The Department of Internal Medicine No2
The syllabus for the discipline «Internal medicine»

1. General information	
Faculty	Medical
Educational program (branch, specialty, level of higher education, form of training)	22 "HEALTH CARE", 222 medicine, the second (Magister) level of higher education, full-time education
Academic year	2023-2024
The name of discipline, code (e-mail address on the website of Danylo Halytsky Lviv National Medical University)	"INTERNAL MEDICINE" "Individual Profile Course Surgery" (SC 3.2.2.1.) https://new.meduniv.lviv.ua /kafedry/kafedra-vnutrishnoyi-medytsyny-2/
Department (name, address, phone number, E-mail)	The Department of Internal medicine No 2 1, Uzhhorodska Street, Lviv kaf_internalmed_2@meduniv.lviv.ua
The Head of the department (contact E-mail address)	Associate Professor Komarytsya O.Y. komar_or@ukr.net
Year of study (the year of study the discipline)	Sixth
Semester (the semesters of study the discipline)	XI/XII
Type of discipline (mandatory / optional)	Mandatory
Teachers (names, surnames, scientific degrees and titles of teachers who teach the discipline, contact E-mail address)	Oksana Slaba, MD, PhD, Assistant Professor oksanaslaba24@gmail.com ; Anzhelika Filipyuk, MD, PhD, Associate Professor filipyuk_a@ukr.net ; Oleksandra Tomashevska, Doctor of Medical Science, Professor
Erasmus yes/no (availability of discipline for students within the program Erasmus+)	Yes
Person responsible for the syllabus (person, to whom comments about the syllabus may be addressed, contact E-mail)	Associate Professor Komarytsya O.Y. komar_or@ukr.net Professor Radchenko O.M. olradchenko@gmail.com
Number of ECTS credits	8.0
Number of hours (lectures / practical classes / individual work of students)	0/120/120
Language of teaching	Ukrainian, English
Information about consultations	Individual or group according to student's request
Address, telephone, work regulations of the clinical base, office… (if necessary)	Clinical base Non-profit Municipal Enterprise "The 1st City Clinical Hospital named after Prince Lev" 1, Uzhhorodska Street, Lviv, 79019, Phone number 260-09-13

2. Short summary to the course

During the 6th year of study the programme of "Internal Medicine" covers the study of the main etiologist, pathogenic mechanisms, prevalence, clinical presentation, diagnosis and treatment of internal diseases, particular gastrointestinal, respiratory, cardiovascular, renal, haematological and rheumatic diseases. The main emphasis is to consolidate the essentials of clinical examination of the patient, particularly recognition of the main symptoms and syndromes of internal diseases, diagnostic approach to their assessment, the methodology of physical examination of the patient with syndromic assessment of the obtained results; interpretation of the results obtained after additional tests (e.g., laboratory tests, functional tests, imaging studies, etc.). Another important goals are improvement of the skills of differential diagnosis, using principles of syndromes and nosology, and enhancement of knowledge about the main principles of treatment, long-term management, and prophylaxis of internal diseases.

3. The purpose and objectives of the course

The purpose of study the discipline "Internal Medicine" 6 year is to form the ability to apply the acquired knowledge, skills, abilities and understanding to solve typical tasks of the doctor in the field of health care, the scope of which was provided by the educational qualification characteristics (EQC) and the educational study program (ESP) for training of a specialist (doctor) of internal medicine. The description of goals was formulated through skills in the form of target tasks/actions by certain lists of syndromes and symptoms of diseases, emergencies and diseases, requiring specific management, additional tests, and medical manipulations.

Objectives (tasks)

- To determine the etiological factors and pathogenic mechanisms of common internal diseases
- To analyse typical clinical presentation of common internal diseases
- To identify atypical presentations and complications of common internal diseases
- To make differential diagnosis by the syndrome and nosology, substantiate and formulate a preliminary diagnosis
- To determine management of patient with appropriate recommendations regarding activity, diet, pharmacotherapy, rehabilitation
- To compose examination plan for a patient and to interpret the obtained results of laboratory tests, imaging and functional studies
- To assess the prognosis and ability to work
- To recognize emergency conditions and provide appropriate medical care and management
- Plan primary and secondary prevention of common internal diseases
- To perform medical manipulations
- To follow ethical and deontological principles of a medical specialist and the principles of professional subordination

4. Prerequisites of the course

The information about disciplines, basic knowledge and learning outcomes necessary for (enrolled) students for successful study and mastering of competencies in this discipline.

