome, syndrome of increased airiness of the lungs, lung failure syndrome, arterial hypertension, arterial hypotension, cardiomegaly, acute and chronic coronary insufficiency syndrome, acquired valve diseases, heart rhythm and conduction disorders, acute and chronic heart failure syndrome, abdominal pain syndrome, gastrointestinal bleeding, haemorrhagic syndrome, gastric, biliary, pancreatic dyspepsia, dysphagia, diarrhoea, jaundice, constipation, portal hypertension, maldigestion, liver failure syndrome, nephrotic syndrome, urinary syndrome, anaemic syndrome, joint syndrome, myeloid- and lymphoproliferative syndrome, hyperglycaemic and hypoglycaemic syndrome, hyperthyroidism, hypothyroidism, – by making a reasonable decision, using the previous data of the patient's history, the data of the patient's physical examination, observing the relevant ethical and legal norms.

5. To administer a laboratory and/or instrumental test to the patient by making a reasonable decision, based on the most likely syndromic diagnosis, according to standard schemes, observing the relevant ethical and legal norms.

6. To identify signs of an emergency (hypertensive crisis, acute respiratory failure, acute heart failure, acute coronary syndrome, acute bleeding, cardiac arrest, collapse, impaired consciousness, renal colic, biliary colic, acute heart rhythm disturbances) by making a reasonable decision and assessment a person's condition, under any circumstances (at home, on the street, in a healthcare facility, in its unit), using standard

methods of physical examination and possible anamnestic data, observing the relevant ethical and legal norms.

7. To perform medical manipulations (perform cardiac compressions, lung ventilation, restore airways, register a standard 12-lead ECG, measure blood pressure, oxygen saturation) in the conditions of a medical institution, observing the relevant ethical and legal norms, by adopting reasonable decision and using standard methods.

8. Under the conditions of the healthcare institution, its division, to fill out medical papers regarding the patient (outpatient/inpatient card, case history), using standard technology, based on regulatory documents.

9. To carry out preventive measures, in the conditions of a healthcare institution, its division, based on data on patients' health and the presence of environmental influences on it, using existing methods, within the limits of primary medical and sanitary care for the population, regarding: regime activities and recreation; primary prevention of diseases; prevention of bad habits; promotion of a healthy lifestyle.

10. To determine the necessary mode of stay of the patient in the conditions of the healthcare institution based on identified clinical symptoms and syndromes, using data about the person, his organs and systems, observing the relevant ethical and legal norms, by making a reasonable decision according to the existing algorithms and standard schemes.

4. Content and rationale of the discipline

MODULE №1: «Methods of patient examination, main symptoms and syndromes in case of respiratory and cardiovascular pathology» 5 content modules	V semester 90 hours / 3 credits ECTS	Lectures № 1-8 Practical classes № 1-19 Topics for self-study № 1-16
MODULE №2: «Methods of patient examination, main symptoms and syndromes in case of gastrointestinal pathology, disorders of kidneys, haematopoiesis, joints and endocrine system» 4 content modules	VI semester 90 hours / 3 credits ECTS	Lectures № 9-15 Practical classes № 20-36 Topics for self-study № 1-16

MODULE №1: Methods of patient examination, main symptoms and syndromes in case of respiratory and cardiovascular pathology

Content module 1. Methods of patient examination in case of respiratory system pathology

Topic 1. Methods of patient examination. Inquiry of the patient.

Topic 2. General visual inspection of the patient.

Topic 3. Main patient complaints in case of respiratory system pathology. General visual inspection of the patient. Visual inspection, palpation and comparative percussion of the chest.

Topic 4. Lung auscultation. Main and adventitious lung sounds.

Topic 5. Additional methods of patient examination in case of respiratory system pathology.

Content module 2. The main symptoms and syndromes in the case of respiratory system pathology

Topic 6. Main symptoms and syndromes in case of respiratory system pathology. Syndromes of lung consolidation, fluid and air accumulation in the pleural cavity, atelectasis, cavity. Symptomatology of pneumonia and pleurisy.

Topic 7. Main symptoms and syndromes in case of respiratory system pathology. Syndromes of bronchial obstruction, increased lung airiness, and respiratory failure. Symptomatology of bronchial asthma and chronic obstructive lung disease.

