

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

SUMY STATE UNIVERSITY

Academic and Research Medical Institute

Кафедра внутрішньої та сімейної медицини

INTERNAL MEDICINE

Higher education level	The Second
Major: study programme	222 Medicine: Medicine

Approved by Quality Council HHMI

Chairman of the Quality Council HHMI

Petrashenko Viktoriia Oleksandrivna

DATA ON APPROVAL

Author

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Considered and approved at the meeting of the work group of Study programme Медицина	Head of the work group (Head of the Study programme) Prystupa Liudmyla Nykodymivna
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SYLLABUS

1. General information on the course

Full course name	Internal Medicine
Full official name of a higher education institution	Sumy State University
Full name of a structural unit	Academic and Research Medical Institute. Кафедра внутрішньої та сімейної медицини
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Cycle/higher education level	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
Duration	one semester
Workload	10 ECTS, 300 hours. For full-time course 216 hours are working hours with the lecturer (216 hours of seminars), 84 hours of the individual study.
Language(s)	English

2. Place in the study programme

Relation to curriculum	Compulsory course available for study programme "Medicine"
Prerequisites	Step-1, necessary knowledge of Latin, medical terminology, medical biology, medical informatics, human anatomy, physiology, histology, cytology and embryology, pathophysiology, biological and bioorganic chemistry, microbiology, virology and immunology, pathomorphology, pharmacology, hygiene and ecology, propaedeutics to internal diseases, nursing practice and radiology
Additional requirements	There are no specific requirements
Restrictions	There are no specific restrictions

3. Aims of the course

is the formation of ability to apply knowledge, observations, skills in internal medicine for solving of typical problems of doctors activities in the field of health care, the scope of which is provided by certain lists of symptoms and syndromes, diseases and emergencies that require special management of the patients in compliance with the principles of medical ethics and deontology

4. Contents

Module 1. Modern practice in Internal Medicine

Topic 1 Management of patient with arterial hypertension.

Differential diagnosis of arterial hypertension: essential and secondary (renal, endocrine, haemodynamic, central, etc.). Risk stratification of cardiovascular complications and determination of prognosis. Development of a plan of examination. Management strategy according to the risk categories. Principles of non-pharmacological and pharmacological treatment of hypertension. Evidence-based recommendations for the choice of antihypertensive drugs. Updated standards of treatment. Side effects of antihypertensive drugs. Primary and secondary prevention. Prognosis and working-capacity. Classification, criteria of diagnosis and differential diagnosis of secondary endocrine and renal arterial hypertension. Development of examination plan, the role of instrumental and laboratory methods of examination. The management of patients, non-pharmacological and pharmacological treatment.

Topic 2 Management of patient with cardialgia.

Differential diagnosis of angina pectoris and cardialgia in diseases of the heart, musculoskeletal system, respiratory, digestive organs. Development of plan of examination, additional laboratory and instrumental methods of examination. The management of patients according to the genesis of cardialgia. Evidence-based treatment of pain syndrome of non-coronary myocardial diseases.

Topic 3 Management of patient with heart rhythm disorders.

The differential diagnosis of atrial and ventricular extrasystole, fibrillation, sick sinus syndrome and Wolff-Parkinson-White syndrome. Development of plan of examination, additional laboratory and instrumental methods of examination (ECG, daily ECG- monitoring, echocardiography, electrophysiological examination). The management of patients. The main classes of antiarrhythmic drugs, indications for their prescription, side effects. Updated standards of evidence-based treatment. Electropulse therapy. Surgical methods of treatment of arrhythmias. Primary and secondary prevention. Prognosis and working capacity.

Topic 4 Management of patient with heart conduction disorders.

Atrioventricular conduction disorders, different degrees of AV-block. Frederick's syndrome. ECG-diagnostic of bundle-branch block. Evidence-based management of patients, additional laboratory and instrumental methods of examination. Pharmacological treatment. Methods and indications for pacing; artificial rhythm drivers. Primary and secondary prevention. Prognosis and working-capacity.

Topic 5 Management of patient with chronic coronary syndrome (CCS).

Typical and atypical angina pectoris, diagnostic criteria. Development of plan of examination, additional laboratory and instrumental methods of examination (exercise ECG, daily ECG-monitoring, stress echocardiography, coronary angiography). The management according to functional class. Pharmacological treatment of CCS: evidence-based treatment of symptoms of angina/ischemia. Endovascular and surgical methods of treatment. Primary and secondary prevention. Prognosis and working-capacity. CCS and comorbidity (arterial hypertension, heart valve diseases, diabetes mellitus, chronic kidney disease).

Topic 6 Management of patient with cardiomegaly.

The differential diagnosis of cardiomegaly in the case of heart defects, myocarditis, cardiomyopathies, ischaemic heart disease (IHD). Development of plan of examination, additional instrumental methods of examination (ECG, echocardiography, heart magnetic resonance imaging (MRI), coronary angiography). Evidence-based management of patients. Non-pharmacological, pharmacological and surgical treatment. Treatment of thromboembolic complications and arrhythmias. Primary and secondary prevention. Prognosis and working capacity.

Topic 7 Management of patient with heart failure.

Left-sided, right-sided and biventricular heart failure. Differential diagnosis according to the etiology. Development of plan of examination, additional instrumental methods of examination (heart and chest X-ray, ECG, echocardiography, coronary angiography). Algorithms for management of patients according to the standards of chronic heart failure (CHF) treatment. Non-pharmacological, pharmacological, and surgical treatment. Primary and secondary prevention. Prognosis and working capacity.

Topic 8 Management of patient with heart murmurs.

The differential diagnosis of functional, organic, systolic and diastolic murmurs. Development of plan of examination, additional instrumental methods of examination (heart and chest X-ray, ECG, echocardiography, coronary angiography). Evidence-based management of patients according to the cause of heart murmurs, severity of cardiomegaly, presence of heart failure and other complications. Non-pharmacological, pharmacological and surgical treatment. Primary and secondary prevention. Prognosis and working-capacity.

Topic 9 Management of patient with connective tissue diseases (CTD).

The differential diagnosis of CTD. Laboratory and instrumental methods of examination for CTD verification, assessment of activity, and degree of organs and systems disorders. Clinical manifestation of systemic lupus erythematosus, systemic sclerosis, dermatomyositis, Sjogren's syndrome, and antiphospholipid syndrome. Evidence-based treatment. Biological therapy. Pregnancy planning.

Topic 10 Management of patient with joint syndrome and myalgias.

Clinical features of joint syndrome according to the main disease. Differential diagnosis of the joint syndrome. Development of examination plan, the interpretation of laboratory and instrumental methods of examination in the case of the joint syndrome and myalgias. The management of patients according to the main cause. EULAR treatment standards. Basic treatment of rheumatic diseases with joint manifestations. Indications and contraindications for steroids. Primary and secondary prevention. Prognosis and working capacity. The differential diagnosis of myalgias during neurogenic myopathy; chronic inflammatory demyelinating polyneuropathy; disorders at the level of neuromuscular synapses; vessels disorders; the action of toxic substances; primary inflammatory diseases of muscle tissue (idiopathic inflammatory myopathies); infectious myositis (viral myositis, toxoplasmosis, trichinosis, cysticercosis, echinococcosis); congenital metabolic disorders (metabolic myopathies: disorders of muscle glycogen and lipid metabolism); mitochondrial myopathies; endocrine diseases (acromegaly, Addison's disease, hypercorticism, hyperparathyroidism, hypothyroidism, thyrotoxicosis, diabetes mellitus); electrolyte disorders (decrease of blood concentration of potassium, calcium, magnesium, sodium, phosphorus); primary muscle diseases, cancer. Laboratory and instrumental methods of examination in the case of myalgias, management of patients.

Topic 11 Management of patient with degenerative diseases of the joints.

Clinical features of osteoarthritis according to localization. Differential diagnosis of joint syndrome for patients with osteoarthritis and other diseases with damage of joints. Development of plan of examination, the interpretation of laboratory and instrumental methods of examination for osteoarthritis (X-Ray, sonography, arthroscopy, MRI). Evidence-based management of patients. EULAR treatment standards. Diagnostic and management of patients with aseptic necrosis.

Topic 12 Management of patient with osteoporosis.

Mechanisms of development. Diagnostic of osteoporosis (dual-energy X-Ray absorptiometry, FRAX scale, laboratory methods). Densitometric criteria. Risk factors for osteoporosis. Differential diagnosis. Pharmacological treatment, treatment monitoring (densitometry, biochemical markers). Prevention. Management of patients with osteoporosis in the case of multiple myeloma, malabsorption syndrome, hypercorticism, hyperparathyroidism. Management of patients with postmenopausal osteoporosis.

Topic 13 Management of patient with pulmonary hypertension (PH).

Clinical features of PH. Diagnostic meaning of instrumental methods of examination (ECG, X-Ray, echocardiography, examination of the function of external respiration, pulse oximetry, lung perfusion scintigraphy, CT, catheterization of the right parts of the heart). Indications and assessment of vasoreactivity test. Differential diagnosis of diseases, accompanied by PE. Complications. Evidence-based treatment of PE. Prognosis and working-capacity.

Topic 14 Management of patient with the fever of unknown origin.

Differential diagnostic of conditions accompanied by the presence of prolonged fever. Updated standards of diagnostic. Development of plan of examination, the role of instrumental and laboratory methods of examination (X-Ray, CT, bronchoscopy, ultrasound, clinical and biochemical tests, blood cultures, urine, and sputum analysis). Evidence-based management of patients according to the cause, differentiated therapy. Indications for consultations with other specialists (phthisiologist, oncologist, rheumatologist, infectious disease specialist). Non-pharmacological and pharmacological treatment.

Topic 15 Management of patient with gastric dyspepsia.

Definition, organic and functional dyspepsia, main causes and differential diagnostic. Red flag symptoms. Development of plan of examination, the role of instrumental and laboratory methods of examination. Specific methods of examination (breath tests, pH-metry, video capsule endoscopy, X-ray methods). Differentiated approaches to the treatment of dyspeptic syndrome. Updated treatment standards. Primary and secondary prevention. Prognosis and working-capacity.

Topic 16 Management of patient with abdominal pain.

Differential diagnostic of chronic abdominal pain. Development of plan of examination, additional instrumental and laboratory methods of examination (GIT X-Ray, CT, upper and lower endoscopy, ultrasound, clinical and biochemical tests). The management of patients according to the cause. Conservative and surgical treatment. Primary and secondary prevention. Prognosis and working capacity. Indications for surgery in the case of abdominal pain.

Topic 17 Management of patient with jaundice.

Differential diagnostic of subhepatic, hepatic and suprahepatic jaundice. Clinical and biochemical criteria for benign hyperbilirubinemia. Development of plan of examination, the role of instrumental and laboratory methods of examination (ultrasound, endosonography, CT, biochemical blood tests, viral markers). The management of patients according to the cause, differentiated therapy. Updated treatment standards. Primary and secondary prevention. Prognosis and working-capacity.

Topic 18 Management of patient with hepatomegaly and hepatolienal syndrome.

Differential diagnostic of hepatolienal syndrome in the case of diseases of the liver, liver blood vessels, blood. Development of plan of examination, the role of instrumental and laboratory methods of examination (ultrasound, Doppler ultrasonography, CT, liver biopsy, liver tests, viral markers). The management of patients according to the cause, differentiated therapy. Indications for surgical treatment.

Topic 19 Management of patient with portal hypertension.

Differential diagnosis of conditions caused portal hypertension. Development of plan of examination, the role of instrumental and laboratory methods of examination (endoscopy, ultrasound, Doppler ultrasonography, CT, liver biopsy, viral markers). The management of patients according to the cause, differentiated therapy. Treatment standards. Indications for endoscopic and surgical treatment (laparocentesis, shunt surgery, liver transplantation).

Topic 20 Management of patient with bronchoobstructive syndrome.

Differential diagnosis of conditions accompanied by bronchoobstructive syndrome: bronchial asthma, COPD, bronchiectasis. Development of plan of examination, the role of instrumental and laboratory methods of examination (peak flow and spirometry, spirometry, X-Ray, CT, bronchoscopy). Evidence-based management of patients according to the cause, differentiated therapy. Non-pharmacological and pharmacological treatment. Primary and secondary prevention. Prognosis and working-capacity.

Topic 21 Management of patient with infiltrative pulmonary obscurity, pleural effusion.

Differential diagnosis of conditions accompanied with the presence of pulmonary infiltrate. Development of plan of examination, the role of instrumental and laboratory methods of examination (X-Ray, CT, bronchoscopy, biopsy, sputum cultures). Evidence-based management of patients according to the cause, differentiated therapy. Indications for consultations by other specialists (phthisiologist, oncologist, etc.). Non-pharmacological and pharmacological treatment. Primary and secondary prevention. Prognosis and working-capacity. Differential diagnosis of conditions accompanied by the presence of pleural effusion (tuberculosis, bronchial tumors, thromboembolism of the branches of the pulmonary artery, heart failure, acute pancreatitis, liver cirrhosis, trauma, diffuse connective tissue diseases, etc.). Updated standards of diagnostic. Development of plan of examination, the role of X-ray, instrumental and laboratory methods of examination (X-Ray, CT, bronchoscopy, ultrasound, echocardiography, clinical and biochemical tests). The management of patients according to the cause, differentiated therapy. Relative and absolute indications for pleural puncture. Non-pharmacological and pharmacological treatment.

Topic 22 Management of patient with pneumonia.

Differential diagnosis of bacterial and viral pneumonia, differential diagnosis of pneumonia in patients with tuberculosis, lung tumors, pulmonary infarction, etc. Algorithms for diagnosing pneumonia. Development of plan of examination, instrumental and laboratory methods of examination (X-Ray, CT, bronchoscopy, clinical and biochemical tests, sowing sputum). Evidence-based management of patients according to the cause, therapy of pregnant women. Treatment standards. Primary and secondary prevention. Prognosis and working-capacity. The management of patient with hospital-acquired pneumonia. Definition. Differential diagnosis of pneumonia with different causes. Development of plan of examination, instrumental and laboratory methods of examination (X-Ray, CT, bronchoscopy, clinical and biochemical tests, sowing sputum). The management of patients according to the resistance of the microflora, differentiated therapy. First-line and second-line antibiotics. Primary and secondary prevention. Prognosis and working-capacity. The management of patients with pneumonia in the case of immunodeficiency.

Topic 23 Management of patient with chronic complications of diabetes mellitus.