Basic disciplines: human anatomy, histology, cytology and embryology, medical biology, medical and biological physics, bioorganic and biological chemistry, pathomorphology, physiology, pathophysiology, microbiology, virology and immunology, pharmacology, clinical pharmacology, radiology and radiation medicine, propaedeutic of internal medicine.

1. Anatomical features of the cardiovascular and pulmonary systems, small and large circulatory system, the structure of the vascular wall, nephron, kidneys, urinary tract, adrenal glands and other endocrine glands; features of blood supply to the heart; myocardial innervation; structure of sympathetic and parasympathetic nervous systems; the leading system of the heart. Anatomical structure of the human skeleton, joints, articular surface, synovial membrane. Location and projection of the heart, cardiac valves. Topography of vessels, nerves, bones, muscles, and joints. Location of the kidneys, ureters, bladder relative to other organs of the abdominal cavity. Histological structure of the heart (pericardium, myocardium,

endocardium), arterial and venous walls. Juxtaglomerular apparatus of the kidneys, histological structure of endocrine glands. Morphological structure of connective tissue. Histological structure of bone, periosteum, cartilage, synovial membrane.

2. Mechanisms of blood pressure regulation. Phases of the cardiac cycle. Mechanisms of formation, types of tones, heart murmurs. Functions of the sympathetic and parasympathetic nervous systems. Functions of the respiratory system, heart and its conduction system, arteries and veins. Features of the blood coagulation system. Physiological features of connective tissue. Function of joints, physiological age features of structure of bones and joints. Secretory, excretory functions of the kidneys, mechanism of formation of primary and secondary urine, mechanisms of urination. CBC and urinalysis in healthy individuals and in patients with cardiovascular, rheumatic and renal diseases. Diagnostic value of blood biochemistry, reference ranges of most commonly used biochemical parameters and their reference ranges in adults of different age. Calculation of glomerular filtration rate
3. The structure of atherosclerotic plaque; morphological substrate of atherosclerosis. Macroscopic and microscopic changes in the case of acute coronary artery occlusion of atherosclerotic origin. Atherosclerotic changes in coronary arteries, ischemic changes in the myocardium. Pathological and anatomical features of pulmonary embolism, acute and chronic pulmonary heart. Cellular changes in cardiac valves due to infection and changes in pericardium due to inflammatory processes of various aetiology. Cellular changes in the myocardium due to inflammatory processes. Myocardial morphology in case of organic damage of the heart. Morphological changes in connective tissue due to specific and nonspecific inflammation. Anomalies of bone formation. Pathological and anatomical features of gout. Pathological features of ankylosing spondylitis and reactive arthritis. Pathological features of renal amyloidosis and glomerulonephritis. Pathological features of pyelonephritis, tubulointerstitial nephritis. Pathological changes of the kidneys in the case of primary glomerular lesions. Mechanisms of hypertension and hypotension, functional disorders of the nervous system and endocrine system. The main causes of endothelial damage; risk factors for atherosclerosis; cholesterol theory of atherosclerosis. The mechanism of ischemic and necrotic changes in the myocardium. Mechanisms of dysfunction of the myocardium, coronary vessels and conduction system of the heart. The mechanism of hemodynamic disorders in the case of infectious endocarditis. The mechanism of hemodynamic disorders in case of myocarditis and pericarditis. Impaired conduction of the heart. Mechanisms of acute and chronic heart failure. Mechanisms of coagulation disorders. Mechanisms of autoimmune diseases. Causes and mechanisms of connective tissue dysfunction. Lesions of the musculoskeletal system due to genetic defects, as well as the negative impact of environmental and intrinsic factors. Causes and pathologic mechanisms in osteoarthritis. Causes and pathologic mechanisms in gout. Causes and pathologic mechanisms in rheumatoid arthritis and reactive arthritis. Pathological and anatomical features of renal amyloidosis and glomerulonephritis. Causes and mechanisms of kidney disease, disorders of water-electrolyte balance, protein and lipid metabolism. Causes and pathogenic mechanisms of chronic kidney disease, and acute kidney injury.
4. Features, varieties of bacterial and viral pathogens. Taking of material, procedure, and diagnostic value of blood culture, urine culture and microbial count, synovial fluid culture, pleural fluid culture.
5. Types of immunological reactions. Methods for determining indicators of humoral and cellular immunity. Immunological methods for the diagnosis of rheumatic diseases.
6. Semiotics of arterial hypertension. Semiotics of atherosclerosis. Semiotics of acute coronary syndrome and myocardial infarction. Signs and symptoms of chronic coronary heart disease, pulmonary embolism, acute, subacute and chronic pulmonary heart, acute and chronic heart failure. Semiotics of acquired valve diseases and congenital heart defects. Signs and symptoms of acute rheumatic fever, infectious endocarditis, myocarditis, cardiomyopathies, and pericarditis. Method of electrocardiography, ECG recoding and interpretation. Semiotics cardiac arrhythmias and blocks. Symptoms and signs SLE and other systemic connective tissue diseases, systemic vasculitis. Methods of examination of joints. Symptoms and signs of rheumatoid arthritis, reactive arthritis, osteoarthritis, gout, and ankylosing spondylitis