Topic 8. Methods of patient examination in case of respiratory system pathology. Summary class. Preparing for the OSCE exam.

Content module 3. Methods of patient examination in case of cardiovascular system pathology

Topic 9. Main patient complaints in case of cardiovascular system pathology. General visual inspection of the patient. Blood pressure and pulse assessment. Visual inspection, palpation and percussion of the precordium.

Topic 10. Heart auscultation. Heart sounds. Organic and functional heart murmurs.

Content module 4. Instrumental methods of patient examination in case of cardiovascular system pathology

Topic 11. ECG technique and evaluation. Signs of hypertrophy of heart chambers. ECG signs of coronary circulation disorders.

Topic 12. ECG signs of automatism and excite disorders.

Topic 13. ECG signs of conductivity disorders.

Topic 14. Additional methods of patient examination in case of cardiovascular system pathology.

Content module 5. The main symptoms and syndromes in the case of cardiovascular system pathology

Topic 15. Syndromes of acute and chronic coronary insufficiency.

Topic 16. Syndrome of arterial hypertension. Symptomatology of essential and secondary hypertension.

Topic 17. Main symptoms and syndromes of mitral and aortic valve diseases.

Topic 18. Syndrome of acute and chronic heart failure.

Topic 19. Methods of patient examination in case of cardiovascular system pathology. Summary class. Preparing for the OSCE exam.

MODULE 2. Methods of patient examination, main symptoms and syndromes in case of gastrointestinal pathology, disorders of kidneys, haematopoiesis, joints and endocrine system

Content module 6. Methods of patient examination in case of digestive system pathology

Topic 20. Main patient complaints in case of respiratory system pathology. General visual inspection of the patient. Visual inspection, percussion, auscultation and light palpation of abdomen. Symptom complex of ascites.

Topic 21. Deep sliding palpation of stomach, large intestine, liver and spleen.

Topic 22. Additional methods of patient examination in case of digestive system pathology.

Content module 7. The main symptoms and syndromes in the case of digestive system pathology

Topic 23. Main symptoms and syndromes in case of esophageal, gastric, and duodenal diseases. Symptomatology of reflux disease, peptic ulcer. Syndromes of dysphagia, functional dyspepsia, bleeding.

Topic 24. Main symptoms and syndromes in case of intestinal diseases. Syndromes of malabsorption, diarrhea, constipation, bleeding. Symptomatology of enteritis, colitis.

Topic 25. Main symptoms and syndromes in case of diseases of pancreas and gallbladder. Hyperenzyme syndrome, syndromes of exocrine insufficiency of pancreas, biliary dyspepsia. Symptomatology of pancreatitis, cholecystitis, gallbladder stones.

Topic 26. Main symptoms and syndromes in case of liver diseases. Syndromes of jaundice, cytolysis, cholestasis, portal hypertension, liver failure. Symptomatology of hepatitis, liver cirrhosis.

Topic 27. Methods of patient examination in case of digestive system pathology. Summary class. Preparing for the OSCE exam.

Content module 8. Methods of patient examination, main symptoms and syndromes in case of kidney pathology

Topic 28. Patient management. Writing a case history

Topic 29. Methods of patient examination in case of kidney pathology. Urinary, nephrotic, nephritic syndrome, eclampsia. Symptomatology of kidney stones.

Topic 30. Syndrome of secondary renal hypertension. Symptomatology of chronic kidney failure.

Content module 9. Methods of patient examination, main symptoms and syndromes in case of haematopoiesis, joints and endocrine system disorders

Topic 31. Methods of patient examination in case of blood disorders. Syndrome of anemia. Symptomatology of posthemorrhagic, iron-deficient, B12-folic deficient, hemolytic, aplastic anemia.

Topic 32. Hyperplastic syndrome. Symptomatology of leukemia. Hemorrhagic syndrome.

Topic 33. Methods of patient examination in case of endocrine system pathology. Symptomatology of diabetes mellitus, hyperthyroidism, hypothyroidism, adrenal insufficiency, hypercortisolism

Topic 34. Methods of patient examination in case of endocrine system pathology. Joint syndrome in case of rheumatoid arthritis, spondyloarthritis, osteoarthritis, gout.