Diabetic micro- and macroangiopathy. Diabetic nephropathy, stages, diagnosis, differential diagnosis, evidence-based treatment and prevention. Diabetic retinopathy: stages of the process, diagnosis, prevention and treatment. Diabetic neuropathy, classification, diagnosis and treatment. Diabetic foot: classification, diagnosis, treatment. Principles of treatment of pregnant women with diabetes. Features of urgent and planned surgical interventions in patients with diabetes mellitus. Regimens of insulin therapy: traditional and intensified insulin therapy. Complications of insulin therapy.

Topic 24 Management of patient with metabolic syndrome.

Definition, classification, diagnostic criteria, the topicality of the problem in the world. Development of plan of examination, instrumental and laboratory methods of examination. The management of patients. Non-pharmacological and pharmacological treatment. Primary and secondary prevention. Prognosis and working-capacity.

Topic 25 Management of patient with Goiter

Methods of assessment of thyroid gland function and additional examination in the case of nodules in the thyroid gland. The interpretation of the diagnosis of hypothyroidism, thyrotoxicosis. Medical, surgical treatment of toxic goiter, use of ¹³¹-iodine for therapeutic aim. Differential diagnosis of Graves' disease and functional autonomy of the thyroid gland. Differential diagnosis of thyroiditis with acute and subacute clinical course. Chronic thyroiditis. The interpretation of the diagnosis of autoimmune thyroiditis. Nodular forms of goiter. Monitoring of patients with thyroid nodules. Pathomorphological classification of thyroid tumors. Differentiated evidence-based treatment of patients with Goiter.

Topic 26 Management of patient with urinary syndrome.

Definition and characteristics of components of urinary syndrome. Differential diagnosis of hematuria, leukocyturia, and proteinuria. Development of plan of examination, instrumental and laboratory methods of examination. The management of patients according to the cause, differentiated therapy. Non-pharmacological and pharmacological treatment. Evidence-based treatment standards. Primary and secondary prevention. Prognosis and working-capacity. Characteristics of the urinary syndrome in the case of pyelonephritis, glomerulonephritis, myeloma.

Topic 27 Management of patient with nephrotic syndrome.

Differential diagnosis of edema with different causes (cardiac, renal, alimentary, etc.). Development of plan of examination, instrumental and laboratory methods of examination (ultrasound, X-Ray, ECG, clinical and biochemical blood tests, Zimnitsky urine test, Nechyporenko urine test). The management of patients according to the cause, differentiated therapy. Non-pharmacological and pharmacological treatment. Advantages and disadvantages of diuretic therapy. Treatment standards. Primary and secondary prevention. Prognosis and working-capacity. Definition, etiology, pathogenesis of nephrotic syndrome. Clinical features. Development of plan of examination, instrumental and laboratory methods of examination. Diagnostic criteria and differential diagnosis. The management of patients, non-pharmacological and pharmacological treatment. Treatment standards. Primary and secondary prevention.

Topic 28 Management of patient with chronic kidney disease.

The definition of «chronic kidney disease». Pathogenesis of organs and systems disorders, its clinical features. Clinical features and changes in laboratory parameters according to the stage. Differential evidence-based treatment according to different stages. Treatment of hypertensive syndrome. Treatment of anemia, infectious complications. Renal replacement therapy: hemodialysis, kidney transplantation. Indications and contraindications for hemodialysis. Complications. Primary and secondary prevention.

Topic 29 Management of patient with anemia.

Diagnostic and differential diagnostic criteria of iron deficiency and B12 deficiency anemia. The main causes of iron deficiency. Development of plan of examination, instrumental and laboratory methods of examination of iron deficiency and B12 deficiency anemia. Diagnostic criteria and management of patients with chronic inflammatory anemia. Differential diagnosis of microcytic anemias. The management of patients, non-pharmacological and pharmacological treatment. Indications for blood transfusion. Evidence-based treatment standards. Primary and secondary prevention. Prognosis and working-capacity. Diagnostic criteria and management of patients with acquired hemolytic anemia. Diagnostic criteria and management of patients with aplastic anemia.

Topic 30 Management of patient with leukemoid reaction and leukemia.

The definition, main causes, classification. Differential diagnosis of leukemia and leukemoid reaction. Principles of differentiated evidence-based treatment. Diagnostic criteria and management of patients with acute lymphoblastic leukemia, acute myeloblastic leukemia. Management of patients with chronic myeloid leukemia, chronic lymphocytic leukemia. Bone marrow transplantation. Supportive therapy. Primary and secondary prevention. Prognosis and working-capacity. Complications on the background of treatment of hematological diseases. Management of a patient with tumor lysis syndrome, anemia caused by chemotherapy, with febrile neutropenia. Management of a patient with extravasation at the site of chemotherapy. Management of a patient with dyspeptic disorders on the background of chemotherapy. Complications on the background of treatment of hematological diseases. Management of a patient with tumor lysis syndrome, anemia caused by chemotherapy with febrile neutropenia. Management of the patient with extravasation in the place of chemotherapy. Management of the patient with dyspeptic disorders on the background of chemotherapy.

Topic 31 Management of patient with lymphadenopathy.

The main causes of lymphadenopathy. Differential diagnosis of Hodgkin's and non-Hodgkin's lymphoma, lymph node enlargement in the case of other diseases (tuberculosis, sarcoidosis, metastasis of malignant tumors, SLE, etc.). The evidence-based treatment strategy, non-pharmacological and pharmacological treatment. Primary and secondary prevention. Prognosis and working capacity. Final assessment: graded test.

Topic 32 Management of patient with hemorrhagic syndrome

Differential diagnosis of hemorrhagic syndrome. Development of plan of examination, instrumental and laboratory methods of examination (clinical blood test, autoimmune markers, coagulogram, blood culture). The management of patients according to the cause. Evidence-based management of patients with coagulopathies (congenital - hemophilia A and B, Willebrand's disease and acquired). Management of a patient with disorders of platelet and vascular stasis. Differential diagnosis of thrombocytopenia in CTD, allergic reactions, leukemias and hypoplastic anemia, disseminated intravascular coagulation (DIC) syndrome, sepsis, HIV. The management of patients, updated treatment standards. Hemorrhagic diathesis caused by impaired coagulation and platelet stasis. Diagnostic criteria and management of a patient with DIC syndrome. Hemorrhagic diathesis caused by vascular wall damage. Management of patients with hemorrhagic telangiectasia, hemorrhagic vasculitis

Topic 33 Management of patients with thrombocytopenic purpura and polycythemia.

Causes of thrombocytopenia (reduced platelet production, shortened platelet survival, increased splenic pooling). Diagnostic criteria and evidence-based treatment of Immune thrombocytopenic purpura (ITP). Secondary autoimmune thrombocytopenic purpura. Differential diagnosis. Prognosis and working capacity. Diagnostic criteria for true polycythemia. Differential diagnosis between true and secondary polycythemia. Differential diagnosis of true polycythemia with chronic myelogenous leukemia, essential thrombocythemia, osteomyelofibrosis. Evidence-based treatment of true polycythemia. Indications to phlebotomy. Cytoreductive therapy. Prognosis (survival and risk of transformation to myelofibrosis and acute myeloid leukemia). Working-capacity.

Topic 34 Performance of practical skills and manipulations. Differentiated credit

Performance of practical skills and manipulations. Differentiated credit

Module 2. Emergencies in the clinic of Internal Medicine

Topic 35 Curation of the patient with Hypertensive emergency.

Criteria of emergency hypertensive crisis. Evidence-based management of patients with a hypertensive emergency. Algorithm of emergency care. The prevention of complicated arterial hypertension. Differential approach to the prescription of emergency drugs. Treatment features of hypertensive crisis complicated by acute coronary failure. Therapeutic approach to emergency care in patients with stratifying aortic aneurysm. Pharmacological tactics in patients with hypertensive crisis complicated by ischemic brain injury and subarachnoid hemorrhage. Standards for the diagnosis and emergency treatment of pulmonary edema at pre-hospital and hospital care. Treatment strategy according to the level of blood pressure. Further management of patients.

Topic 36 Curation of the patient with acute coronary syndrome and myocardial infarction (MI).

Criteria of diagnosis verification. Emergency evidence-based care in the pre-hospital and hospital stages in patients with ST-segment elevation myocardial infarction and non-ST segment elevation myocardial infarction with unstable angina. Invasive treatment strategy (indications for percutaneous coronary interventions, contraindications, possible complications). Indications and contraindications to thrombolytic therapy. Schemes of thrombolytic agents prescription. Prognosis, primary, secondary prevention and rehabilitation measures.

Topic 37 Curation of the patient with myocardial infarction complications.

The interpretation of the results of the main laboratory and instrumental examination during cardiogenic shock and other MI complications. Standards of emergency care of cardiogenic shock in pre-hospital and hospital stages. Further evidence-based management of the patients. Emergency care of heart rhythm and conduction disorders.

Topic 38 Curation of the patient with paroxysmal heart rhythm and conduction disorders.

The role of instrumental and laboratory methods of examination. Algorithm of diagnostic of paroxysmal rhythm and conduction disorders. Management strategy of patients with paroxysmal heart rhythm and conduction disorders at the pre-hospital and hospital stages. Differential diagnosis. Non-pharmacological and pharmacological treatment. Electropulse therapy. Standards of primary and secondary prevention, prognosis and working-capacity.

Topic 39 Curation of the patient with acute thrombosis

Diagnostic criteria of mesenteric vascular thrombosis. Evidence-based management of patients with mesenteric vascular thrombosis. Diagnostic criteria of deep vein thrombosis of lower extremity. Evidence-based management of patient with deep vein thrombosis of the lower extremity. Diagnostic criteria of thrombosis of the superior vena cava. Management of patient with thrombosis of the superior vena cava.

Topic 40 Curation of the patient with pulmonary embolism. Treatment strategy in sudden cardiac death (SCD).

Standards of emergency diagnostic and treatment of pulmonary embolism in pre-hospital and hospital stages. Further evidence-based management of the patients. Standards of emergency diagnostic and treatment of sudden cardiac death in pre-hospital and hospital stages. The technique of resuscitation measures. Defibrillation. Further management of the patients.

Topic 41 Curation of the patient with emergencies in rheumatology.

Indications and principle of evidence-based emergency care in rheumatology. The interpretation of results of laboratory and instrumental investigation, objective signs of severe and terminal stage of systemic lupus erythematosus, antiphospholipid syndrome, dermato- and polymyositis, systemic vasculitis. Pulse therapy with corticosteroids and cytostatics in patients with connective tissue diseases and systemic vasculitis. Indications and methods of extracorporeal blood purification. Indications and methods of intravenous immunoglobulins injection.

Topic 42 Curation of the patient with acute back pain and acute kidney injury (AKI).

Differential diagnostic of acute back pain in diseases of the heart, aorta, respiratory system, gastrointestinal tract, kidneys, urinary tract and pelvic. Differential diagnostic of acute back pain in patients with musculoskeletal disorders and peripheral nervous system diseases. Updated diagnostic and treatment standards. Tactics of treatment according to the location and character of disorders. The role of radiological and laboratory methods of examination. The differential diagnostic of conditions caused acute kidney injury. Diagnostic criteria and causes of prerenal, renal, postrenal AKI. The management of patients according to the cause. The role of instrumental and laboratory methods of examination. Evidence-based treatment, indications for hemodialysis. The prevention of AKI.

Topic 43 Curation of the patient with severe exacerbation of bronchial asthma (BA), acute allergic reactions.

Assessment of asthma exacerbation severity. Self-management during asthma exacerbation and assessment of response to therapy. Evidence-based treatment of asthma exacerbations in general practice, in the emergency department. Criteria for hospitalization, for discharge from the emergency department of the patient with severe exacerbation of asthma. Management of a patient with generalized urticaria and Quincke's edema. Evidence-based management of a patient with anaphylactic shock.

Topic 44 Curation of the patient with emergencies in diabetes mellitus.

Diagnostic criteria and management of patients with hypoglycemic coma. Complications and consequences of severe hypoglycemia. Diagnostic criteria and evidence-based management of patients with ketoacidotic coma. Diagnostic criteria and management of patients with hyperglycemic hyperosmolar non-ketoacidotic coma. Diagnostic criteria and management of patients with lactic acidemic coma. The differential diagnostic of different variants of coma in diabetic patients.

Topic 45 Curation of the patient with syncope.

Criteria of syncope, associated with heart rhythm and conduction disorders. Criteria of syncope, associated with cardiovascular diseases. Criteria of syncope, associated with orthostatic hypotension. Criteria of neurogenic syncope. Instrumental methods for verification of syncope. Differential diagnosis of syncope. Treatment of reflex syncope, orthostatic hypotension. Evidence-based treatment of arrhythmogenic syncope. The place of pacing, catheter ablation, antiarrhythmic therapy of implantable cardioverter-defibrillator. The essence of performing maneuvers to prevent syncope (horizontal position, techniques with physical pressure, cough suppression, sneezing, tilt- training).

Topic 46 Curation of the patient with acute adrenal insufficiency, thyrotoxic crisis, myxedema coma.

Diagnostic criteria and evidence-based management of patients with acute adrenal insufficiency. Peculiarities of clinical manifestations of Waterhouse-Friderichsen syndrome. Diagnostic criteria and management of patients with thyrotoxic crisis. Diagnostic criteria and management of patients with severe hypothyroidism (myxedema coma).

Topic 47 Curation of the patient with acute abdominal pain. Diagnostic algorithm in acute abdominal pain. Diagnostic criteria for acute pancreatitis. Complications, management. Criteria for diagnosis of acute small bowel ischemia, peptic ulcer disease, gallstones and choledocholithiasis. Complications of peptic ulcer disease and its treatment. Criteria for diagnosis of aortic aneurism. Medical tactics at acute abdominal pain.
Topic 48 Performance of practical skills and manipulations. Differentiated credit Performance of practical skills and manipulations. Differentiated credit

5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

LO1	Skills in surveying and clinical examination of a patient.
LO2	Ability to determine the required set of laboratory and instrumental studies and to evaluate their results.
LO3	Ability to establish a provisional and clinical diagnosis of disease.
LO4	Ability to determine the necessary mode of work and rest, a diet in the treatment course.
LO5	Determine the nature of nutrition in the treatment of diseases.
LO6	Ability to determine the principles of treatment and treatment modality.
LO7	Ability to diagnose medical emergencies.
LO8	Ability to determine the approach to emergency medical care.
LO9	Ability to apply the skills of providing emergency medical care
LO10	Ability to carry out medical evacuation measures
LO11	To implement the sanitary, hygienic and preventive measures in the case of pathological changes.
LO12	Ability to determine the management tactics of persons subject to dispensary supervision.
LO13	Ability to conduct an examination of working capacity.
LO14	Ability to maintain medical records.
LO15	To evaluate the environmental impact, social, economic, biological determinants on the health of an individual, family, and population.
LO16	Ability to carry out activities related to the organization and integration of the provision of medical assistance to the population and the marketing of medical services.
LO17	Skills in performing medical procedures

6. Role of the course in the achievement of programme learning outcomes

Programme learning outcomes achieved by the course.