Symptoms of kidney disease, methods of laboratory and instrumental diagnosis. Symptoms and syndromes that occur in patients with CKD and acute kidney injury.

7. Radiographic and ultrasound examination of the heart, vessels, joints, and kidneys
8. Mechanisms of action, indications, contraindications, adverse effects, pharmacokinetic and pharmacodynamics properties of the main classes of medications that are used for the treatment of cardiovascular, rheumatic and renal diseases: antihypertensive and antianginal drugs (diuretics, mineralocorticoid receptor antagonisms, ACE inhibitors, angiotensin II receptor blockers, beta-blockers, calcium channel blockers, short-acting and long-acting nitrates, vasodilators); analgesics, sedative agents; thrombolytic agents, anticoagulants, antiplatelet agents; lipid-lowering agents; anti-arrhythmic agents, atropine; antibacterial, antiviral, antifungal agents; nonsteroidal anti-inflammatory drugs, corticosteroids, cytostatic agents, disease-modifying antirheumatic agents (DMARDs), chondroprotectors, uric acid lowering agents, uroseptic agents.
9. The anatomical structure, blood supply, innervation, and functions of digestive system (i.e., oesophagus, stomach, duodenum, small and large intestine, liver, bile ducts, and pancreas), respiratory system (i.e., trachea, bronchial tree and lungs), cardiovascular system (i.e., small and large circulation, the heart, blood vessels, and lymphatic system), hematopoietic organs and immune system, kidneys and urinary tract, endocrine system (i.e., pituitary gland, thyroid gland, adrenal glands, and other endocrine organs), central nervous system, sympathetic and parasympathetic nervous system, human skeleton and joints.
10. Morphological abnormalities of the oesophagus, stomach and intestine during ulceration and inflammatory process, atrophy, intestinal metaplasia and carcinogenesis. Morphological changes in case of refluxes, oesophagitis, Barret's oesophagus, chronic gastritis of different aetiologies, peptic ulcer disease, chronic enteritis, chronic colitis, irritable bowel syndrome, inflammatory bowel diseases, chronic cholecystitis, gallbladder dyskinesia, gallstone disease, chronic hepatitis of different aetiologies, liver cirrhosis, chronic pancreatitis, and pancreatic cancer. Morphological abnormalities in the bronchial tree and lungs during inflammatory process, allergy, fibrosis, metaplasia, and carcinogenesis. Morphological changes in case of COPD, bronchial asthma, pneumonia of different aetiologies, lung emphysema, pleurisy and pleural effusion. The structure and morphology of the bone marrow and peripheral blood cells. Blast transformation of blood cells. Age-related morphological changes in the human body.
11. Morphological features of blood cells; haematopoiesis; microscopic structure of the lymph nodes, lymphopoiesis; characteristics of normal peripheral blood cell counts and normal myelocytogram; histological features of hematopoietic organs and vessels of different calibre. Histological structure of gastrointestinal system, hepatobiliary system, and pancreatic gland. Histological structure of upper airways, bronchial tree, lungs and pleura.
12. Regulation of gastric and pancreatic secretion. Mechanisms of food digestion and functions of digestive enzymes. Anti-reflux protection and defensive mechanisms in GI tract. Liver functions. Formation of bile and regulation of bile exertion. Normal bilirubin metabolism. The main exocrine and endocrine functions of the pancreatic gland. Functions of the respiratory system. Mechanisms and regulation of breathing, coughing, bronchial clearance, and alveolar gas exchange. Lung function tests and reference ranges of the main parameters of lung function. Functions of sympathetic and parasympathetic nervous system, the role of these systems in normal functioning of internal organs. Normal haematopoiesis and its regulation. Normal coagulation and fibrinolysis.
13. Pathogenic mechanisms of GORD; causes and mechanism of the dysfunction of stomach, small and large intestines, gallbladder, and bile ducts; pathogenesis and mechanisms of jaundice, portal hypertension, hepatitis, and liver cirrhosis; exocrine and endocrine dysfunctions of the pancreatic gland. Central regulation of metabolism and possible mechanisms of metabolic disorders. Pathophysiology of bronchial obstruction, reversible and irreversible bronchial obstruction; pathophysiology of pneumonia, lung abscess, gangrene of the lungs, bronchiectasis, and respiratory distress; types of hypoxia, their mechanisms, main causes and pathogenesis of the respiratory failure; parameters of lung function tests in different types of ventilatory disorders (i.e., obstructive, restrictive and mixed). Pleural effusion, causes and mechanisms of