Topic 35. Patient management. Defense of case history.

Topic 36. Methods of patient examination in case of internal organ pathology. Summary class. Preparing for the OSCE exam.

Independent work.

MODULE №1: Methods of patient examination, main symptoms and syndromes in case of respiratory and cardiovascular pathology

It is working out topics that are not included in the classroom plan.

1. Preparation for practical classes. Theoretical preparation and gaining of practical skills.
2. Topographic percussion of the lungs.
3. Basic X-ray syndromes in the respiratory system pathology.
4. Main endoscopic syndromes in the respiratory system pathology.
5. Laboratory investigation of the pleural fluid and sputum.
6. Examination of the vein and capillary pulse.
7. Cardiac area palpation: heartbeat, epigastric pulsation, vessel pulsation.
8. Cardiac area percussion: absolute cardiac dullness.
9. Daily blood pressure monitoring.
10. Daily ECG monitoring (Holter monitoring).
11. Visualization diagnostic methods in cardiology: angiography, magnetic resonance imaging.
12. Laboratory evaluation of myocardial necrosis and heart failure biomarkers, lipid profile.
13. Secondary arterial hypertension.
14. Working out of practical skills during practical classes:
 - patient inquiry in case of respiratory system pathology,
 - visual inspection and palpation of the chest,
 - comparative percussion of the lungs,
 - auscultation of the lungs,
 - spirometry and peak flow test assessment,
 - patient inquiry in case of cardiovascular system pathology,
 - cardiac area percussion,
 - assessment of the pulse and blood pressure,
 - auscultation of the heart,
 - ECG analysis,
 - echocardiogram analysis,
 - analysis of exercise stress tests: cycle ergometry, treadmill test.
15. Preparation for the summary class on methods of examination of patients with respiratory pathology.
16. Preparation for the summary class on methods of examination of patients with cardiovascular pathology.

MODULE 2. Methods of patient examination, main symptoms and syndromes in case of gastrointestinal pathology, disorders of kidneys, haematopoiesis, joints and endocrine system

1. Preparation for practical classes. Theoretical preparation and gaining of practical skills.
2. Syndromes of malabsorption, maldigestion, malnutrition
3. Laboratory investigation of ascitic fluid
4. The main endoscopic syndromes in the pathology of the digestive organs
5. The main sonographic syndromes in the pathology of the digestive organs

6. The main radiological syndromes in the pathology of the digestive organs
7. Methods of *H. pylori* detection.
8. Laboratory markers of digestive organ affection and their diagnostic value.
9. Instrumental methods of examination of patients with kidney pathology.
10. Laboratory methods of carbohydrate metabolism evaluation.
11. Instrumental and laboratory methods of patient examination in case of musculoskeletal system pathology.
12. The main syndromes in the examination of bone marrow and lymph nodes.
13. Differential diagnosis of oedema.
14. Gaining practical skills during classroom classes:
 - an inquiry of the patient with the pathology of the digestive organs,
 - percussion and auscultation of the abdomen,
 - superficial palpation of the abdomen,
 - deep palpation of the stomach and intestines,
 - deep palpation of the liver,
 - deep palpation of the spleen,
 - an inquiry of the patient with kidney pathology,
 - examination of the patient with blood pathology,
 - an inquiry of the patient with the pathology of the endocrine system,
 - deep palpation of the kidneys,
 - palpation of lymph nodes,
 - palpation of the thyroid gland,
 - palpation of joints, assessment of joint function.
15. Preparation for the summary class on methods of patient examination in case of digestive organ pathology.
16. Preparation for the final class of the discipline and differential credit.

Individual tasks

Preparation of reports for participation in meetings of the student scientific society, and student scientific conferences. Scientific practical research or a review of scientific literature on current internal medicine problems, writing abstracts or articles based on the results of the work. Preparation and participation in the university and All-Ukrainian stages of the Propaedeutics of Internal Medicine Olympiad. Preparation of scientific papers for the All-Ukrainian competition of student scientific papers on propaedeutics of internal medicine. Preparation of visual teaching aids at the department (tables, audio, video, presentations, etc.).