For 222 Medicine:

PO1	Skills in surveying and clinical examination of a patient. Collect patient's complaint data, medical history, history of life, information about the patient's general condition (consciousness, constitution) and appearance (examination of the skin, subcutaneous fat layer, palpation of lymph nodes, thyroid and mammary glands); examine the cardiovascular system (examination and palpation of the heart and superficial vessels, determination of percussion borders of the heart and blood vessels, auscultation of the heart and blood vessels); respiratory system; examine the abdominal cavity condition; musculoskeletal (examination and palpation) and genitourinary system.
PO2	Ability to determine the required set of laboratory and instrumental studies and to evaluate their results. Evaluate information about diagnosis at a healthcare institution or its subdivision by means of a standard procedure using knowledge about a human, his organs and systems, based on the results of laboratory and instrumental studies.
PO3	Ability to establish a provisional and clinical diagnosis of disease Perform the following at a healthcare institution or its subdivision and among the assigned population: register the leading clinical symptom or syndrome by making a reasonable decision, using the data of patient's history and physical examination, knowledge about a human, his organs and systems, and observing the relevant ethical and legal norms; establish the most probable or syndromal diagnosis; order laboratory and/or instrumental studies; establish a differential diagnosis of diseases and a provisional clinical diagnosis.
PO4	Ability to determine the necessary mode of work and rest in the treatment course Determine the necessary mode of work and rest in the treatment course at a healthcare institution, at patient's home and during medical evacuation (including in the field), based on the provisional clinical diagnosis, using knowledge about a human, his organs and systems, observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures.
PO5	Ability to determine a diet in the treatment course Determine the necessary diet in the treatment course of diseases at a healthcare institution, at patient's home and during medical evacuation (including in the field), based on the provisional clinical diagnosis, using knowledge about a human, his organs and systems and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures.
PO6	Ability to determine the principles of treatment and treatment modality Determine the treatment mode (conservative, operative) for disease at a healthcare institution, at patient's home and during medical evacuation (including in the field), based on the provisional clinical diagnosis, using knowledge about a human, his organs and systems and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures; the treatment approach for diseases at a healthcare institution, at patient's home and during medical evacuation (including in the field).

PO7	Ability to diagnose medical emergencies Establish a diagnosis by making a reasonable decision based on evaluation of the person's state, using standard methods of physical examination and possible history data, the knowledge about a human, his organs and systems, and observing the relevant ethical and legal norms under any circumstances (at home, in the street, at a healthcare facility), including under emergency and military operation conditions, in the field, with a lack of information and limited time.
PO8	Ability to determine the approach to emergency medical care Determine the appropriate approach in emergency medical care case under any circumstances, using the knowledge about a human, his organs and systems and observing the relevant ethical and legal norms, by making a reasonable decision based on the medical emergency diagnosis using standard schemes under limited time conditions.
PO9	Provide emergency medical assistance under any circumstances, using the knowledge about a human, his organs and systems and observing the relevant ethical and legal norms, by making a reasonable decision based on the medical emergency diagnosis (according to the List 3) using standard schemes under limited time conditions.
PO10	Organize medical evacuation procedures among the population and the military under emergency conditions (including in the field), and during the phases of medical evacuation, given the existing system of medical evacuation provision.
PO11	Skills in performing medical procedures Perform medical procedures at a medical facility, at home or at work by making a reasonable decision on the basis of a provisional clinical diagnosis and/or health parameters using the knowledge about a human, his organs and systems and observing the relevant ethical and legal norms.
PO13	Ability to perform sanitary and preventive measures. Perform the following by making a reasonable decision at a healthcare institution, its subdivision, or in the workplace, using a generalized procedure for health assessment, knowledge about a human, his organs and systems, observing the relevant ethical and legal norms in the envisaged cohorts: form groups of dispensary patients; healthy people subject for regular medical checkup and implement a system of preventive and disease control efforts regard to: organization of rational nutrition, water supply; mode of activity and rest; primary prevention of diseases and injuries; bad habits; promotion of a healthy lifestyle.
PO15	Ability to manage the patients who are subject to dispensary monitoring Perform the following at a healthcare institution or at patient's home using the knowledge about a human, his organs and systems and observing the relevant ethical and legal norms, by making a reasonable decision based on the patient health data: define the examination and secondary prevention in the patients who are subject to regular medical checkup; the approach to examination and primary prevention in healthy people who are subject to regular medical checkup and prescribe the necessary food for infants.
PO16	Ability to perform disability examination Detect disability and determine the degree of daily activity limitation, disability type, severity and duration as well as to maintain relevant documents at a healthcare institution on the basis of the data on disease course and professional activity of the person.

PO17	Ability to maintain medical records Perform the following at a healthcare institution or its subdivision: prepare annual reports on personal work activity using official accounting documents, in a generalized form; maintain medical records related to patients and cohorts (outpatient/inpatient records, medical history, individual pregnancy record, prenatal record, birth history, sanatorium and health resort card form, temporary disability leave, socio-medical assessment documentation, etc.), using standard technique based on regulations.
PO18	Ability to conduct epidemiological and medical-statistical research of public health; ability to process governmental, social, economic, and medical information. Perform the following within the assigned district according to standard methods of descriptive, analytical epidemiological and medical-statistical studies: screen for the most important non-infectious diseases; evaluate morbidity, including that of chronic non-infectious diseases, disability, mortality, and integrated health indicators both over time and in comparison with average data; identify risk factors for disease development and course; form population risk groups.
PO19	Ability to assess the influence of environment, socio-economic and biological determinants on the health of a person, family, or population

7. Soft Skills

For 222 Medicine:

8. Teaching and learning activities

Topic 1. Management of patient with arterial hypertension.
pr.tr.1 "Diagnostics in patient with arterial hypertension." (full-time course) Differential diagnosis of arterial hypertension: essential and secondary (renal, endocrine, hemodynamic, central, etc.). Risk stratification of cardiovascular complications and determination of prognosis. Development of a plan of examination.
pr.tr.2 "Updated recommendations for the choice of antihypertensive drugs." (full-time course) Evidence-based treatment. Side effects of antihypertensive drugs. Primary and secondary prevention. Prognosis and working-capacity.
pr.tr.3 "Management of patients with comorbid AH" (full-time course) Management strategy according to the risk categories. Management of patients with AH and atrial fibrillation, AH and chronic kidney disease, AH and heart failure with low EF.
pr.tr.4 "Diagnostic of renal hypertension" (full-time course) Clinical and diagnostic features of renal (renovascular, renal parenchymal) arterial hypertension.
pr.tr.5 "Diagnostic of endocrine hypertension" (full-time course) Clinical and diagnostic features of endocrine (Cushing's syndrome, pheochromocytoma, Conn's syndrome, diffuse toxic goiter) and haemodynamic arterial hypertension. Arterial hypertension during pregnancy and metabolic disorders (metabolic syndrome). The role of laboratory and instrumental methods in differential diagnosis and verification of diagnosis.

pr.tr.6 "Evidence-based treatment of secondary arterial hypertension" (full-time course)

Therapeutic and surgical treatment of secondary arterial hypertension. Primary and secondary prevention. Prognosis and working capacity. The study of this topic involves training of skills connected with the collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital, theoretical work in the classroom (ECG interpretation, discussion of situational tasks), or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer. Application of instrumental methods (work with electrocardiograph, ECG data, coronary angiography) and laboratory examination (using of glucometer, assessment of INR, APTT, lipid profile, biomarkers) with further discussing of the results. Carrying out intravenous injections. Carrying out and interpretation of the received data of Holter monitoring, stress tests in the departments of the medical institution (according to the agreement of cooperation between medical institution and university). Using of virtual simulation (watching video about the methodic of coronary angiography, stress tests). Discussion of tactics and prescription of treatment.

Topic 2. Management of patient with cardialgia.

pr.tr.7 "The main reasons of chest pain" (full-time course)

Differential diagnosis between angina pectoris and chest pain in diseases of the heart, musculoskeletal system, respiratory, digestive organs. Development of plan of examination, additional laboratory and instrumental methods of examination.

pr.tr.8 "Investigations for differential diagnosis in cardialgia" (full-time course)

Criteria for vertebrogenous cardialgia, psychogenic cardialgia. Diagnostic algorithm in IHD

pr.tr.9 "The management of patient with cardialgia." (full-time course)

Evidence-based management of patients according to the genesis of cardialgia. The drugs for the treatment of pain syndrome of non-coronary myocardial diseases. The study of this topic involves theoretical work in the classroom (testing, discussion of situational tasks), training of physical examination skills in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer for blood pressure measurement. Application of instrumental methods (work with electrocardiograph, ECG and Holter monitoring data, ultrasound of the heart) and laboratory examination (using of glucometer, assessment of electrolyte changes, hormone levels) with further discussing of the results for risk stratification. Carrying out and interpretation of the obtained data of X-ray and ultrasound examination of the heart and blood vessels in the departments of the medical institution (according to the agreement of cooperation), using of virtual simulation (watching video about the methodic of Cardiac stress test).

Topic 3. Management of patient with heart rhythm disorders.

pr.tr.10 "The differential diagnosis in patients with heart rhythm disorders." (full-time course)

The differential diagnosis of atrial and ventricular extrasystole, fibrillation, sick sinus syndrome and Wolff-Parkinson-White syndrome.

pr.tr.11 "Methods of examination in patients with heart rhythm disorders." (full-time course)

Development of plan of examination, additional laboratory and instrumental methods of examination (ECG, daily ECG- monitoring, echocardiography, electrophysiological examination). The management of patients.

pr.tr.12 "Evidence-based treatment standards" (full-time course)

The main classes of antiarrhythmic drugs, indications for their prescription, side effects. Updated standards of treatment. Electropulse therapy. Surgical methods of treatment of arrhythmias. Primary and secondary prevention. Prognosis and working-capacity. The study of this topic involves theoretical work in the classroom (testing, discussion of situational tasks, ECG), training of skills connected with collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer. Application of instrumental methods (work with electrocardiograph, ECG and Holter monitoring data, ultrasound of the heart) and laboratory examination (using of glucometer, assessment of electrolyte changes, lipid profile) with further discussing of the results. Carrying out and interpretation of the obtained data of ultrasound examination of the heart and blood vessels in the departments of the medical institution, using of virtual simulation (watching video about the methodic of radiofrequency catheter ablation, electrical cardioversion). Discussion of tactics and prescription of treatment (use of the defibrillator).

Topic 4. Management of patient with heart conduction disorders.

pr.tr.13 "The management of patient with heart conduction disorders." (full-time course)

Atrioventricular conduction disorders, different degrees of AV-block (Mobitz type I and type II second degree heart blocks). Frederick's syndrome. ECG-diagnostic of bundle-branch block.

pr.tr.14 "Pharmacological treatment. Heart stimulation." (full-time course)

The management of patients, additional laboratory and instrumental methods of examination. Pharmacological evidence-based treatment. Artificial rhythm drivers (pace-makers, indications). Primary and secondary prevention of heart conduction disorders. Prognosis and working capacity. The study of this topic involves theoretical work in the classroom (ECG interpretation, solving of situational tasks), training of skills connected with the collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer. Application of instrumental methods (work with an electrocardiograph, ECG data) and laboratory examination (using of glucometer, assessment of INR, APTT, lipid profile, biomarkers) with further discussing of the results. Carrying out intravenous injections. Acquaintance with a technique of carrying out and interpretation of the received data of Holter monitoring in the departments of the medical institution (according to the agreement of cooperation between medical institution and university. Using virtual simulation (watching video about the methodic of cardiostimulation). Discussion of tactics and prescription of treatment.

Topic 5. Management of patient with chronic coronary syndrome (CCS).

pr.tr.15 "The management of patient with stable angina." (full-time course)

Typical and atypical angina pectoris, diagnostic criteria. Development of plan of examination, additional laboratory and instrumental methods of examination (exercise ECG, daily ECG-monitoring, stress echocardiography, coronary angiography).

pr.tr.16 "The management of patients according to functional class." (full-time course) Updated evidence-based treatment. Endovascular and surgical methods of treatment. Primary and secondary prevention. Prognosis and working capacity.
pr.tr.17 "CCS and comorbidity (arterial hypertension, heart valve diseases, diabetes mellitus, chronic kidney disease)." The peculiarities of management patients with CCS and coexistent arterial hypertension, heart valve diseases, diabetes mellitus, and chronic kidney disease. The study of this topic involves training of skills connected with collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital, theoretical work in the classroom (ECG interpretation, solving of situational tasks), or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer. Application of instrumental methods (work with electrocardiograph, ECG data, coronary angiography) and laboratory examination (using of glucometer, assessment of INR, APTT, lipid profile, biomarkers) with further discussing of the results. Carrying out of intravenous injections. Carrying out and interpretation of the received data of holter monitoring, stress tests in the departments of the medical institution (according to the agreement of cooperation between medical institution and university. Using of virtual simulation (watching video about the methodic of coronary angiography, stress tests). Discussion of tactics and prescription of treatment.
Topic 6. Management of patient with cardiomegaly.
pr.tr.18 "The differential diagnosis of cardiomegaly" (full-time course) The differential diagnosis of cardiomegaly in the case of heart defects, myocarditis, cardiomyopathies, ischaemic heart disease (IHD).
pr.tr.19 "Examination in cardiomegaly" (full-time course) Development of plan of examination, additional instrumental methods of examination (ECG, echocardiography, heart magnetic resonance imaging (MRI), coronary angiography).
pr.tr.20 "The management of patients with cardiomegaly." (full-time course) The management of patients. Primary and secondary prevention. Prognosis and working capacity. The study of this topic involves theoretical work in the classroom (ECG interpretation, discussion of situational tasks), training of skills connected with collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer. Using of virtual simulation (watching video about the methodic of cardiostimulation, cardioversion, respiratory support), instrumental methods (work with electrocardiograph, ECG data, chest X-Ray, pulse oximeter) and laboratory examination (using of glucometer, assessment of INR, APTT, lipid profile, biomarkers) with further discussing of the results. Carrying out intravenous injections. Acquaintance with a technique of carrying out and interpretation of the received data of echocardiography in the departments of the medical institution.
Topic 7. Management of patient with heart failure.
pr.tr.21 "Examination in heart failure" (full-time course) Development of plan of examination, additional instrumental methods of examination (heart and chest X-ray, ECG, echocardiography, coronary angiography).

pr.tr.22 "Differential diagnosis in patient with heart failure." (full-time course)

Left-sided, right-sided and biventricular heart failure. Differential diagnosis according to the aetiology.

pr.tr.23 "Treatment of patients with heart failure" (full-time course)

Management of patients according to the cause, functional classes, and stages of heart failure. Non-pharmacological, pharmacological, and surgical treatment. Updated evidence-based treatment. Primary and secondary prevention. Prognosis and working-capacity. The study of this topic involves theoretical work in the classroom (ECG interpretation, discussion of situational tasks), training of skills connected with collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer. Using of virtual simulation (watching video about the methodic of cardiostimulation, cardioversion, respiratory support), instrumental methods (work with electrocardiograph, ECG data, chest X-Ray, pulse oximeter) and laboratory examination (using of glucometer, assessment of INR, APTT, lipid profile, biomarkers) with further discussing of the results. Carrying out of intravenous injections. Acquaintance with a technique of carrying out and interpretation of the received data of echocardiography in the departments of the medical institution.