transudate and exudate formation. Pathophysiology of different types of anaemia and hematopoietic malignancies. Causes and mechanisms of bone marrow failure. Pathophysiology of haemorrhagic syndrome, particularly platelet disorders and coagulation disorders. Causes and mechanisms of abnormal coagulation and defective fibrinolysis. Pathophysiology of aging, obesity, and obesity-related comorbidities.

14. Diagnostic value of blood biochemistry, reference ranges of most commonly used biochemical parameters and their reference ranges in adults of different age. Methods of clinical and laboratory evaluation of oxygen balance. Metabolism and functions of folic acid, vitamin B12, and iron in the body. Haemoglobin structure and function. The main nutrients and microelements, their metabolism and role in the body. Metabolic functions of the liver. The role of enzymes in human body. The main biochemical and metabolic processes during digestion and gas exchange. Intracellular metabolic processes for tissue oxygen supply and energy synthesis.
15. Properties of pathogens that are etiological factors of pneumonia, pleural effusion, infectious exacerbation of COPD, chronic gastritis, peptic ulcer, hepatitis, enteritis, colitis, and bone marrow disorders. The normal composition of gut microflora and peculiarities of microbiota composition in different age groups; determination of the intestinal dysbiosis.
16. Types of immunological and allergic reactions, mechanisms of anaphylaxis. Methods for determining indicators of humoral and cellular immunity. Immunological methods for diagnosing diseases of the digestive system, respiratory system, and blood disorders.
17. Structure of the provision of health care to the population for the proper use of the prevention and treatment health care resources.
18. Semiotics of respiratory, digestive and blood disorders. Possible signs, symptoms and clinical syndromes in patients with gastrointestinal, hepatobiliary, pancreatic, respiratory and hematopoietic disorders. Ability to take medical history, to identify the specific complaints, to estimate vital signs, to perform physical examination of patients with gastrointestinal, hepatobiliary, pancreatic, respiratory and hematopoietic disorders, and to identify leading syndromes. To be able to perform the main functional investigations (e.g., lung function tests, computer spirography, pulse oximetry, electrocardiography etc.) and interpret the obtained results. To be able to interpret the results of the main laboratory tests, imaging and endoscopic studies (e.g., chest radiography, lung and abdominal ultrasonography, abdominal radiography with contrast, upper GI endoscopy and colonoscopy).
19. Radiographic abnormalities in lung emphysema, COPD, pneumonia, lung abscess, pneumothorax, pleural effusion, multiple myeloma, haemophiliac haemarthrosis, peptic ulcer disease, inflammatory bowel disease, gallstone disease. Diagnostic value and indications for contrast-enhanced radiographic studies, interpretation of the obtained results.
20. Pharmacokinetics, mechanisms of action, indications, contraindications, possible adverse effects, precautions, and drug interactions for the following classes of medications: antacids, proton pump inhibitors, H_2-receptor blockers, prokinetic agents, anticholinergics, antispasmodics, analgesics, antidiarrheals, laxatives, immunesuppressants (i.e., corticosteroids, cytotoxic agents, biological agents), antibacterial and antiviral medications, probiotics, enterosorbents, hepatoprotectors, pancreatic and digestive enzymes, bronchodilators (i.e., $beta_2$-agonists, long-acting muscarinic antagonists, methylxanthines), leukotriene receptor antagonists, mucolytic agents, supplements (i.e., iron, vitamin B_{12}, folic acid), haemostatic and thrombolytic agents, non-steroidal anti-inflammatory agents.