The main directions for the student research are:

1. Modern methods of patient examination in case of diseases of the respiratory system. Diagnostic value of spirometry, radiological tests, bronchoscopy, FeNO.
2. Modern methods of patient examination in case of cardiac disease. Diagnostic value of echocardiography, radiological tests, angiography, myocardial damage and heart failure biomarkers.
3. Modern methods of patient examination in case of digestive organ diseases. Diagnostic value of liver elastometry, radiological tests, angiography, biomarkers of liver and pancreatic damage, and endoscopy.
4. Mobile medical applications for monitoring the patient's condition in Ukraine and the world.

5. Psychosomatic symptoms and syndromes in the internal medicine clinic.
6. Virtual patient: developing online modules for the initial level of clinical reasoning formation on the platform. (Moodle platform) DID-ACT: <https://did-act.instruct.eu/course/view.php?id=8>
- 6.1. What is Clinical Reasoning – An introduction
- 6.2. Health Profession Roles in Clinical Reasoning
- 6.3. Person-centered Approach to Clinical Reasoning
- 5.4. Dual Process Theory
- 6.5. Illness Scripts
- 6.6. Using the Outcome Present State Test Model
- 6.7. Collect and Prioritize Key Clinical Findings/Problems

In practical classes, students gain practical skills at the patient's bedside, make conclusions, and work with clinical cases.

The student's independent work includes preparation for practical classes and gaining practical skills, studying topics for independent work outside the classroom, analysing scientific literature and writing reviews on the given topics for individual work. Control of mastering topics of independent work outside the classroom is carried out at intermediate control classes and final control of the discipline.

Thematic plans of practical classes, independent work outside the classroom, scope and directions of individual work are published on the website of the department.

Route of obtaining materials: Department of Propaedeutics of Internal Medicine / For students / Full-time education / Medicine / 3rd course / Propaedeutics of Internal Medicine / Educational and methodical materials or via the link <https://www.vnm.edu.ua/en/department/department/49#> Access to the materials is carried out from the student's corporate account s000XXX@vnm.edu.ua

5. Forms and methods of monitoring academic performance

Current control in practical classes	Methods: testing, oral or written survey, solving of situational tasks, check-up of practical skills
Final semester control (credit) at the end of 5 semester	Methods: full learning of certain chapter of the discipline (5 semester), which is evidenced by the current control of each practical class, the knowledge of lecture course material and the absence of academic debt
Final control of the discipline – differential credit	Methods: oral survey, practical skills demonstration
Learning success diagnostic tools	Theoretical questions, clinically oriented situational tasks, laboratory and instrumental test results, practical skills demonstration

A list of questions for differential credit

1. Perform an inquiry of the patient. Conclude the obtained anamnestic data.
2. Perform a general visual inspection of the patient. Identify leading symptoms.
3. Palpate the lymph nodes, and evaluate the results.
4. Perform a static and dynamic visual inspection of the chest. Identify the main symptoms.
5. Palpate the patient's chest. Identify the main symptoms.
6. Perform comparative lung percussion. Identify the main symptoms.
7. Perform the lung auscultation. Identify the main symptoms.
8. Analyze the spirometry data. Identify the main symptoms.
9. Perform a visual inspection of the patient's precordium. Identify the main symptoms.
10. Assess an arterial pulse. Identify the main symptoms.
11. Measure the blood pressure on the upper and lower extremities, and evaluate the obtained data.
12. Palpate the precordium. Identify the main symptoms.
13. Determine the relative cardiac dullness borders. Identify the main symptoms.
14. Perform auscultation of the heart. Identify the main symptoms.
15. Analyze the patient's ECG. Identify the main syndromes.
16. Analyze echocardiography data. Identify the main symptoms.
17. Perform a visual inspection of the abdomen. Identify the main symptoms.
18. Perform a superficial palpation of the abdomen. Identify the main symptoms.
19. Perform a percussion and an auscultation of the abdomen. Identify the main symptoms.
20. Perform a deep palpation of the large intestine, stomach, liver, spleen, pancreas, and kidneys. Identify the main symptoms.
21. Determine the presence of fluid in the abdominal cavity, and make a clinical assessment.
22. Analyze the data of the abdominal ultrasound. Identify the main symptoms.
23. Analyze the result of urinalysis, Zimnitsky and Nechiporenko urine tests. Identify the main symptoms.
24. Analyze a complete blood count. Identify the main symptoms.
25. Palpate the thyroid gland. Identify the main symptoms.
26. Perform a visual inspection, and palpation and assess the joint function. Identify the main symptoms.
27. Analyze the data of a chemistry test (total protein and protein fractions, bilirubin, transaminases, amylase, creatinine, C-reactive protein, glucose, troponins, lipids). Interpret the results.
28. Perform questioning, and physical examination of the patient, and analyze the data of additional tests. Identify the main symptoms and syndromes of internal organ diseases.