Topic 8. Management of patient with heart murmurs.

pr.tr.24 "Differential diagnosis of heart murmurs. Evidence-based patient management." (full-time course)

The differential diagnosis of functional, organic, systolic and diastolic murmurs. Development of plan of examination, additional instrumental methods of examination (heart and chest X-ray, ECG, echocardiography, coronary angiography). The management of patients according to the cause of heart murmurs, severity of cardiomegaly, presence of heart failure and other complications.

pr.tr.25 "Treatment of patients with heart defects" (full-time course)

Non-pharmacological, pharmacological and surgical treatment. Primary and secondary prevention. Prognosis and working-capacity. The study of this topic involves training of skills connected with the collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital, theoretical work in the classroom (ECG interpretation, solving of situational tasks), or applying role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer. Application of instrumental methods (work with electrocardiograph, ECG data, coronary angiography) and laboratory examination (using of glucometer, assessment of INR, APTT, lipid profile, biomarkers) with further discussing of the results. Carrying out and interpretation of the received data of Holter monitoring, ultrasound of the heart in the departments of the medical institution. Using of virtual simulation (watching video about the methodic of coronary angiography, stress tests). Discussion of management and prescription of treatment.

Topic 9. Management of patient with connective tissue diseases (CTD).

pr.tr.26 "The differential diagnosis of CTD." (full-time course)

Laboratory and instrumental methods of examination for CTD verification, assessment of activity and degree of organs and systems disorders.

pr.tr.27 "Clinical manifestations of CTD." (full-time course)

Clinical manifestation of systemic lupus erythematosus, systemic sclerosis, dermatomyositis, Sjogren's syndrome, and antiphospholipid syndrome.

pr.tr.28 "Treatment of CTD." (full-time course)

Evidence-based treatment of CTD. Biological therapy. Pulse therapy. Pregnancy planning. Conditions of vaccination. The study of this topic involves theoretical work in the classroom (tests, discussion of situational tasks), training of skills connected with collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer, questionnaires, the capillaroscope. Using of instrumental (work with electrocardiograph, chest X-Ray and X-Ray of joint) and laboratory (assessment of serological markers) methods examination with further discussing of the results. Discussion of management and prescription of treatment using infusomat. Acquaintance with a technique of carrying out and interpretation of the received data of X-Ray and ultrasound examination in the departments of the medical institution.

Topic 10. Management of patient with joint syndrome and myalgias.

pr.tr.29 "Clinical features of joint syndrome according to main disease." (full-time course)

Differential diagnosis of joint syndrome. Development of plan of examination, the interpretation of laboratory and instrumental methods of examination in the case of joint syndrome and myalgias.

pr.tr.30 "The management of patients according to the main cause." (full-time course)

EULAR treatment standards. Basic treatment of rheumatic diseases with joint manifestations. Indications and contraindications for steroids. Primary and secondary prevention. Prognosis and working-capacity.

pr.tr.31 "The differential diagnosis of myalgias" (full-time course)

The differential diagnosis of myalgias during neurogenic myopathy; chronic inflammatory demyelinating polyneuropathy; disorders at the level of neuromuscular synapses; vessels disorders; action of toxic substances; primary inflammatory diseases of muscle tissue (idiopathic inflammatory myopathies); infectious myositis (viral myositis, toxoplasmosis, trichinosis, cysticercosis, echinococcosis); congenital metabolic disorders (metabolic myopathies: disorders of muscle glycogen and lipid metabolism); mitochondrial myopathies; endocrine diseases (acromegaly, Addison's disease, hypercorticism, hyperparathyroidism, hypothyroidism, thyrotoxicosis, diabetes mellitus). Management of patients. The study of this topic involves theoretical work in the classroom (testing, solving of situational tasks), training of skills connected with collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer, activity assessment scales. Using of instrumental (work with X-Ray of joint, bone densitometry) and laboratory (using of glucometer, assessment of serological markers) methods examination with further discussing of the results. Acquaintance with a technique of carrying out and interpretation of the received data of X-Ray, MRI and ultrasound examination of joints in the departments of the medical institution.

Topic 11. Management of patient with degenerative diseases of the joints.

pr.tr.32 "Clinical features of osteoarthritis according to localization." (full-time course)

Differential diagnosis of joint syndrome for patients with osteoarthritis and other diseases with damage of joints. Development of plan of examination, the interpretation of laboratory and instrumental methods of examination for osteoarthritis (X-Ray, sonography, arthroscopy, MRI).

pr.tr.33 "The management of patients."

EULAR treatment standards. Diagnostic and management of patients with aseptic necrosis. The study of this topic involves theoretical work in the classroom (tests, discussion of situational tasks), training of skills connected with collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer, activity assessment scales. Using of instrumental (work with X-Ray of joint, bone densitometry) and laboratory (using of glucometer, assessment of serological markers) methods examination with further discussing of the results. Acquaintance with a technique of carrying out and interpretation of the received data of X-Ray, MRI and ultrasound examination of joints, arthrocentesis in the departments of the medical institution (according to the agreement of cooperation between medical institution and university) or using of virtual stimulation.

Topic 12. Management of patient with osteoporosis.

pr.tr.34 "The diagnostic of osteoporosis. Evidence-based patient management. Management of patient with secondary osteoporosis." (full-time course)

Risk factors of osteoporosis. Mechanisms of development. Diagnostic of osteoporosis (dual-energy X-Ray absorptiometry, FRAX scale, laboratory methods). Densitometric criteria. Risk factors for osteoporosis. Differential diagnosis. Pharmacological treatment, treatment monitoring (densitometry, biochemical markers). Prevention. Management of patients with primary (postmenopausal) osteoporosis. Management of patients with osteoporosis in the case of multiple myeloma, rheumatoid arthritis and other rheumatic diseases, malabsorption syndrome, hypercorticism, hyperparathyroidism. The study of this topic involves training of skills connected with collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer, assessment scale, theoretical work in the classroom (discussion of situational tasks). Using of instrumental (work with X-Ray of joints, densitometry) and laboratory (assessment of biochemical markers of bone marrow metabolism) methods examination with further discussing of the results. Using virtual simulation of densitometry.

Topic 13. Management of patient with pulmonary hypertension (PH).

pr.tr.35 "Management of patient with pulmonary hypertension (PH)." (full-time course)

Clinical features of PH. Diagnostic meaning of instrumental methods of examination (ECG, X-Ray, echocardiography, examination of the function of external respiration, CT, catheterization of the right parts of the heart). Indications and assessment of vasoreactivity test. Differential diagnosis of diseases, accompanied by PH. Complications. Evidence-based treatment of PH. Prognosis and working capacity. The study of this topic involves theoretical work in the classroom (testing, solving of situational tasks), training of skills connected with collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer, pulse oximeter. Using of instrumental (work with X-Ray of joint, ultrasound of the heart) and laboratory (using of glucometer, assessment of serological markers) methods examination with further discussing of the results. Acquaintance with a technique of carrying out of X-Ray and ultrasound examination in the departments of the medical institution, methodic of catheterization of the right parts of the heart by virtual simulation.

Topic 14. Management of patient with the fever of unknown origin.

pr.tr.36 "Differential diagnosis in patient with the fever of unknown origin. Examination of patients with fever of unknown origin." (full-time course)

Differential diagnostic of conditions accompanied by the presence of prolonged fever. Updated standards of diagnostic. Development of plan of examination, the role of instrumental and laboratory methods of examination (X-Ray, CT, bronchoscopy, ultrasound, clinical and biochemical tests, blood cultures, urine, and sputum analysis)

pr.tr.37 "Management of patients" (full-time course)

The management of patients according to the cause, differentiated therapy. Evidence-based treatment. The study of this topic involves theoretical work in the classroom (solving of situational tasks), training of skills connected with the collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer. Using of instrumental (work with electrocardiograph, pulse oximeter, ECG data, X-Ray of joint, ultrasound of the heart) and laboratory methods of examination with further discussing of the results. The technique of carrying out of heart ultrasound, chest CT in the departments of the medical institution. Discussion of management and prescription of treatment.

Topic 15. Management of patient with gastric dyspepsia.

pr.tr.38 "Examination of patient with gastric dyspepsia. Differential diagnostic of dyspepsia." (full-time course)

Definition, organic and functional dyspepsia, main causes and differential diagnostic. Red flag symptoms. Development of plan of examination, the role of instrumental and laboratory methods of examination. Specific methods of examination (breath tests, pH-metry, video capsule endoscopy, X-ray methods). Differential diagnosis in dyspepsia.

pr.tr.39 "Differentiated approaches to the treatment of dyspeptic syndrome." (full-time course)

Evidence-based treatment standards of dyspepsia. Primary and secondary prevention. Prognosis and working capacity. The study of this topic involves training of skills connected with collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, theoretical work in the classroom (solving of situational tasks). Using of instrumental (work with X-Ray, ultrasound data) and laboratory methods examination with further discussing of the results. Acquaintance with a technique of carrying out and interpretation of ultrasound, CT of abdominal cavity and small pelvis in the departments of the medical institution. Using of virtual simulation of gastroduodenoscopy, colonoscopy.

Topic 16. Management of patient with abdominal pain.

pr.tr.40 "Examination of patient with abdominal pain. Differential diagnostic of chronic abdominal pain." (full-time course)

Development of plan of examination, additional instrumental and laboratory methods of examination (GIT X-Ray, upper and lower endoscopy, ultrasound, clinical and biochemical tests). Differential diagnostic of chronic abdominal pain.

pr.tr.41 "Differentiated approaches to the treatment of pain syndrome." (full-time course)

Indications for surgery in the case of abdominal pain. The study of this topic involves training of skills connected with collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, theoretical work in the classroom (solving of situational tasks). Using of instrumental (work with X-Ray, ultrasound data) and laboratory methods examination with further discussing of the results. Acquaintance with a technique of carrying out and interpretation of ultrasound, CT of the abdominal cavity and small pelvis in the departments of the medical institution. Using of virtual simulation of gastroduodenoscopy, colonoscopy.

Topic 17. Management of patient with jaundice.

pr.tr.42 "Examination in patients with jaundice. Differential diagnosis in patient with jaundice." (full-time course)

Development of plan of examination, the role of instrumental and laboratory methods of examination (ultrasound, endosonography, CT, biochemical blood tests, viral markers). Differential diagnostic of subhepatic, hepatic and suprahepatic jaundice. Clinical and biochemical criteria for benign hyperbilirubinemia.

pr.tr.43 "Evidence-based treatment" (full-time course)

The management of patients according to the cause, differentiated therapy. Updated treatment standards. Primary and secondary prevention. Prognosis and working capacity. The study of this topic involves training of skills connected with the collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, theoretical work in the classroom (discussion of situational tasks). Using instrumental (work with EFGDS, ultrasound data) and laboratory methods examination with further discussing of the results. Technique of carrying out and interpretation of ultrasound, CT of the abdominal cavity and small pelvis, EFGDS in the departments of the medical institution. Using a virtual simulation of gastroduodenoscopy.

Topic 18. Management of patient with hepatomegaly and hepatolienal syndrome.

pr.tr.44 "Examination in hepatomegaly. Differential diagnostic in patient with hepatomegaly or hepatolienal syndrome." (full-time course)

Development of plan of examination, the role of instrumental and laboratory methods of examination (ultrasound, Doppler ultrasonography, CT, liver biopsy, liver tests, viral markers). Differential diagnostic of hepatolienal syndrome in the case of diseases of the liver, liver blood vessels, blood.

pr.tr.45 "Management of patient with hepatomegaly" (full-time course)

The management of patients according to the cause, differentiated therapy. Indications for surgical treatment. Primary and secondary prevention. Prognosis and working capacity. The study of this topic involves training of skills connected with the collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, theoretical work in the classroom (discussion of situational tasks). Using instrumental (work with EFGDS, ultrasound data) and laboratory methods examination with further discussing of the results. Technique of carrying out and interpretation of ultrasound, CT of the abdominal cavity and small pelvis, EFGDS in the departments of the medical institution. Using a virtual simulation of gastroduodenoscopy.

Topic 19. Management of patient with portal hypertension.

pr.tr.46 "Examination in patient with portal hypertension. Differential diagnosis." (full-time course)

Development of plan of examination, the role of instrumental and laboratory methods of examination (endoscopy, ultrasound, Doppler ultrasonography, CT, liver biopsy, viral markers). Differential diagnosis of conditions caused portal hypertension. The management of patients according to the cause, differentiated therapy.

pr.tr.47 "Treatment standards in portal hypertension." (full-time course)

The management of patients according to the cause, differentiated therapy. Indications for endoscopic and surgical treatment (laparocentesis, shunt surgery, liver transplantation). The study of this topic involves training of skills connected with the collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, theoretical work in the classroom (discussion of situational tasks). Using instrumental (work with EFGDS, ultrasound data) and laboratory methods examination with further discussing of the results. Technique of carrying out and interpretation of ultrasound, CT of the abdominal cavity and small pelvis, EFGDS in the departments of the medical institution. Using a virtual simulation of gastroduodenoscopy.

Topic 20. Management of patient with bronchoobstructive syndrome.

pr.tr.48 "Methods of examination for patients with bronchoobstructive syndrome. Differential diagnosis of conditions accompanied by bronchoobstructive syndrome." (full-time course)

Development of plan of examination, the role of instrumental and laboratory methods of examination (peak flow and spirometry, spirometry, X-Ray, CT, bronchoscopy). Differential diagnosis of bronchial asthma, COPD, bronchiectasis.

pr.tr.49 "Evidence-based management of patients with bronchoobstructive syndrome."