5. Program learning outcomes

The list of learning outcomes

Learning outcome code	The content of the learning outcome	Reference to the competence matrix code
Kn-1	To know anatomy, physiology of internal organs and systems, skin, skeleton, connective tissue, and blood	PLO-1-5
Kn-2	To know pathomorphology and pathophysiology of common internal diseases	PLO-1-5

Kn-3	To know the biochemistry of major metabolic processes, mechanisms of action of the main classes of medications	PLO-4,8
Kn-4	To know characteristics of the pathogens that may cause internal diseases and the basics of epidemiology	PLO-1-4
Kn-5	To know the methods of evaluation of integrated health indicators; environmental factors; system of preventive measures; socioeconomic and biological determinants of health, methods for doctor's activity assessment	PLO-9-17
Sk-1	To interview complaints and medical history, to perform physical examination	PLO-1
Sk-2	To evaluate obtained results of additional tests	PLO-2
Sk-3	To perform basic medical manipulations	PLO-7,9
Co-1	To highlight the leading symptoms and syndromes. To diagnose the disease. To plan necessary additional tests. To make differential diagnosis.	PLO-3-5,7,10
Co-2	To determine diet / plan of nutrition, to plan preventive strategies and tactics.	PLO-3-5
Co-3	To administer treatment and to determine its duration.	PLO-6-8
Co-4	To diagnose emergencies and to determine the tactics of emergent medical care.	PLO-7-9
Co-5	To determine health indicators; environmental factors; preventive measures; determinants of health, efficiency of doctor's activity and quality of medical care	PLO-9-17
AR-1	To organize the work of medical staff; to form rational medical routes of patients; to interact with colleagues, organizations and institutions.	PLO-17-21
AR-2	To guide by rights, freedoms and responsibilities. To improve professional level. To adhere to the requirements of ethics, bioethics and deontology.	PLO-17-21
AR-3	To form the purposes and structure of personal activity. To adhere to a healthy lifestyle and self-control.	PLO-17-21

6. The format and the scope of the course

The format of the course (full-time or distance learning)	Full-time	
Type of training sessions	Number of hours	Number of groups
lectures (L)	0	2
practical classes (P)	120	
seminars	0	
individual work of students (IWS)	120	

7. Topics and content of the course

Study code	Topic	Learning content	Learning outcome code	Teachers
P-1	Principles of patient management. Management of patients with arterial hypertension	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-2	Management of patients with symptomatic arterial hypertension	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-3	Management of patients arterial hypotension and syncope	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-4	Management of patients with cardiac arrhythmias	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-5	Management of patients with heart blocks	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-6	Management of patients with chest pain, stable and unstable angina, silent myocardial ischemia	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-7	Management of patients with acute myocardial infarction	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-8	Management of patients with cardiomegaly, heart murmurs or acrocyanosis	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule

P-9	Management of patients with heart failure	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-10	Management of patients with arthralgia/myalgia, arthritis, acute joint or back pain	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-11	Management of patients with haemorrhagic vasculitis or systemic rheumatic diseases	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-12	Management of patients with dyspeptic syndrome, chronic diarrhoea or constipation	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-13	Management of patients with jaundice, hepatosplenomegaly, ascites, portal hypertension, hepatic encephalopathy	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-14	Management of patients with bronchial obstruction or chronic cough	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-15	Management of patients with infiltrative lung changes, pneumonia (community-acquired, hospital-acquired), ARDS, severe COVID-19, or pleural effusion	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-16	Management of patients with haemoptysis, lung abscess, asphyxia or respiratory failure	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-17	Management of patients with fever of unknown aetiology	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-18	Management of patients with abnormal urinalysis, nephrotic syndrome or oedema	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-19	Management of patients with hepatic failure or renal failure	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
P-20	Management of patients with anaemia, management of severe anaemia	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-1-21	According to the schedule
IWS-1	Writing home self-training task on the topic “Principles of patient management. Management of patients with arterial hypertension”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-2	Writing home self-training task on the topic “Management of patients with symptomatic arterial hypertension”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-3	Writing home self-training task on the topic “Management of patients arterial hypotension and syncope”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-4	Writing home self-training task on the topic “Management of patients with cardiac arrhythmias”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-5	Writing home self-training task on the topic “Management of patients with heart blocks”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-6	Writing home self-training task on the topic “Management of patients with chest pain, stable and unstable angina or silent myocardial ischemia”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-7	Writing home self-training task on the topic :Management of patients with acute myocardial infarction”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-8	Writing home self-training task on the topic “Management of patients with cardiomegaly, heart murmurs or acrocyanosis”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-9	Writing home self-training task on the topic “Management of patients with heart failure”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-10	Writing home self-training task on the topic “Management of patients with arthralgia/myalgia, arthritis, acute joint or back pain”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-11	Writing home self-training task on the topic “Management of patients with haemorrhagic vasculitis or systemic rheumatic diseases”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-12	Writing home self-training task on the topic “Management of patients with dyspepsia, dysphagia, heartburn, chronic diarrhoea or constipation”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-13	Writing home self-training task on the topic “Management of patients with jaundice, hepatosplenomegaly, ascites, portal hypertension, hepatic encephalopathy”	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-	Writing home self-training task on the topic “Management of	Kn-1-5, Sk-1-3, C-1-5,	PLO-2,3,11	According to

14	patients with bronchial obstruction or chronic cough"	AR-1-3		the schedule
IWS-15	Writing home self-training task on the topic "Management of patients with infiltrative lung changes, pneumonia (community-acquired, hospital-acquired), ARDS, severe COVID-19, or pleural effusion"	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-16	Writing home self-training task on the topic "Management of patients with haemoptysis, lung abscess, asphyxia or respiratory failure"	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS - 17	Writing home self-training task on the topic "Management of patients with fever of unknown aetiology"	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-18	Writing home self-training task on the topic "Management of patients with abnormal urinalysis, nephrotic syndrome or oedema"	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-19	Writing home self-training task on the topic "Management of patients with hepatic failure or renal failure"	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule
IWS-20	Writing home self-training task on the topic "Management of patients with anaemia, management of severe anaemia"	Kn-1-5, Sk-1-3, C-1-5, AR-1-3	PLO-2,3,11	According to the schedule

Interactive methods such as business games, role-playing games, and cases are used during practical classes.

The organization of classes consists of the following blocks: program and information, education and methodical, control, educational research, and auxiliary.

The program and information block is presented on the official website of the University.
The educational and methodical block includes theoretical lecture materials (available on MISA platform), which are conducted with the use of multimedia presentations. Methodical materials for students and teachers are updated every year and are available both in printed form and electronic version (on MISA platform), which is given to students for individual work at home. The software "Chest pain" and a phantom of the human torso for cardiopulmonary resuscitation are also used. Educational and practical materials also include educational DVD-films about methodology of physical examination etc., depending on the subject of classes (e.g., invasive diagnostic and therapeutic procedures in cardiology (angiography, stenting, shunting), atlases of clinical diagnosis, instrumental methods of examination etc.).
The control block contains materials for the current control of student activities (questions, MCQs, tests from *the Licensing Exam "Step-2"* base available for students on MISA platform).
The educational and research block contains topics of creative tasks, abstracts, educational and research tasks, term qualification works, etc. The department stores multimedia materials of student scientific-practical conferences of the medical faculty, which are examples and / or illustrative material for training, in addition, students have the opportunity to participate directly in procedures of echocardiography and ultrasonography of abdominal organs.
The auxiliary block is filled with video, audio, multimedia materials and electronic manuals, the materials of which can be processed on portable devices (phone, smartphone, netbook, book reader, etc.). To ensure the independent work of students, they are offered links to electronic resources that can be used.

8. Verification of learning outcomes

Current control is performed during practical classes and is aimed checking the assimilation of educational material by students. Current control is based on a MCQ-assessment of the initial level of knowledge, checking writing home self-training task, and thematic practical work during the class. Practical work include clinical cases, examination of patients, writing examination protocols with formulation of diagnosis with rationale, writing and explanation of further diagnostic tests, estimation of the results of available tests in medical records, formulation of final clinical diagnosis and explanation of differential diagnosis, and administration of treatment and preventive measures for the patient.