A list of mandatory practical skills, without mastering which the student will not be able to get a positive score

1. Perform an inquiry of a patient. Conclude the obtained anamnestic data.
2. Perform a general visual inspection of the patient. Identify leading symptoms.
3. Perform comparative lung percussion. Identify the main symptoms.
4. Perform the lung auscultation. Identify the main symptoms.
5. Assess an arterial pulse. Identify the main symptoms.
6. Measure the blood pressure and evaluate the obtained data.
7. Perform auscultation of the heart. Identify the main symptoms.
8. Analyze the patient's ECG. Identify the main syndromes.
9. Perform a superficial palpation of the abdomen. Identify the main symptoms.
10. Perform a deep palpation of the large intestine and liver. Identify the main symptoms.
11. Analyze the result of urinalysis.
12. Analyze a complete blood count. Identify the main symptoms.
13. Analyze the data of a chemistry test (total protein and protein fractions, bilirubin, transaminases, amylase, creatinine, C-reactive protein, glucose, troponins, lipids). Interpret the results.

Assessment criteria

Knowledge assessment is carried out by the Regulations of the Academic process at National Pirogov Memorial Medical University (link <https://www.vnmu.edu.ua/general-regulations>)

Continuous assessment	On a four-point system of traditional assessments: 5 «excellent», 4 «good», 3 «satisfactory», 2 «unsatisfactory»
Pass–fail credit	On a 200-point scale (the arithmetic average grade for the semester is converted into points) Credited: 122 to 200 points Not credited: less than 122 points (See Grading Scale)
Final control of the discipline	The sum of points for pre-examination testing (12-20 points) and oral questioning (38-60 points) Final exam grade: 71-80 points – "excellent" 61-70 points – "good" 50-60 points – "satisfactory" Less than 50 points – "unsatisfactory" / did not pass
Discipline assessments:	Current academic assessment – from 72 to 120 points (conversion of the average traditional assessment of practical class on a 120-point scale): 60% of the grade for the discipline Final control – from 50 to 80 points: 40% of the grade for the discipline Individual work – from 2 to 12 points From 123 to 200 points in total.

Learning success diagnostic tools	Theoretical questions, clinically oriented situational tasks, laboratory and instrumental test results, practical skills demonstration
-----------------------------------	--

Discipline Score Scale: National and ECTS

The sum of grades for all types of educational activities	Score ECTS	Score on a national scale	
		For exam, course project (work), practice	for credit test
180-200	A	excellent	credited
170-179,99	B	good	
160-169,99	C		
141-159,99	D	satisfactory	
122-140,99	E		
0-121,99	FX	unsatisfactory with the possibility of reassembly	is not credited with the possibility of reassembling
0-121,99	F	unsatisfactory with a mandatory reexamination of discipline	is not credited with a mandatory reexamination of discipline

Criteria for Student Knowledge Assessment

Assessment of oral / written response during the current assessment

Score «**excellent**»

Score «**good**»

Score «**satisfactory**»

Score «**unsatisfactory**».

Assessment of practical skills during the current assessment

Score «**excellent**»

Score «**good**»

Score «**satisfactory**»

Score «**unsatisfactory**».

Assessment of testing during the current assessment

Score «**excellent**»

Score «**good**»

Score «**satisfactory**»

Score «**unsatisfactory**».

The grade "**excellent**" is awarded to a student who, during the test control, gives no more than 10% of incorrect answers (the range of correct answers is 90-100%) and provides correct answers to all clinically oriented test tasks.