The management of patients according to the cause, differentiated therapy. Non-pharmacological and pharmacological treatment. Primary and secondary prevention. Prognosis and working-capacity. The study of this topic involves training of skills connected with collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, questionnaires, theoretical work in the classroom (solving of situational tasks). Using of instrumental (doing spirometry, peak flowmetry, work with X-Ray and chest CT) and laboratory methods examination with further discussing of the results. Using virtual simulation of bronchoscopy.

Topic 21. Management of patient with infiltrative pulmonary obscurity, pleural effusion.

pr.tr.50 "Differential diagnosis of conditions accompanied with the presence of pulmonary infiltrate. The management of patients with infiltrative pulmonary opacities." (full-time course)

Development of plan of examination, the role of instrumental and laboratory methods of examination (X-Ray, CT, bronchoscopy, biopsy, sputum cultures). The management of patients according to the cause, differentiated therapy. Evidence-based treatment. Primary and secondary prevention. Prognosis and working capacity.

pr.tr.51 "The management of patient with pleural effusion." (full-time course)

Differential diagnosis of conditions accompanied by the presence of pleural effusion. (tuberculosis, bronchial tumors, thromboembolism of the branches of the pulmonary artery, heart failure, acute pancreatitis, liver cirrhosis, trauma, diffuse connective tissue diseases, etc.). Updated standards of diagnostic. Development of plan of examination, instrumental and laboratory methods of examination (X-Ray, CT, bronchoscopy, ultrasound, echocardiography, clinical and biochemical tests). The management of patients according to the cause, differentiated therapy. Relative and absolute indications for pleural puncture. Non-pharmacological and pharmacological treatment. The study of this topic involves training of skills connected with collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, theoretical work in the classroom (discussion of situational tasks). Using of instrumental (doing spirometry, work with X-Ray and chest CT) and laboratory methods examination with further discussing of the results.

Topic 22. Management of patient with pneumonia.

pr.tr.52 "The management of patient with community-acquired pneumonia. The management of patient with hospital-acquired pneumonia." (full-time course)

Differential diagnosis between bacterial and viral pneumonia, between pneumonia and tuberculosis, lung tumors, pulmonary infarction, etc. Development of plan of examination, instrumental and laboratory methods of examination (X-Ray, CT, bronchoscopy, clinical and biochemical tests, sowing sputum). The management of patients according to the cause, therapy of pregnant women. Evidence-based treatment standards. Primary and secondary prevention. Prognosis and working capacity. Risk factors of hospital-acquired pneumonia. The plan of examination, instrumental and laboratory methods of examination (X-Ray, CT, pulse oximetry, clinical and biochemical tests, sowing sputum). The management of patients according to the resistance of the microflora, differentiated therapy. Methods of respiratory support. Primary and secondary prevention. Prognosis and working-capacity.

pr.tr.53 "The management of patient with pneumonia in the case of immunodeficiency." (full-time course)

Diagnosis and treatment of a patient with systemic candidosis, pneumocystis pneumonia. The study of this topic involves training of skills connected with collection of complaints, anamnesis, physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, pulse oximeter, questionnaires, theoretical work in the classroom (discussion of situational tasks). Using of instrumental (doing spirometry, work with X-Ray and chest CT) and laboratory methods examination with further discussing of the results.

Topic 23. Management of patient with chronic complications of diabetes mellitus.

pr.tr.54 "Chronic complications of diabetes mellitus. Evidence-based treatment of patients with diabetes." (full-time course)

Diabetic nephropathy, stages, diagnosis, differential diagnosis, treatment and prevention. Diabetic retinopathy: stages of the process, diagnosis, prevention and treatment. Diabetic neuropathy, classification, diagnosis and treatment. Diabetic angiopathy of the vessels of the lower extremities. Diabetic foot: classification, diagnosis, treatment. Bone, joint and skin complications. Detection of concomitant diseases in patients with diabetes. Lifestyle modification. Antidiabetic drugs for the treatment of type 2 diabetes. Regimens of insulin therapy: traditional and intensified insulin therapy. Complications of insulin therapy.

pr.tr.55 "The management of some categories of patients with diabetes mellitus." (full-time course)

Principles of treatment of pregnant women with diabetes. Features of urgent and planned surgical interventions in patients with diabetes mellitus. The study of this topic involves curation of patients with diabetes or applying of role-playing games in the case of quarantine in the hospital using of height meter, tonometer, glucometer, theoretical work in the classroom (solving of situational tasks). Using of laboratory (microalbuminuria) and instrumental methods of examination (using of capillaroscope, pulse examination on a. dorsalis pedis, a. tibialis posterior, shin-shoulder (ischemic) index. Assessment of vibration sensitivity by tuning fork, proprioceptive, pain sensation by pin, tactile sensitivity by a piece of cotton wool, discriminant, and temperature sensitivity. Assessment of muscle resistance, tendon reflexes, detection of contractures. Detection of orthostatic hypotension with further discussing of the results. To interpret the data of body mass index, ophthalmoscopy, capillaroscopy, urine tests, condition of nitrogen-releasing renal function, renal blood flow, tubular reabsorption

Topic 24. Management of patient with metabolic syndrome.

pr.tr.56 "Examination in patient with metabolic syndrome. Non-pharmacological treatment in metabolic syndrome." (full-time course)

Definition, classification, diagnostic criteria, the topicality of the problem in the world. Development of plan of examination, instrumental and laboratory methods of examination. Non-pharmacological treatment in metabolic syndrome.

pr.tr.57 "The management of patients with metabolic syndrome." (full-time course)

Pharmacological treatment. Primary and secondary prevention. Prognosis and working-capacity. The study of this topic involves curation of patients with metabolic syndrome or applying of role-playing games in the case of quarantine in the hospital using of height meter, scales, tonometer, glucometer, theoretical work in the classroom (discussion of situational tasks). Using of laboratory (microalbuminuria, lipid profile) and instrumental methods of examination (using of capillaroscope, pulse examination on a. dorsalis pedis, a. tibialis posterior, shin-shoulder (ischemic) index. Assessment of vibration sensitivity by tuning fork, proprioceptive, pain sensation by pin, tactile sensitivity by a piece of cotton wool, discriminant, and temperature sensitivity. Assessment of muscle resistance, tendon reflexes, detection of contractures. Detection of orthostatic hypotension with further discussing of the results. To interpret the data of body mass index, ophthalmoscopy, capillaroscopy, urine tests, condition of nitrogen-releasing renal function, renal blood flow, tubular reabsorption with further discussing of the results.

Topic 25. Management of patient with Goiter

pr.tr.58 "Examination in patients with goiter. Differential diagnosis in nodular forms of goiter. The management of patient with Goiter." (full-time course)

Methods of assessment of the functional condition of the thyroid gland and additional examination in the case of presence of nodules in the thyroid glands. The interpretation of the diagnosis of hypothyroidism, thyrotoxicosis. Differential diagnosis of Graves' disease and functional autonomy of the thyroid gland. Differential diagnosis of thyroiditis with acute and subacute clinical course. Chronic thyroiditis. The interpretation of the diagnosis of autoimmune thyroiditis. Nodular forms of goiter. Monitoring of patients with thyroid nodules. Pathomorphological classification of thyroid tumors. Differentiated treatment of patients with Goiter. Medical, surgical treatment of toxic goiter, use of ¹³¹-iodine for therapeutic aim. The study of this topic involves training of skills connected with the collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, tonometer, and theoretical work in the classroom (solving of situational tasks in differential diagnosis and management). Using of instrumental (ultrasound) and laboratory methods of examination (assessment of blood) with further discussion of the results.

Topic 26. Management of patient with urinary syndrome.

pr.tr.59 "Definition and characteristics of components of urinary syndrome. Differential diagnosis in urinary syndrome." (full-time course)

Development of plan of examination, instrumental and laboratory methods of examination. Characteristics of the urinary syndrome in the case of pyelonephritis, glomerulonephritis, myeloma. Differential diagnosis of hematuria, leukocyturia, and proteinuria.

pr.tr.60 "Treatment standards." (full-time course)

The management of patients according to the cause, differentiated therapy. Non-pharmacological and pharmacological treatment. Primary and secondary prevention. Prognosis and working-capacity. The study of this topic involves training of skills connected with collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, tonometer, and theoretical work in the classroom (solving of situational tasks). Using of instrumental and laboratory methods of examination (assessment of blood and urine dipstick tests) with further discussion of the results. Applying of peritoneal dialysis in nephrological department of the medical institution (according to the agreement of cooperation between medical institution and university).

Topic 27. Management of patient with nephrotic syndrome.

pr.tr.61 "The management of patient with edema. Diagnostic criteria and differential diagnosis." (full-time course)

Differential diagnosis of edema with different causes (cardiac, renal, alimentary, etc.). Development of plan of examination, the role of instrumental and laboratory methods of examination (ultrasound, X-Ray, ECG, clinical and biochemical blood and urine tests). The management of patients according to the cause, differentiated therapy. Treatment. Advantages and disadvantages of diuretic therapy. Treatment standards. Primary and secondary prevention. Prognosis and working-capacity. Definition, etiology, pathogenesis of nephrotic syndrome. Clinical features. Development of plan of examination, instrumental and laboratory methods of examination. Diagnostic criteria and differential diagnosis.

pr.tr.62 "The management of patient with nephrotic syndrome." (full-time course)

The management of patients, non-pharmacological and pharmacological treatment. Evidence-based treatment standards. Primary and secondary prevention. Prognosis and working capacity. The study of this topic involves training of skills connected with collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, tonometer, and theoretical work in the classroom (solving of situational tasks). Using of instrumental and laboratory methods of examination (assessment of blood and urine dipstick tests) with further discussion of the results. Applying of peritoneal dialysis in nephrological department of the medical institution (according to the agreement of cooperation between medical institution and university).

Topic 28. Management of patient with chronic kidney disease.

pr.tr.63 "The definition of «chronic kidney disease». Differential treatment of chronic kidney disease according to different stages." (full-time course)

Pathogenesis of organs and systems disorders, its clinical features. Clinical features and changes in laboratory parameters according to the stage. Evidence-based treatment of hypertensive syndrome, anemias, infectious complications, calcium metabolism disturbances, and osteodystrophy.

pr.tr.64 "Renal replacement therapy: hemodialysis, kidney transplantation." (full-time course)

Indications and contraindications for hemodialysis. Complications. Primary and secondary prevention. Prognosis and working-capacity. The study of this topic involves training of skills connected with collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, tonometer, and theoretical work in the classroom (discussion of situational tasks). Using of instrumental and laboratory methods of examination (assessment of blood and urine dipstick tests) with further discussion of the results. Applying of hemodialysis, peritoneal dialysis in the nephrological department of the medical institution (according to the cooperation agreement between medical institution and university), virtual simulation (watching video about hemodialysis).

Topic 29. Management of patient with anemia.

pr.tr.65 "Diagnostic of anemias." (full-time course)

Diagnostic and differential diagnostic criteria of iron deficiency and B12 deficiency anemia. The main causes of iron deficiency. Development of plan of examination, the role of laboratory methods of examination of iron deficiency and B12 deficiency anemia. Diagnostic criteria and management of patients with chronic inflammatory anemia. Differential diagnosis of microcytic anemias.

pr.tr.66 "The management of patients with anemia caused by hematopoietic disorders." (full-time course)

Non-pharmacological and pharmacological treatment. Indications for blood transfusion. Evidence-based treatment standards. Primary and secondary prevention. Prognosis and working-capacity.

pr.tr.67 "The management of patients with hemolytic anemias." (full-time course)

Diagnostic criteria and evidence-based management of patients with acquired hemolytic anemias. The study of this topic involves training of skills connected with the collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital, and theoretical work in the classroom (discussion of situational tasks). Using instrumental and laboratory (assessment of blood analysis) methods of examination with further discussing of the results. Applying transfusions of blood components, plasma, bone marrow biopsy called sternal puncture in the hematological department of the medical institution (according to the agreement of cooperation between medical institution and university), virtual simulation (watching video about sternal puncture).

Topic 30. Management of patient with leukemoid reaction and leukemia.

pr.tr.68 "The management of patients with acute leukemias." (full-time course)

The differential diagnosis of leukemia and leukemoid reaction. Principles of differentiated treatment. Diagnostic criteria and evidence-based management of patients with acute lymphoblastic leukemia, acute myeloblastic leukemia.

pr.tr.69 "The management of patients with chronic leukemias." (full-time course)

Evidence-based management of patients with chronic myeloid leukemia, chronic lymphocytic leukemia. Bone marrow transplantation. Supportive therapy. Primary and secondary prevention. Prognosis and working-capacity.

pr.tr.70 "Complications on the background of treatment of hematological diseases." (full-time course)

The management of patient with tumor lysis syndrome, anemia caused by chemotherapy, with febrile neutropenia. The management of a patient with extravasation in the place of chemotherapy. The management of a patient with dyspeptic disorders on the background of chemotherapy. The study of this topic involves training of skills connected with collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital with using of phonendoscope, tonometer or applying of role-playing games in the case of quarantine in the hospital, and theoretical work in the classroom (discussion of situational tasks). The using of instrumental (ultrasound) and laboratory (assessment of blood analysis, bone marrow examination) methods of examination with further discussing of the results. Applying of bone marrow biopsy (trephine biopsy) in hematological department of the medical institution (according to the agreement of cooperation between medical institution and university), virtual simulation (watching video about trephine biopsy).

Topic 31. Management of patient with lymphadenopathy.

pr.tr.71 ""The main causes of lymphadenopathy." (full-time course)" (full-time course)

Differential diagnosis of Hodgkin's and non-Hodgkin's lymphoma, lymph node enlargement in the case of other diseases (tuberculosis, sarcoidosis, metastasis of malignant tumors, SLE, etc.).

pr.tr.72 ""Evidence-based treatment." (full-time course)" (full-time course)

The treatment strategy, non-pharmacological and pharmacological treatment. Primary and secondary prevention. Prognosis and working capacity. The study of this topic involves training of skills connected with the collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital, and theoretical work in the classroom (discussion of situational tasks). The using of instrumental (CT) and laboratory (assessment of blood and urine dipstick tests) methods of examination with further discussion of the results. Discussion of management and prescription of treatment with infusomat. The interpretation of CT data in the medical institution.