Rating of each practice accounts all types of work provided by the programme using a 4-point national scale. The student must receive positive rating for each practical class. The forms of assessment of current educational activities are standard, and include control of theoretical and practical training.

Learning outcome code	**Method of verifying learning outcomes** **Assessment criteria**
For example: Kn-1-5, Sk-1-3, Co-1-5, AR-1-3 Training code P-1-24, IWS-1-24	*The field defines the methods and technologies of assessment of students' knowledge, particularly, a list of all types of work that students are required to perform during practical class and the criteria for their assessment. For example, test control, protocol of patient's examination, demonstration of practical skills, etc. Each evaluation method must be described separately.* **Excellent ("5"):** 90-100% answers for format A tests (10 MCQs, single best answer of 5 given answers) are correct; correct clear, complete and logical answers for the questions about the current topic, including questions and tasks for individual work. Presence of qualitative and complete home task. A student closely links theory to practice and correctly demonstrates practical skills; able to solve clinical cases of increased complexity and to summarize the material. A student correctly conducts physical examination of thematic patient, has the necessary communication skills, and uses the principles of medical deontology. **Good ("4"):** 70-89% answers for format A tests are correct; clear and right answers for the questions about the current topic, including questions and tasks for individual work. There is a qualitative home task. A student correctly demonstrates practical skills or makes non-significant mistakes; able to solve typical clinical cases and cases of moderate complexity. A student correctly conducts physical examination of thematic patient, has the necessary practical skills, and makes no fatal mistakes during diagnosis and treatment. A student may communicate with patients and colleagues, using the principles of medical deontology. **Satisfactory ("3"):** 60-69% answers for format A tests are correct. Homework is incomplete or contains mistakes. Inadequate or incomplete answers for the questions about the current topic and individual work. A student cannot build a clear, logical answer; makes significant mistakes when answering and demonstrating practical skills; solves only easy typical clinical cases, has a minimum of necessary practical skills; performs examination and plan treatments with errors that do not threaten the patient's life; has a minimum of communication skills, uses the principles of medical deontology. **Unsatisfactory ("2"):** less than 60% answers for format A tests are correct. The home task is written very bad or is absent. A student does not know the material of the current topic, cannot answer independently and logically to additional questions, does not understand the content of the material; makes significant mistakes when answering and demonstrating practical skills; conducts examination and plan treatment with fatal consequences for a patient; has insufficient communication or verbal skills; insufficiently uses the principles of medical deontology.

The form of final control of study success

General rating system	*Participation in the work during the semester (credit) on a 200-point scale*	
Rating scales	Traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale	
Admission criteria for final control	Attendance of all practical classes with total rating ≥120 points of 200 points	
Type of final control	Methods of final control	Passing criteria
Credit	Positively estimated all practices with conversion from a 4-point scale to a 200-point scale as describe in "Criteria, rules and procedures for evaluating the results of student's learning activities"	Minimum rating 120 points; Maximum rating 200 points
Other types of control	*The 6th-year students take the Licensing Exam "Step-2" and a comprehensive practical-oriented qualification exam (CPOQE)*	

Scheme of calculation and distribution of points received by students

Assessment is one of the final stages of educational activity and determination of educational success.

Evaluation is based on the amount for the Practice of Stimulation Medicine in Internal Medicine, Surgery, Obstetrics and Gynecology, Pediatrics. The calculation of the number of points is carried out on the basis of the grades received by the student on a traditional scale during the study of the discipline by calculating the arithmetic average (AA), which is converted into points on a multi-point scale, using formula: $x = AA \cdot 200 / 5$

For convenience, a calculation table is given on a 200-point scale for disciplines ending with a credit as follows:

Scale	4-p.	200-p.	4-p.	200-p.	4-p.	200-p.	4-p.	200-p.	4-p.	200-p.	4-p.	200-p.	
	5	200	4.67	187	4.32	173	3.99	160	3.67	147	3.32	133	Less than 3 Not enough
	4.97	199	4.65	186	4.3	172	3.97	159	3.65	146	3.3	132	
	4.95	198	4.62	185	4.27	171	3.94	158	3.62	145	3.27	131	
	4.92	197	4.6	184	4.24	170	3.92	157	3.57	143	3.25	130	
	4.9	196	4.57	183	4.22	169	3.89	156	3.55	142	3.22	129	
	4.87	195	4.52	181	4.19	168	3.87	155	3.52	141	3.2	128	
	4.85	194	4.5	180	4.17	167	3.84	154	3.5	140	3.17	127	
	4.82	193	4.47	179	4.14	166	3.82	153	3.47	139	3.15	126	
	4.8	192	4.45	178	4.12	165	3.79	152	3.45	138	3.12	125	
	4.77	191	4.42	177	4.09	164	3.77	151	3.42	137	3.1	124	
	4.75	190	4.4	176	4.07	163	3.74	150	3.4	136	3.07	123	
	4.72	189	4.37	175	4.04	162	3.72	149	3.37	135	3.02	121	
	4.7	188	4.35	174	4.02	161	3.7	148	3.35	134	3	120	

Points from the discipline are independently converted to both the ECTS scale and the 4-point scale. The points of the ECTS scale are not converted into a 4-point scale and vice versa. The points of students studying in one specialty, taking into account the number of points scored in the discipline, are ranked on the ECTS scale as follows:

ECTS assessment	Statistical parameter
"A"	Best 10 % of students
"B"	Next 25 % of students
"C"	Next 30 % students
"D"	Next 25 % students
"E"	The remaining 10% of students

Discipline scores for students who successfully completed the programme are converted into a traditional 4-point scale:

A multi-point (200) scale scoring	A 4-point scale scoring
From 170 to 200 points	"5"
From 140 to 169 points	"4"
From 139 to the minimum that must be scored by student	"3"
Below the minimum that must be scored by student	"2"

The ECTS score is not converted to the traditional scale, as the ECTS scale and the four-point scale are independent. The objectivity of the assessment of students' learning activities is checked by statistical methods (correlation coefficient between ECTS assessment and assessment on a national scale).

9. Course policy

In teaching and studying the course of Internal Medicine 5th year, all teachers and students adhere to the policy of academic integrity, intolerance to violations of medical and human deontology and ethics. Examination of patients at the clinical bases of the department complies with the principles of the Helsinki Declaration of the World Medical Association on ethical principles of scientific medical research with human participation (1964, 2004, 2013) and Orders of the Ministry of Health of Ukraine No 690 (2009), No 944 (2009) and No 616 (2012).

10. Literature

Basic:

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Additional:

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Information resources

https://www.aasld.org/
https://www.diabetes.org/
http://www.eagen.org/
http://www.ers-education.org/guidelines.aspx
http://www.esmo.org/Guidelines/Haematological-Malignancies
https://ehaweb.org/organization/committees/swg-unit/scientific-working-groups/structureand-guidelines/
http://www.gastro.org/guidelines
www.ginasthma.org
http://goldcopd.org.
http://www.ifp.kiev.ua/index_ukr.htm
http://mtd.dec.gov.ua/index.php/uk/
https://www.nice.org.uk
http://www.oxfordmedicaleducation.com/
https://www.thyroid.org
https://www.ueg.eu/guidelines/
http://ukrgastro.com.ua/

11. Equipment, logistics and software equipment of the discipline / course

1. Working curriculum of the discipline.
2. Plans for practical classes and individual student's work.
3. Recommendations and guides for learning the course of internal medicine for students and tutors,

and for individual work of students (Recommendations and guides for writing of patient's medical record during the course of Internal Medicine).
4. Tests (MCQs) and clinical cases for practical classes.
5. Models, mannequins.
6. Multimedia equipment, presentations for training.
7. A training simulation centre and high-tech simulation classes are used to practice practical skills.

12. Additional information

For other information important for students that is not included into the standard description, for example, contact details of the person responsible for the educational process at the department, information about the scientific circle of the department, information about routes, information about the need to equip themselves with occupational safety; information about the place of classes; please link to the university website and page of the department: https://new.meduniv.lviv.ua/kafedry/kafedra-vnutrishnoyi-medytsyny-2/
kaf_internalmed_2@meduniv.lviv.ua
phone number of the Department - 0322601490
A person responsible for the work in the student scientific circle: Professor Dzis Y.I. yevhendzis@gmail.com

The syllabus was composed by

Professor Olena Radchenko .

(signature)

Associate Professor Olga Korolyuk .

(signature)

The Head of the Department

Associate Professor Orest Komarytsya .

(signature)