A grade of "**good**" is assigned to a student who makes no more than 20% mistakes during the test control (the number of correct answers is 80-89%) and provides correct answers to the most clinically oriented test tasks.

A grade of "**satisfactory**" is assigned to a student who makes mistakes in no more than 40% of test tasks (the range of correct answers is 60.5-79%) and provides correct answers to some clinically oriented test tasks.

An "**unsatisfactory**" grade is assigned to a student who correctly solves less than 60% of the test tasks during the test survey and cannot provide correct answers to clinically oriented test tasks.

Assessment of the student's independent work

The assessment of the student's independent work is carried out during the current and final control of mastering the topics of the corresponding module or discipline based on the assessment of practical skills demonstration, an oral answer to a theoretical question, testing or solving situational tasks, by the topics for independent work.

Assessment of intermediate control (credit)

Intermediate control is credited if the student has mastered a certain section of the discipline in full, as evidenced by the current evaluation of each practical lesson. For the evaluation of the intermediate control, the average arithmetical traditional grade for the semester is calculated.

Assessment of the oral answer during the final control (differential credit).

Score «**excellent**»

Score «**good**»

Score «**satisfactory**»

Score «**unsatisfactory**».

Assessment of practical skills performance

The grade "**excellent**" is awarded to a student who knows the course and order of practical skills, demonstrates the correct performance of the necessary practical skills, and accurately formulates generalizations and conclusions.

A grade of "**good**" is assigned to a student who has inaccuracies in the performance of a practical skill, but can independently identify the mistakes made and can demonstrate the performance of the practical skill as a whole.

A grade of "**satisfactory**" is assigned to a student who knows the basics of a practical task, but experiences difficulties in performing it, cannot demonstrate a complete and correct order of practical skills, and cannot fully interpret the results of the performed examination.

An "**unsatisfactory**" grade is assigned to a student who cannot demonstrate the performance of a practical skill.

Assessment of student's individual work

The calculation of individual points is carried out based on the Regulation of the Academic process at National Pirogov Memorial Medical University (link <https://www.vnmu.edu.ua/general-regulations>).

12 points – added to the assessment of the discipline for a student who won a prize (I-III) at the Ukrainian competition of student research reports or a prize at the interuniversity/international scientific conference with the published work;

10 points – are added to the assessment of the discipline for a student who won a prize (I-III) at the intra-university student scientific conference with the availability of printed work;

8 points – added to the assessment of the discipline for a student who participated in the interuniversity/international competitions in the discipline with the published work;

6 points – added to the assessment of the discipline for a student who participated in the intra-university student scientific conference with the published work;

4 points – are added to the assessment of the discipline for a student who actively participated in the student scientific group;

2 points – are added to the assessment of the discipline for a student who has produced materials for audio-visual or other visual support for teaching the discipline (taking into account the volume and importance of the work performed, tables, audio, video, presentations, etc.).

7. Policy of discipline/course

The student has the right to receive high-quality educational services, access to contemporary scientific and educational information, qualified tutoring during the study of discipline and mastering practical skills. The policy of the department during the providing of educational services is student-centred, based on normative documents of the Ministry of Education and the Ministry of Health of Ukraine, the Statute of the University and the Procedure for the Providing of Educational Services regulated by the main principles of the organization of the educational process in National Pirogov Memorial Medical University and the principles of academic integrity (<https://www.vnmuedu.ua/general-regulations>).

Adherence to the rules of VNMU, and safety techniques in practical classes.

Instruction on safety techniques and behaviour during the "Air raid siren" alarm is given by the teacher at the first practical class and the beginning of each class.

Requirements for preparation for practical classes.

The student should come on time and be prepared theoretically for a practical class. A student who is more than 10 minutes late is not allowed to attend the practical class and must rework it in the prescribed manner. A student should come to class on time, without delay. A student who is more than 10 minutes late is not allowed to the practical class and must work it in the prescribed manner. In practical classes, the student must be dressed in a work uniform (white coat, surgical cap, change shoes, face mask) and have a stethoscope. Students who do not have a work uniform are not allowed to attend practical classes. The student must follow safety rules in practical classrooms, shelters, and departments of the clinic. When discussing theoretical issues and talking with clinic personnel, students should demonstrate tolerance, courtesy and respect for their colleagues and the teacher.