Topic 32. Management of patient with hemorrhagic syndrome

pr.tr.73 "The differential diagnosis of hemorrhagic syndrome. Hemorrhagic diathesis caused by vascular wall damage." (full-time course)

Development of plan of examination, instrumental and laboratory methods of examination (clinical blood test, autoimmune markers, coagulogram, blood culture). Evidence-based management of patients according to the cause. The management of patients with coagulopathies (congenital - hemophilia A and B, Willebrand's disease, and acquired). Management of patients with hemorrhagic telangiectasia, hemorrhagic vasculitis such as Henoch-Sch.

pr.tr.74 "Management of a patient with disorders of platelets and vascular stasis." (full-time course)

Differential diagnosis of thrombocytopenia in CTD, allergic reactions, leukemias and hypoplastic anemia, disseminated intravascular coagulation (DIC) syndrome, sepsis, HIV. The management of patients, updated treatment standards. Hemorrhagic diathesis caused by the impaired coagulation and platelet stasis. Diagnostic criteria and management of a patient with DIC syndrome. The study of this topic involves training of skills connected with the collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital or applying role-playing in the case of quarantine in the hospital with using of phonendoscope, tonometer, and theoretical work in the classroom (discussion of situational tasks). The using of instrumental and laboratory (assessment of blood analysis, bone marrow examination) methods of examination with further discussion of the results.

Topic 33. Management of patients with thrombocytopenic purpura and polycythemia.

pr.tr.75 "Differential diagnosis and management in purpura" (full-time course)

Management of patients with thrombocytopenic purpura (Werlhof's disease). The study of this topic involves training of skills connected with the collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital or applying role-playing in the case of quarantine in the hospital with using of phonendoscope, tonometer, and theoretical work in the classroom (discussion of situational tasks). The using of instrumental and laboratory (assessment of blood analysis, bone marrow examination) methods of examination with further discussion of the results. Differential diagnosis between polycythemia vera and secondary polycythemia. Differential diagnosis between polycythemia vera and chronic myelogenous leukemia, essential thrombocythemia, osteomyelofibrosis. Evidence-based treatment of polycythemia vera. Indications to phlebotomy. Cytoreductive therapy. Prognosis (survival and risk of transformation to myelofibrosis and acute myeloid leukemia). Working-capacity. The study of this topic involves training of skills connected with the collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital or applying role-playing in the case of quarantine in the hospital with using of phonendoscope, tonometer, and theoretical work in the classroom (discussion of situational tasks). The using of instrumental and laboratory (assessment of blood analysis, bone marrow examination)

Topic 34. Performance of practical skills and manipulations. Differentiated credit

pr.tr.76 "Performance of practical skills and manipulations." (full-time course)

Performance of practical skills and manipulations.

pr.tr.77 "Performance of practical skills and manipulations." (full-time course)

Performance of practical skills and manipulations.

pr.tr.78 "Final assessment: Differentiated credit" (full-time course)

Evaluation of theoretical answers (solving of situational tasks, differential diagnosis, treatment, further tactics) and practical training of applicants: skills of collecting complaints, anamnesis, physical examination of an outpatient/inpatient or using role-playing, interpretation of instrumental and laboratory methods.

Topic 35. Curation of the patient with Hypertensive emergency.

pr.tr.79 "Criteria for hypertensive emergency." (full-time course) The management of patients with emergency hypertensive crisis. Evidence-based algorithm of emergency care. The prevention of complicated arterial hypertension. Differential approach to the prescription of emergency drugs.
pr.tr.80 "Therapeutic approach to emergency care in patients with hypertensive emergency." (full-time course) Treatment of hypertensive crisis complicated with acute coronary failure, aortic aneurysm dissection. Pharmacological tactics in patients with hypertensive crisis complicated by ischemic brain injury and subarachnoid hemorrhage.
pr.tr.81 "Emergency care for patients with pulmonary edema." (full-time course) Standards for diagnosis and emergency treatment of pulmonary edema at pre-hospital and hospital care. Treatment strategy according to the level of blood pressure. Further management of patients. The study of this topic involves training of skills connected with collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital with using of phonendoscope, tonometer, and theoretical work in the classroom (discussion of situational tasks). The using of instrumental (ECG, chest CT) and laboratory (applying of glucometer, assessment of electrolyte changes, levels of hormones) methods of examination with further discussing of the results for risk stratification. Applying oxygen therapy, interpretation of the results of X-ray, heart, and vessels ultrasound in the departments of the medical institution. Doing of intravenous injections.
Topic 36. Curation of the patient with acute coronary syndrome and myocardial infarction (MI).
pr.tr.82 "The diagnostic and emergency care for patients with ACS." (full-time course) Criteria of diagnosis verification. Evidence-based emergency care in the pre-hospital and hospital stages in patients with ST-segment elevation myocardial infarction and non-ST segment elevation myocardial infarction with unstable angina.
pr.tr.83 "Invasive treatment strategy in ACS." (full-time course) Indications for percutaneous coronary interventions, contraindications, possible complications.
pr.tr.84 "Thrombolytic therapy." (full-time course) Indications and contraindications. Schemes of thrombolytic agents prescription. Prognosis, primary, secondary prevention and rehabilitation measures. The study of this topic involves training of skills connected with the collection of complaints, anamnesis, and physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital with using of phonendoscope, tonometer for blood pressure measurement, pulse oximeter and theoretical work in the classroom (solving of situational tasks in teams). The using of instrumental (ECG) and laboratory (applying of glucometer, assessment of lipid profile indicators, troponins) methods of examination with further discussing of the results for risk stratification. Applying and interpreting of the results heart and vessels ultrasound in the departments of the medical institution. Doing intravenous injections.
Topic 37. Curation of the patient with myocardial infarction complications.

pr.tr.85 "The diagnostic of MI complications." (full-time course) The interpretation of the results of laboratory and instrumental examination during cardiogenic shock and other MI complications.
pr.tr.86 "Emergency care of cardiogenic shock" (full-time course) Evidence-based standards of emergency care of cardiogenic shock in pre-hospital and hospital stages. Follow up management of the patients.
pr.tr.87 "Emergency care of heart rhythm and conduction disorders." (full-time course) The role of electropulse therapy. Indications and principles of cardiac pacing (temporary, permanent). The study of this topic involves training of skills connected with a physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital with using of phonendoscope, tonometer for blood pressure measurement, pulse oximeter and theoretical work in the classroom (team-work in solving of situational tasks). The use of instrumental (work with an electrocardiograph, ECG data) and laboratory (applying of glucometer, assessment of INR, APTT, lipid profile indicators, biomarkers) methods of examination with further discussing of the results for risk stratification. Discussing management and prescription of treatment. Doing intravenous injections. Doing cardiopulmonary resuscitation in the simulation room and applying virtual simulation (watching video about the methodology of radiofrequency catheter ablation, electrical cardioversion, pacing).
Topic 38. Curation of the patient with paroxysmal heart rhythm and conduction disorders.
pr.tr.88 "The diagnostic of paroxysmal heart rhythm disorders." (full-time course) The role of instrumental methods of examination. Algorithm of diagnostic. Differential diagnostic.
pr.tr.89 "The diagnostic of conduction heart disorders." (full-time course) The role of instrumental methods of examination. Algorithm of diagnostic. Differential diagnostic.
pr.tr.90 "Management strategy of patients with paroxysmal heart rhythm or conduction disorders." (full-time course) Non-pharmacological and pharmacological evidence-based treatment at the pre-hospital and hospital stages. Electropulse therapy. Standards of primary and secondary prevention, prognosis, and working capacity. The study of this topic involves training of skills connected with a physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital with using of phonendoscope, tonometer for blood pressure measurement, pulse oximeter and theoretical work in the classroom (team-work in solving of situational tasks). Applying instrumental (work with echocardiograph, results of ECG) methods of examination with further discussing of the results. Discussion of management and prescription of treatment. Doing intravenous injections. Applying of virtual simulation (watching video about the methodology of radiofrequency catheter ablation, electrical cardioversion, pacing). Work in the simulation class (technique of cardiopulmonary resuscitation for ventricular fibrillation, ventricular tachycardia, pulseless electrical activity, asystole in adults according to the protocol of the European Council of Resuscitation).

Topic 39. Curation of the patient with acute thrombosis
pr.tr.91 "The management of patients with mesenteric vascular thrombosis, deep vein thrombosis, superior vena cava thrombosis." (full-time course) Diagnostic criteria of mesenteric vascular thrombosis, deep vein thrombosis of lower extremities, thrombosis of the superior vena cava. Emergency care. The study of this topic involves training of skills connected with physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital with using of phonendoscope, tonometer for blood pressure measurement, pulse oximeter and theoretical work in the classroom. Work in simulation center with electrocardiograph, pulse oximeter, results of ECG, heart ultrasound, chest CT. The assessment of laboratory data (INR, APTT, D-dimer) with further discussion of the results and prescription of treatment. Doing of intravenous injections. Interpretation of the results of chest CT and vascular ultrasound in the departments of medical institution
Topic 40. Curation of the patient with pulmonary embolism. Treatment strategy in sudden cardiac death (SCD).
pr.tr.92 "The diagnostic of pulmonary embolism (PE)." Standards of evidence-based emergency diagnostic in PE.
pr.tr.93 "Treatment of PE." (full-time course) Evidence-based treatment of PE in pre-hospital and hospital stages. Follow-up management of the patients
pr.tr.94 "The emergency care of sudden cardiac death (SCD)." (full-time course) Standards of emergency diagnostic and treatment of sudden cardiac death in pre-hospital and hospital stages. Technique of resuscitation measures. Defibrillation. Further management of the patients. The study of this topic involves training of skills connected with physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital with using of phonendoscope, tonometer for blood pressure measurement, pulse oximeter and theoretical work in the classroom. Work in simulation center with electrocardiograph, pulse oximeter, results of ECG, heart ultrasound, chest CT. The assessment of laboratory data (INR, APTT, D-dimer) with further discussing of the results and prescription of treatment. Doing of intravenous injections. Doing and interpretation of the results of chest CT and echocardiography in the departments of medical institution (according to the agreement on cooperation between the medical institution and university) or applying of virtual simulation (watching video about the methodology of CT angiography of coronary arteries, respiratory support).
Topic 41. Curation of the patient with emergencies in rheumatology.

pr.tr.95 "Indications for emergency care in rheumatology. Emergency care in rheumatology." (full-time course)

The interpretation of results of laboratory and instrumental investigations, objective signs of severe and terminal stage of systemic lupus erythematosus, antiphospholipid syndrome, dermato- and polymyositis, systemic vasculitis. Pulse therapy with corticosteroids and cytostatics in patients with connective tissue diseases and systemic vasculitis. Indications and methods of extracorporeal blood purification. Indications and methods of intravenous immunoglobulins injection. The study of this topic involves theoretical work in the classroom (tests, discussion of situational tasks), training of skills connected with collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital using of phonendoscope, the tonometer, activity assessment scales. Using of instrumental (work with X-Ray, chest CT) and laboratory (assessment of serological markers, blood analysis, urine dipstick test) methods of examination with further discussing of the results. Discussing of management and prescription of treatment with using of infusomat.

Topic 42. Curation of the patient with acute back pain and acute kidney injury (AKI).

pr.tr.96 "Differential diagnostic of acute back pain and curation of the patients." (full-time course)

Differential diagnostic of acute back pain in diseases of the heart, aorta, respiratory system, gastrointestinal tract, kidneys, urinary tract and pelvic. Differential diagnostic of acute back pain in patients with musculoskeletal disorders and peripheral nervous system diseases. Updated diagnostic and evidence-based treatment standards. Tactics of treatment according to the location and character of disorders. The study of this topic involves theoretical work in the classroom (tests, discussion of situational tasks), training of skills connected with collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital. Using of instrumental (work with X-Ray of joints) and laboratory (assessment of blood analysis, urine dipstick test) methods of examination with further discussing of the results. Discussing of management and prescription of treatment. Applying and interpretation of the results of X-Ray, MRI and ultrasound examination of joints in the departments of the medical institution (according to the agreement of cooperation between medical institution and university)

Topic 43. Curation of the patient with severe exacerbation of bronchial asthma (BA), acute allergic reactions.

pr.tr.97 "The management of patients with severe exacerbation of (BA)." (full-time course)

Assessment of asthma exacerbation severity. Self-management of asthma exacerbation and evaluation of response to therapy. Evidence-based treatment of asthma exacerbations in general practice and the emergency department.

pr.tr.98 "The management of patients with anaphylactic shock." (full-time course)

The diagnostic, evidence-based treatment, and prevention of anaphylactic shock.

pr.tr.99 "Management of a patient with generalized urticaria and Quincke's edema." (full-time course)

The diagnostic and treatment of generalized urticaria and Quincke's edema. The study of this topic involves training of skills connected with physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital with using of phonendoscope, tonometer for blood pressure measurement, pulse oximeter and theoretical work in the classroom. Applying instrumental methods of examination (work with echocardiograph). Doing conicotomy and endotracheal intubation in the simulation room. Doing intravenous injections.

Topic 44. Curation of the patient with emergencies in diabetes mellitus.

pr.tr.100 "Management of patients with hypoglycemic coma. Management of patients with diabetic coma." (full-time course)

Diagnostic criteria and evidence-based management. Complications and consequences of severe hypoglycemia. Diagnostic criteria and evidence-based management of patients with hyperglycemic hyperosmolar non-ketoacidosis coma. Diagnostic criteria and evidence-based management in ketoacidosis coma. Monitoring of the patients.

pr.tr.101 "Diagnostic criteria and management of patients with lactic acidemic coma." (full-time course)

The differential diagnostic of different variants of coma in patients with diabetes mellitus. The study of this topic involves training of skills connected with physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital with using of phonendoscope, tonometer for blood pressure measurement, pulse oximeter and theoretical work in the classroom. Applying of instrumental (work with the echocardiograph, the glucometer) and interpretation of laboratory (blood and urine analysis, electrolytes) methods of examination. Doing of intravenous injections, oxygen therapy.

Topic 45. Curation of the patient with syncope.

pr.tr.102 "Curation of the patient with syncope." (full-time course)

Criteria of syncope associated with heart rhythm and conduction disorders. Criteria of syncope associated with cardiovascular diseases. Criteria of syncope associated with orthostatic hypotension, neurogenic syncope. Instrumental methods for verification of syncope. Differential diagnosis of syncope. Treatment of reflex syncope, orthostatic hypotension. Treatment of arrhythmogenic syncope. The place of pacing, catheter ablation, antiarrhythmic therapy with implantable cardioverter-defibrillator. The essence of performing maneuvers to prevent syncope (horizontal position, techniques with physical pressure, cough suppression, sneezing, tilt-training). The study of this topic involves training of skills connected with physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital with using of phonendoscope, tonometer for blood pressure measurement, pulse oximeter and theoretical work in the classroom. Work in simulation room with echocardiograph, pulse oximeter, results of ECG and heart ultrasound. Doing of intravenous injections. Doing and interpretation the results of echocardiography in the departments of medical institutions or applying of virtual simulation (watching video about the methodology of radiofrequency catheter ablation, cardiac pacing)

Topic 46. Curation of the patient with acute adrenal insufficiency, thyrotoxic crisis, myxedema coma.

pr.tr.103 "The management of patients with acute adrenal insufficiency." (full-time course) Diagnostic criteria and evidence-based management of patients with acute adrenal insufficiency. Peculiarities of clinical manifestations of Waterhouse-Friderichsen Syndrome.
pr.tr.104 "Emergency care for patients with thyrotoxic crisis and myxedema coma." (full-time course) Diagnostic criteria and evidence-based management of patients with thyrotoxic crisis. Diagnostic criteria and management of patients with severe hypothyroidism (myxedema coma). The study of this topic involves training of skills connected with physical examination of patients in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital with using of phonendoscope, tonometer for blood pressure measurement, pulse oximeter and theoretical work in the classroom (solving of situational tasks in teams). Applying of instrumental (work with echocardiograph) and interpretation of laboratory (electrolytes) methods of examination. Doing of intravenous injections, oxygen therapy.
Topic 47. Curation of the patient with acute abdominal pain.
pr.tr.105 "Diagnostic algorithm in acute abdominal pain. Medical tactics at acute abdominal pain." (full-time course) Diagnostic criteria for acute pancreatitis. Complications. Criteria for diagnosis of acute small bowel ischemia, peptic ulcer disease, gallstones and choledocholithiasis. Complications of peptic ulcer disease. Criteria for diagnosis of aortic aneurism. Management of patients in acute complications of pancreatitis, ulcer disease, choledocholithiasis, aortic aneurism. The study of this topic involves theoretical work in the classroom (tests, discussion of situational tasks), training of skills connected with the collection of complaints, anamnesis, physical examination in ambulatory care/hospital or applying of role-playing games in the case of quarantine in the hospital. Using of instrumental (work with X-Ray films) and laboratory (assessment of blood analysis, urine dipstick test) methods of examination with further discussing of the results. Discussion of management and prescription of treatment. Applying and interpretation the results of X-Ray, MRI, CT and ultrasound examination.
Topic 48. Performance of practical skills and manipulations. Differentiated credit
pr.tr.106 "Performance of practical skills and manipulations." (full-time course) Performance of practical skills and manipulations
pr.tr.107 "Performance of practical skills and manipulations" (full-time course) Performance of practical skills and manipulations
pr.tr.108 "Final assessment: Differentiated credit" (full-time course) Evaluation of theoretical answers (discussion of situational tasks, differential diagnosis, treatment, further tactics) and practical training of applicants: skills of collecting complaints, anamnesis, physical examination of an outpatient/inpatient or using role-playing, interpretation of instrumental and laboratory methods.

9. Teaching methods

9.1 Teaching methods

Course involves learning through:

TM1	Electronic learning
TM2	Case-based learning (CBL)
TM3	Team-based learning (TBL)
TM4	Research Based Learning
TM5	Practical training
TM6	Self-study

The discipline is taught using advanced teaching methods that contribute to developing professional skills aimed at training practice-oriented specialists and stimulating scientific activity.

Ability to abstract thinking, analysis and synthesis. Ability to learn and master modern knowledge, applying it in practice. Knowledge and understanding of the subject area and professional activity comprehension. Ability to adapt and act in a new situation. Ability to make reasoned decisions; work in a team; skills in interpersonal relationships. Ability to use information and communication technologies. Determination and persistence to the tasks and commitments undertaken.

9.2 Learning activities

LA1	Examination of patients at the suitable specialized department
LA2	The interpretation of instrumental (spirograms, ECG, echocardiography, coronary angiography, X-Ray/CT/ultrasound/MRI of joints, chest, abdomen, endoscopy of GIT) and laboratory results (blood, sputum, urine, bone marrow).
LA3	E-learning on platforms (Google Meet, MIX.sumdu.edu.ua)
LA4	Analysis of clinical cases
LA5	Preparing to presentation and reporting
LA6	Working with text-books and relevant information resources
LA7	Performing a group practical task
LA8	Individual research project (student research project, thesis, article)
LA9	Preparing to Objective Structured Clinical Examination (OSCE).
LA10	Preparation for practical classes
LA11	Self-study

10. Methods and criteria for assessment

10.1. Assessment criteria

Definition	National scale	Rating scale
Outstanding performance without errors	5 (Excellent)	$170 \leq RD \leq 200$
Above the average standard but with minor errors	4 (Good)	$164 \leq RD < 169$
	4 (Good)	$140 \leq RD < 163$
Fair but with significant shortcomings	3 (Satisfactory)	$127 \leq RD < 139$

	3 (Satisfactory)	$120 \leq RD < 126$
Fail – some more work required before the credit can be awarded	2 (Fail)	$70 \leq RD < 119$
	2 (Fail)	$0 \leq RD < 69$

10.2 Formative assessment

	Description	Deadline, weeks	Feedback
FA1 Peer assessment	Partnership interaction aimed at improving the results of educational activities by comparing one's own current level of success with previous indicators. Provides an opportunity to analyze one's own educational activities	During the entire period of studying the discipline	Adjustment of approaches to learning together with students, taking into account the results of the assessment
FA2 Surveys and oral comments of the teacher on its results	The instructions reveal methods of pedagogical control over the professional activities of applicants. Efficiency is determined by compliance with all stages of practical tasks. The effectiveness of the formation of the necessary practical skills and abilities depends on the level of formation of practical competence.	During the entire period of studying the discipline	Counseling of students in working with a standardized patient, direct and indirect observation of the work of applicants "at the bedside" of the patient with subsequent determination of the level of practical training
FA3 The task of assessing the level of theoretical training	Assessment of acquired theoretical knowledge on the subject of the discipline. It is conducted at each practical session in accordance with the specific goals of each topic based on a comprehensive assessment of the student's activity, which includes monitoring the level of theoretical training, performing independent work according to the thematic plan	During the entire period of studying the discipline	Feedback is aimed at supporting students' independent work, identifying shortcomings and assessing the level of acquired theoretical knowledge

FA4 Testing	A method of effectively checking the level of assimilation of knowledge, abilities and skills in an educational discipline. Testing allows you to check the results of learning after completing the topic.	During the entire period of studying the discipline	The minimum percentage of successful passing of tests is 60% of correct answers.
FA5 Solving situational tasks	The case method allows you to reveal and form the qualities and abilities of medical students necessary for further work, forms clinical thinking, analytical abilities, independence in decision-making, communication, skills for working with a sufficiently large amount of information.	During the entire period of studying the discipline	assessment of student abilities to clinical thinking, substantiating one's decisions, expressing one's opinions clearly, determining the level of theoretical training
FA6 Defense of individual research project (report on the student's scientific conference or scientific work contest)	An important factor in the formation of professional qualities of future specialists is the research work of students. Involvement of the latter in research activities contributes to the formation of their scientific worldview, diligence, capacity for work, initiative, etc. Teacher's oral comments. The student	During the entire period of studying the discipline	Teacher's oral comments. The student is given additional incentive points (from 5 to 10), depending on the type of research project
FA7 Discussions in focus groups	The method makes it possible to involve all participants in the process of discussion and justification of one's own opinion through multilateral communication, to develop the ability to conduct a professional discussion, to cultivate respect for colleagues and the ability to generate alternative ideas and proposals.	During the entire period of studying the discipline	Assessment of the student's ability to work in a team, ability to justify their decisions, determination of the level of theoretical training, which is reflected in the corresponding assessment

FA8 Practical skills test	Practicing practical skills on various mannequins and simulators.	During the entire period of study. At the last lesson, the student must successfully perform practice	Feedback is aimed at supporting students' independent work, identifying shortcomings and assessing the level of acquired practical skills
FA9 Counseling of the teacher during the preparation of the presentation and speech	An important factor in the formation of professional qualities of future specialists is the ability to clearly formulate and express one's opinion, the use of modern techniques of oratory. Involvement of applicants in the preparation of their own reports contributes to the formation of the above-mentioned skills.	During the entire period of studying the discipline	Correction together with the applicants of approaches to the preparation of the report and speech plan.
FA10 Analysis of understanding indicators of laboratory and instrumental examination methods	A key factor in conducting differential diagnosis is a comprehensive assessment of the patient's condition, taking into account the results of laboratory and instrumental examinations.	During the entire period of studying the discipline	Providing comments by the teacher on the correctness of the applicant's interpretation of the examination results and further discussion of disagreements.
FA11 Preparation for differentiated assessment	Preparation for differentiated assessment	During the entire period of studying the discipline	Feedback is aimed at supporting students' independent work, identifying shortcomings and assessing the level of acquired theoretical knowledge

10.3 Summative assessment

	Description	Deadline, weeks	Feedback
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SA1 Differentiated credit	Passing a Differentiated credit	According to the schedule	The applicant can get 80 points for the module. The minimum number of points a student must receive is 48 points
SA2 Objective Structured Clinical Examination (OSCE)	The student must prove his ability to examine the patient, make the correct diagnosis, prescribe and carry out treatment, taking into account the individual characteristics of the patient and observing the basic principles of ethics and deontology. Comprehensive practice of the practical component of academic programs in a safe simulation environment for students. Provides an opportunity to learn skills from a variety of emergency situations.	During the entire period of studying the discipline	The entire period of studying the discipline. At the last lesson, the student must complete practical skills
SA3 Assessment of the level of theoretical training	Forms the skills of independent activity in students, prompts them to strive for exploratory knowledge. Stimulates students to work with the necessary literature, transfers the learning process from the level of passive absorption of information to the level of active transformation of it	During the entire period of studying the discipline	Held at each class, the result of performing the LO affects the comprehensive assessment for the practical class

Form of assessment:

	Points	Можливість перескладання з метою підвищення оцінки
The first semester of teaching	200 scores	
SA1. Differentiated credit	80	
Answering the questions, situational tasks solving, practical skills	60	No
Testing: assessment of theoretical questions, situational tasks	20	No
SA2. Objective Structured Clinical Examination (OSCE)	60	
	60	No
SA3. Assessment of the level of theoretical training	60	
	60	No

The total mark of discipline is defined as the summarizing of points for current educational activities (not less than 72) and average points for graded tests (not less than 48). The general mark of the discipline must be not more than 200. The calculation of the number of points for the current performance is based on the student's marks on the traditional 4-point rating scale. The number of

points that a student can receive in practical classes during the academic year is 120xarithmetic average/5. The maximum number of points for the current educational activities of the student - 120. Students who have a current educational score of at least 72 points, who have not missed practical classes are admitted to the graded tests. The final evaluation of the discipline is graded tests done at the end of each module (the arithmetic mean of 2 graded tests). Each graded test consists of theoretical questions, a practical task and testing. Each question is graded at 12, 16 or 20 points, which corresponds to the traditional 4-point system "3", "4" or "5" respectively. The graded test is credited to the student if he scored at least 48 points out of 80 possible. Incentive points are added: for a prize place in the 2nd tour of the student's Olympiad or a prize place in the competition of student research work -12 points; for participation in students' scientific forum in oral report form - 5 points; in poster form - 4 points; in the case of abstract publication - 3 points; for selection of audio or video material from sections of the discipline - 2 points; for writing an abstract, video reports with literature review connected with problematic issues according to topics of modules 1 point (1 point for 1 presentation, the maximum quantity of presentations is 4). The recalculation of the results obtained in non-formal education is carried out on a voluntary basis and provides confirmation that the applicant has achieved the learning outcomes provided by the educational-professional program.

11. Learning resources

11.1 Material and technical support

MTS1	Information and communication systems
MTS2	Library fund, archive of radiographs, spiograms, electrocardiograms, coronary angiograms, computed tomograms, results of laboratory methods of examination
MTS3	Computers, computer systems and networks
MTS4	Medical equipment (spirometer, peakflowmeters, nebulizer, electrocardiograph, height meter, scales, tonometer, fibrogastroscope, phonendoscope, capillaroscope, glucometer, infusomat)
MTS5	Medical facilities / premises and equipment (Municipal Non-Commercial Enterprise of Sumy Regional Council "Sumy Regional Clinical Hospital", "Sumy Clinical Cardiology Dispensary", "Clinical hospital St.Panteleymon", "Clinical hospital № 4", "Clinical hospital № 5")
MTS6	Software (to support the distance learning, online surveys, virtual laboratories, virtual patients, to create computer graphics, etc.)
MTS7	Multimedia, video and audio, projection equipment (video cameras, projectors, screens, smart boards, etc.)
MTS8	Simulation room with equipment (simulation mannequins and models, medical training simulators, "Ambu" type bag, automatic defibrillator)

11.2 Information and methodical support

Essential Reading

1	Pogorielova, O. S. Acute coronary syndrome: study guide / O. S. Pogorielova. — Sumy : Sumy State University, 2021. — 73 p. — URL: https://essuir.sumdu.edu.ua/handle/123456789/84242
2	Skills in Rheumatology [Електронний ресурс] / ed.: H. Almoallim, M. Cheikh. — Singapore : Springer, 2021. — 566 p. — URL: https://library.oapen.org/handle/20.500.12657/46098
3	Vynnychenko, L. B. Internal Medicine: Hematology: study guide / L. B. Vynnychenko, L. N. Prystupa, O. M. Chernatska ; under the editorship of V.F. Orlovsky, N.V. Demikhova. — Sumy : Sumy State University, 2019. — 136 p. — URL: http://libserver.ssu.localnet:8080/library/docs/rio/2019/Vynnychenko_Hematology.pdf
4	Internal Medicine: in 2 books. Book 1. Diseases of the Cardiovascular and Respiratory Systems: textbook / N.M. Seredyuk, I.P. Vakaliuk, R.I. Yatsyshyn et al. 2019p. «Medicine» - 664 p.
5	Internal medicine : textbook. P. 2 : Pulmonology. Gastroenterology. Nephrology. Diseases of the internal organs in countries with hot climate / K. M. Amosova, O. Ya. Babak, I. P. Katerenchuk et al. ; eds. : M. A. Stanislavchuk, V. K. Sierkova. — Vinnytsya : Nova Knyha, 2019. — 360 p.
Supplemental Reading	
1	Integrative Cardiology [Електронний ресурс] : A New Therapeutic Vision / edited by Massimo Fioranelli. — 1st ed. 2017. — Cham: Springer International Publishing, 2017. — XII, 276 p.
2	Cardiology Procedures [Електронний ресурс]: A Clinical Primer / edited by Robert C. Hendel, Carey Kimmelstiel. — 1st ed. 2017. — London: Springer London, 2017. — XI, 347 p
3	Lyudmila N. Prystupa, Irina O. Moiseyenko, Victoria Yu. Garbuzova, Vladyslava V. Kmyta, Irina A. Dudchenko Association of metabolic syndrome components with the genotypes of the C825T polymorphism in the G protein
4	Anna V. Kovchun, Vladyslav A. Smilianov, Nataliia G. Kuchma, Vladyslava V. Kachkovska, Lyudmyla N. Prystupa The impact of systemic inflammation on anemia in patients with chronic obstructive pulmonary disease //J. Wiadomosci Lekarskie (Польша), tom LXXIII. — 2020. — № 2. — P. 325-328.
5	O.M. Chernatska, L.N. Prystupa, H.A. Fadiieva, A.V. Iashenko, Y.O. Smianova Arterial hypertension, associated with hyperuricemia: features of heart damage // J. Wiadomosci Lekarskie (Польша). — 2020. — tom LXXIII, № 5. — P. 943-946.
6	Goldman-Cecil medicine [Текст]. V.1 / L. Goldman, L. Schafer, M. Crow etc. —25-th ed. — Saunders: Saunders Elsevier, 2016. — 1489 p.
7	Goldman-Cecil medicine [Текст]. V.2 / L. Goldman, L. Schafer, M. Crow etc. —25-th ed. — Saunders: Saunders Elsevier, 2016. — 1129 p
8	Mayerle, J. Chronic Pancreatitis [Електронний ресурс] / J. Mayerle, G. Beyer. — 2017.