Use of mobile phones and other electronic devices.

The use of mobile phones and other electronic devices during the lesson is allowed only in case of the need for a watch (calculation of respiratory rate, pulse rate or heart rate) and a calculator (ECG analysis).

Academic integrity. While studying the discipline, the student must be guided by the Code of academic integrity and corporate ethics of National Pirogov Memorial Medical University, Vinnytsya (<https://www.vnmuedu.ua/general-information/code-of-academic-integrity-and-corporate-ethics-of-national-pirogov-memorial-medical-university--vinnytsya>). If the norms of academic integrity are violated during the current and final control or when writing a case history, the student gets

"unsatisfactory" grade and must rework it out to his teacher in the prescribed manner within two weeks.

Missed classes. Missed classes should be reworked by the procedure established in the Regulations of the Academic process at National Pirogov Memorial Medical University (link <https://www.vnmu.edu.ua/general-information/regulations-on-academic-process-at-national-pirogov-memorial-medical-university--vinnytsya>) at the time determined by the schedule of reworks (published on the website of the department <https://www.vnmu.edu.ua/en/department/department/49>) to the teacher on duty or the teacher conducting the class. To rework the missed class, the student must orally answer the questions regarding the missed class topic.

The procedure for admission to the final discipline control is given in the Regulations of the Academic process at National Pirogov Memorial Medical University (link <https://www.vnmu.edu.ua/general-information/regulations-on-academic-process-at-national-pirogov-memorial-medical-university--vinnytsya>). Students who do not have missed practical classes and received an average traditional grade of at least "3" are allowed to final control.

Additional points. Individual points from the discipline (from 2 to 12) that students can receive for individual work, the scope of which is published on the website of the department in the educational and methodical materials of the discipline, the number of points is determined by the results of the individual work according to the Regulations of the Academic process at National Pirogov Memorial Medical University (link <https://www.vnmu.edu.ua/general-information/regulations-on-academic-process-at-national-pirogov-memorial-medical-university--vinnytsya>).

Conflict resolution. In case of misunderstandings and claims against the teacher due to the quality of educational services, knowledge assessment and other conflict situations, the student must first notify the teacher of his/her claims. If the conflict issue is not resolved, the student has the right to submit an appeal to the head of the department by the Regulation on consideration of Appeals by applicants for higher education at National Pirogov Memorial Medical University ([https://www.vnmu.edu.ua/ General information/Basic documents](https://www.vnmu.edu.ua/General%20information/Basic%20documents)).

Politics in conditions of mixed learning. The procedure for mixed education is regulated by the Regulations on introducing remote study elements at National Pirogov Memorial Medical University, Vinnytsya (<https://www.vnmu.edu.ua/general-information/regulations-on-introducing-remote-study-elements-at-national-pirogov-memorial-medical-university--vinnytsya>). The main training platforms for conducting practical classes are Microsoft Team, Google Meet. The procedure for conducting practical classes, reworks and consultations during remote study is published on the website of the department (<https://www.vnmu.edu.ua/en/department/department/49#>).

Feedback from teachers is via messengers (Viber, Telegram, WhatsApp) or e-mail (of the teacher's choice) during working hours.

8. Educational resources.

Educational and methodological support of the discipline is published on the website of the department (<https://www.vnmu.edu.ua/en/department/department/49#>).

Basic Literature

1. Innes J. A., Dover A. R., Fairhurst K. Macleod's Clinical Examination. 14th ed. Edinburgh: Elsevier, 2018. 383 p.
2. Kovalyova O. M., Shapovalova S. O., Nizhegorodtseva O. O. Propedeutics of Internal Medicine. 5th ed. Vinnytsia : Nova Knyha, 2020. Pt. 2: Syndromes and diseases = Синдроми та хвороби. 2020. 264 p.
3. Kovalyova O. M., Ashcheulova T. V.. Propedeutics of Internal Medicine = Пропедевтика внутрішньої медицини. 5th ed. Vinnytsia : Nova Knyha, 2020. Pt. 1: Diagnostics = Діагностика. 2020. 424 p.

Additional Literature

1. K. D. Pagana, T. J. Pagana. Mosby's Manual of Diagnostic and Laboratory Tests. 6th ed. Missouri: Elsevier, 2018. 1137 p.
2. Thomas James, Monaghan Tanya. Oxford Handbook of Clinical Examination and Practical Skills. Oxford, 2014. 772 p.
3. Ed. Lynn S. Bickley, Peter G. Szilagyi Bates'. Guide to Physical Examination and History Taking. Philadelphia, 2017. 1066 p.
4. Davidson's Principles and Practice of medicine / Stuart H. Ralston et al. 23rd ed. Edinburgh: Elsevier, 2018. 1417 p.
5. Hampton John. The ECG Made Easy. 9th ed. Edinburgh: Elsevier, 2019. 194 p.
6. Ary L. Goldberger, Zachary D. Goldberger, Alexei Shvilkin. Clinical Electrocardiography: a simplified approach. 9th ed. Philadelphia: Elsevier, 2018. 276 p.
7. M. Laposata. Laposata's Laboratory Medicine: the Diagnosis of Disease in the Clinical Laboratory. 3rd ed. New York: McGraw-Hill, 2019. 560 p.
8. Maxine A. Papadakis, Stephen J. McPhee. Current Medical Diagnosis & Treatment. 59th ed. New York, 2020. 1915 p.
9. K. D. Pagana, T. J. Pagana. Mosby's Manual of Diagnostic and Laboratory Tests. 6th ed. Missouri: Elsevier, 2018. 1137 p.

9. Electronic resources:

1. Website of the University: <http://vnmua.edu.ua>
 2. Library of the University: <http://library.vnmua.edu.ua>
 3. World Health Organisation <http://www.who.int/en/>
 4. Testing Center <https://www.testcentr.org.ua/uk/>
 5. Ministry of Health of Ukraine <https://moz.gov.ua/>
 6. Public Healthcare of Ukraine <https://phc.org.ua/kontrol-zakhvoryuvan>
 7. Website of the department:
<https://www.vnmua.edu.ua/en/department/department/49#>
 8. Dr. Najeeb Lectures
<https://www.youtube.com/channel/UCPHpx55tgrbm8FrYYCflAHw>
 9. Osmosis <https://www.youtube.com/c/osmosis/>
 10. MEDCRAM Medical Lectures explained clearly
<https://www.youtube.com/user/MEDCRAMvideos>
 11. <https://pubmed.ncbi.nlm.nih.gov/>
 12. Geeky medicine OSCE-guidelines <https://www.youtube.com/@geekymedics>
- a. <http://www.meddean.luc.edu/lumen/meded/medicine/pulmonar/pd/contents.htm>

- b. <http://meded.ucsd.edu/clinicalmed/>
 - c. <http://meded.ucsd.edu/clinicalmed/>
 - d. <http://www.meddean.luc.edu/lumen/meded/medicine/pulmonar/pd/contents.htm>
 - e. <HTTP://WWW.CARDIOLOGYSITE.COM/>
 - f. <http://www.meddean.luc.edu/lumen/meded/medicine/pulmonar/pd/contents.htm>
 - g. <http://www.blaufuss.org/>
 - h. <HTTP://MEDED.UCSD.EDU/CLINICALMED/>
13. <http://www.meddean.luc.edu/lumen/meded/medicine/pulmonar/pd/contents.htm>
14. <http://gastroresource.com/gitextbook/en/default.htm>

Timetable and distribution of groups among the teachers are published on the website of the department та розподіл груп по викладачам опублікований на веб-сторінці кафедри <https://www.vnmu.edu.ua/en/department/department/49#>

Questions for summary classes and final control of the discipline are published on the website of the department <https://www.vnmu.edu.ua/en/department/department/49#>

The syllabus of the discipline “Propaedeutics of Internal Medicine” was discussed and approved at the meeting of the Department of Propaedeutics of Internal Medicine (record #1 dated “26” August 2024).

Responsible for the academic discipline
Associated Professor



Tetyana TKACHENKO

Head of the Department of
Propaedeutics of Internal Medicine
Professor



Nataliia PENTIUK