9	Internal Medicine: Critical Care: textbook / O. Ya. Babak, O. M. Bilovol, N. M. Zhelezniakova etc. ; Edit.: O.Ya. Babak, O.M. Bilovol. — second edition. — K. : AUS Medicine Publishing, 2018. — 368 p.
10	Villatoro, V. A Laboratory Guide to Clinical Hematology [Электронный ресурс] / V. Villatoro, M. To. — 1st ed. — University of Alberta, 2018. — 302 p. — URL: https://openeducationalberta.ca/mlsci/
Web-based and electronic resources	
1	https://empendium.com/mcmtextbook/
2	https://www.mdcalc.com/
3	https://reference.medscape.com/guide/medical-calculators
4	https://www.escardio.org/Education/E-Learning/basic-tools-in-general-cardiology
5	https://www.ers-education.org/e-learning/procedure-videos/

COURSE DESCRIPTOR

№	Course Descriptor	Total hours	Classroom work, hours				Independent work of students, hours								
			Total hours	Lectures	Workshops (seminars)	Labs	Total hours	Self-study of the material	Preparation for workshops (seminars)	Preparation for labs	Preparation for assesment	Independent extracurricular tasks			
1	2				3	4	5	6	7	8	9	10	11	12	13
full-time course															
Module 1. Modern practice in Internal Medicine															
1	Management of patient with arterial hypertension.				15	12	0	12	0	3	0	3	0	0	0
2	Management of patient with cardialgia.				7.5	6	0	6	0	1.5	0	1.5	0	0	0
3	Management of patient with heart rhythm disorders.				7.5	6	0	6	0	1.5	0	1.5	0	0	0
4	Management of patient with heart conduction disorders.				5	4	0	4	0	1	0	1	0	0	0
5	Management of patient with chronic coronary syndrome (CCS).				7.5	6	0	6	0	1.5	0	1.5	0	0	0
6	Management of patient with cardiomegaly.				7.5	6	0	6	0	1.5	0	1.5	0	0	0
7	Management of patient with heart failure.				7.5	6	0	6	0	1.5	0	1.5	0	0	0
8	Management of patient with heart murmurs.				5	4	0	4	0	1	0	1	0	0	0
9	Management of patient with connective tissue diseases (CTD).				7.5	6	0	6	0	1.5	0	1.5	0	0	0
10	Management of patient with joint syndrome and myalgias.				7.5	6	0	6	0	1.5	0	1.5	0	0	0
11	Management of patient with degenerative diseases of the joints.				5	4	0	4	0	1	0	1	0	0	0
12	Management of patient with osteoporosis.				2.5	2	0	2	0	0.5	0	0.5	0	0	0
13	Management of patient with pulmonary hypertension (PH).				2.5	2	0	2	0	0.5	0	0.5	0	0	0
14	Management of patient with the fever of unknown origin.				5	4	0	4	0	1	0	1	0	0	0
15	Management of patient with gastric dyspepsia.				5	4	0	4	0	1	0	1	0	0	0
16	Management of patient with abdominal pain.				5	4	0	4	0	1	0	1	0	0	0

1	2	3	4	5	6	7	8	9	10	11	12	13
17	Management of patient with jaundice.	5	4	0	4	0	1	0	1	0	0	0
18	Management of patient with hepatomegaly and hepatolienal syndrome.	5	4	0	4	0	1	0	1	0	0	0
19	Management of patient with portal hypertension.	5	4	0	4	0	1	0	1	0	0	0
20	Management of patient with bronchoobstructive syndrome.	5	4	0	4	0	1	0	1	0	0	0
21	Management of patient with infiltrative pulmonary obscurity, pleural effusion.	5	4	0	4	0	1	0	1	0	0	0
22	Management of patient with pneumonia.	5	4	0	4	0	1	0	1	0	0	0
23	Management of patient with chronic complications of diabetes mellitus.	5	4	0	4	0	1	0	1	0	0	0
24	Management of patient with metabolic syndrome.	5	4	0	4	0	1	0	1	0	0	0
25	Management of patient with Goiter	2.5	2	0	2	0	0.5	0	0.5	0	0	0
26	Management of patient with urinary syndrome.	5	4	0	4	0	1	0	1	0	0	0
27	Management of patient with nephrotic syndrome.	5	4	0	4	0	1	0	1	0	0	0
28	Management of patient with chronic kidney disease.	5	4	0	4	0	1	0	1	0	0	0
29	Management of patient with anemia.	7.5	6	0	6	0	1.5	0	1.5	0	0	0
30	Management of patient with leukemoid reaction and leukemia.	7.5	6	0	6	0	1.5	0	1.5	0	0	0
31	Management of patient with lymphadenopathy.	5	4	0	4	0	1	0	1	0	0	0
32	Management of patient with hemorrhagic syndrome	5	4	0	4	0	1	0	1	0	0	0
33	Management of patients with thrombocytopenic purpura and polycythemia.	2.5	2	0	2	0	0.5	0	0.5	0	0	0
34	Performance of practical skills and manipulations. Differentiated credit	7.5	6	0	6	0	1.5	0	1.5	0	0	0
Module 2. Emergencies in the clinic of Internal Medicine												
1	Curation of the patient with Hypertensive emergency.	7.5	6	0	6	0	1.5	0	1.5	0	0	0
2	Curation of the patient with acute coronary syndrome and myocardial infarction (MI).	7.5	6	0	6	0	1.5	0	1.5	0	0	0
3	Curation of the patient with myocardial infarction complications.	7.5	6	0	6	0	1.5	0	1.5	0	0	0
4	Curation of the patient with paroxysmal heart rhythm and conduction disorders.	7.5	6	0	6	0	1.5	0	1.5	0	0	0
5	Curation of the patient with acute thrombosis	2.5	2	0	2	0	0.5	0	0.5	0	0	0

1	2	3	4	5	6	7	8	9	10	11	12	13
6	Curation of the patient with pulmonary embolism. Treatment strategy in sudden cardiac death (SCD).	7.5	6	0	6	0	1.5	0	1.5	0	0	0
7	Curation of the patient with emergencies in rheumatology.	2.5	2	0	2	0	0.5	0	0.5	0	0	0
8	Curation of the patient with acute back pain and acute kidney injury (AKI).	2.5	2	0	2	0	0.5	0	0.5	0	0	0
9	Curation of the patient with severe exacerbation of bronchial asthma (BA), acute allergic reactions.	7.5	6	0	6	0	1.5	0	1.5	0	0	0
10	Curation of the patient with emergencies in diabetes mellitus.	5	4	0	4	0	1	0	1	0	0	0
11	Curation of the patient with syncope.	2.5	2	0	2	0	0.5	0	0.5	0	0	0
12	Curation of the patient with acute adrenal insufficiency, thyrotoxic crisis, myxedema coma.	5	4	0	4	0	1	0	1	0	0	0
13	Curation of the patient with acute abdominal pain.	2.5	2	0	2	0	0.5	0	0.5	0	0	0
14	Performance of practical skills and manipulations. Differentiated credit	7.5	6	0	6	0	1.5	0	1.5	0	0	0
Assesment												
1	Graded Credit	6	0	0	0	0	6	0	0	0	6	0
Independent extracurricular tasks												
1	extracurricular tasks	24	0	0	0	0	24	0	0	0	0	24
<i>Total (full-time course)</i>		<i>300</i>	<i>216</i>	<i>0</i>	<i>216</i>	<i>0</i>	<i>84</i>	<i>0</i>	<i>54</i>	<i>0</i>	<i>6</i>	<i>24</i>

	UNIVERISTY POLICIES FOR THE COURSE «Internal Medicine» Higher education level The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle Major: Educational programme 222 Medicine: Medicine Mode of study full-time course Language of instruction English
Teacher(s)	Dudchenko Iryna Oleksandrivna, Orlovskyi Oleksandr Viktorovych
Contact	Iryna Dudchenko, Ph.D., Associate Professor of Internal Medicine department Postgraduate Education, e-mail: i.dudchenko@med.sumdu.edu.ua
Time and room for giving consultations	18, Kovpaka str., Sumy Regional Clinical Hospital on Thursdays, 15.00-17.00
Links to online educational platforms	https://elearning.sumdu.edu.ua/works/3192/nodes/586692
Syllabus	https://pg.cabinet.sumdu.edu.ua/report/course/88834d8273f63a05b5414ee2c8b535885109863
Channels for maintaining contact with the group for receiving and working on materials	Mix.sumdu.edu.ua, e-mail, Viber

POLICIES

Academic integrity policy

Participants must complete all tasks according to the course requirements independently. Participants are not allowed to cheat during the written module or summative test. The assignments should not contain plagiarism, facts of fabrication, falsification, cheating. Manifestations of other types of academic dishonesty determined by the Academic Integrity policy are also unacceptable. If a teacher reveals violations of academic integrity by students during the course, the former have the right to take one of the following actions: - to reduce points by up to 40% for practical assignments; - to give recommendations for improving and resubmitting mandatory homework assignments with the reduction of points by up to 25%; - to not accept mandatory homework assignments without the right to resubmit; - set a date for retaking the written module or the summative test with a reduction of points by up to 15%; - to not allow to retake the written module or the summative test.

Політика щодо використання інструментів штучного інтелекту

Політика використання інструментів штучного інтелекту оголошується викладачем на початку курсу.

Несанкціоноване використання інструментів штучного інтелекту є порушенням академічної доброчесності.

Політика щодо використання матеріалів з джерел відкритого доступу

При використанні матеріалів із джерел відкритого доступу для підготовки робіт, визначених робочою програмою навчальної дисципліни, здобувачі освіти обов'язково мають дотримуватися умов ліцензій Creative Commons на використання об'єктів авторського права.

Attendance policy

Відвідування занять є обов'язковим. За об'єктивних обставин (наприклад, хвороба, участь у програмах академічної мобільності) навчання може відбуватись за індивідуальним графіком.

Deadlines and course retake policy

In the case of an unsatisfactory exam result, the student has the right to retake the semester exam twice: the first time - to the examiner, who is appointed by the Head of the department, the second - to the Commission, which the Dean's office creates. Re-examination is carried out by an individual schedule which the dean's office approves. Students who did not come to the exam without valid reason are considered as those who received an unsatisfactory grade. A student's refusal to perform examination tasks is considered an unsatisfactory answer. The student has the right to get an explanation concerning the received grade.

Якщо за результатами всіх контрольних заходів отримана сума балів відповідає позитивній оцінці (обов'язковою є умова виконання усіх вимог, визначених РП НД та регламентом), вона є підсумковою, перескладання позитивної оцінки з метою підвищення не здійснюється.

Ліквідація академічної заборгованості здійснюється відповідно до вимог Положення про організацію освітнього процесу Сумського державного університету, з урахуванням установлених строків, форм контролю та процедур повторного складання контрольних заходів.

Assessment appeals policy

The results of the module and semester assessment are subject to appeal. A student must lodge an appeal to the director/dean on the day of certification or after announcing the results, but no later than the next working day. The appeal commission is established by the director/dean's order. The appeal commission's decision may change the grade in case of violations revealed during the attestation.

Assessment criteria

The first semester of teaching

SA1. Differentiated credit, 80 scores	
5 (Excellent) <i>Outstanding performance without errors</i>	$170 \leq RD \leq 200$ 68-80 points
4 (Good) <i>Above the average standard but with minor errors</i>	$140 \leq RD < 169$ 56-67 points
3 (Satisfactory) <i>Fair but with significant shortcomings</i>	$120 \leq RD < 139$ 48-55 points
2 (Fail) <i>Fail – some more work required before the credit can be awarded</i>	$0 \leq RD < 119$ 0-47 points
SA2. Objective Structured Clinical Examination (OSCE), 60 scores	
5 (Excellent) <i>Outstanding performance without errors</i>	$170 \leq RD \leq 200$ 51-60 points
4 (Good) <i>Above the average standard but with minor errors</i>	$140 \leq RD < 169$ 42-50 points
3 (Satisfactory) <i>Fair but with significant shortcomings</i>	$120 \leq RD < 139$ 36-41 points
2 (Fail) <i>Fail – some more work required before the credit can be awarded</i>	$0 \leq RD < 119$ 0-35 points
SA3. Assessment of the level of theoretical training, 60 scores	

5 (Excellent) <i>Outstanding performance without errors</i>	$170 \leq RD \leq 200$ 51-60 points
4 (Good) <i>Above the average standard but with minor errors</i>	$140 \leq RD < 169$ 42-50 points
3 (Satisfactory) <i>Fair but with significant shortcomings</i>	$120 \leq RD < 139$ 36-41 points
2 (Fail) <i>Fail – some more work required before the credit can be awarded</i>	$0 \leq RD < 119$ 0-35 points