

Ministry of Science and Higher Education of the Russian Federation
Federal State Autonomous Institution of Higher Education
“National Research Nuclear University “MEPhI”

INSTITUTE OF ENGINEERING PHYSICS FOR BIOMEDICINE
DEPARTMENT OF FUNDAMENTAL MEDICINE

APPROVED ИТС ИФИБ

Protocol No. 3.1

dated 30.08.2024

ACADEMIC COURSE OUTLINE

ГОСПИТАЛЬНАЯ ТЕРАПИЯ С ПРОФЕССИОНАЛЬНЫМИ БОЛЕЗНЯМИ / HOSPITAL
THERAPY WITH PROFESSIONAL DISEASES

Educational program track (specialty) [1] 31.05.01 General Medicine

Semester	Labour input, credits	Total course academic, hours	Lectures, hrs.	Practical sessions, hrs.	Laboratory sessions, hrs.	In the form of practical studies, hrs.	Independent studies, hrs.	Independent studies monitoring, hrs.	Course progress, Exam/Pass-fail exam/Term
10	3	108	16	60	0		32	0	PFE
11	6	216	20	40	0		102	0	Ex
9	3	108	20	60	0		28	0	PFE
Total	12	432	56	160	0	160	162	0	

ABSTRACT

The curriculum of the discipline is designed based on the requirements for the learning outcomes of the specialist degree program. The University graduate must be prepared to solve problems related to the diagnosis, treatment, and prevention of diseases.

During the course of the discipline, students acquire and improve knowledge, skills, and competencies in diagnosing major diseases of internal organs, performing differential diagnosis for diseases of internal organs, and developing the ability to formulate a comprehensive clinical diagnosis based on collected patient information, as well as to prescribe and justify individualized treatment and preventive measures.

1. ACADEMIC COURSE GOALS AND OBJECTIVES

The goal of studying the discipline is the formation of competencies in the diagnosis, treatment, and prevention of internal organ diseases, including within the field of occupational pathology.

The objectives To form a system of knowledge about the causes, pathogenesis, clinical manifestations, methods of diagnosis, treatment, and prevention of internal organ diseases, and the role of social and occupational factors in disease development.

- To consolidate and improve skills in patient examination, applying a differential approach, and selecting optimal examination methods for patients with internal organ pathology and occupational diseases.

- To improve the readiness to identify primary pathological conditions, leading symptoms and syndromes, nosological forms of diseases, and to formulate a diagnosis.

- To develop a clinical approach to diagnosing primary and concomitant pathology of internal organs and occupational diseases, as well as clinical reasoning.

- To improve abilities and skills in creating a plan for examination and treatment of internal organ diseases and interpreting the results of additional investigations in accordance with clinical guidelines to establish a diagnosis.

- To master the method of diagnostic search and differential diagnosis for internal organ diseases.

- To improve skills in providing medical care in emergency and life-threatening conditions.

- To improve abilities and skills in rationally selecting treatment for diseases, considering their severity and in accordance with clinical guidelines; the ability to assess the effectiveness and safety of prescribed treatment.

- To improve abilities and skills in implementing medical rehabilitation programs and conducting preventive measures aimed at preventing the development of diseases, complications, and recurrences.

- To improve skills in working with scientific literature and regulatory documents, and in maintaining medical records.

2. PLACE OF THE ACADEMIC COURSE IN THE MAIN HIGHER EDUCATION CURRICULUM

The discipline is implemented as part of the core component of the educational program. It is based on the knowledge, skills, and abilities acquired during the study of such disciplines as normal and pathological anatomy, normal and pathological physiology, topographic anatomy and operative

surgery, medical microbiology and virology, immunology, pharmacology, propaedeutics of internal diseases, radiological diagnostics, general surgery, faculty-level therapy and surgery, obstetrics, dermatovenerology, neurology, and hygiene.

For developing a holistic understanding of disease symptomatology, symptom pathogenesis, general diagnostic methodology, and clinical reasoning skills, the parallel study of the hospital-based courses in internal diseases and surgical diseases, gynecology, pediatrics, psychiatry, infectious diseases, endocrinology, clinical pharmacology, outpatient therapy, public health, and healthcare organization is advisable.

The knowledge, skills, and abilities acquired as a result of mastering this discipline are necessary for the successful completion of practical training ("Outpatient Care," "Emergency Care") and for successful professional activity.

3. DEVELOPED COMPETENCIES AND INTENDED LEARNING OUTCOMES

Universal and/or general professional competencies:

Competency code and title	Code and title of competency-based rubrics
OPIK-2 [1] – Capable of conducting and monitoring the effectiveness of measures for prevention, healthy lifestyle promotion, and sanitary-hygienic education of the population	3-OPIK-2 [1] – Know: - regulatory foundations for conducting preventive medical examinations and health check-ups; - rules for implementing sanitary and anti-epidemic measures; - forms and methods of health education work; - sanitary rules and regulations; - national immunization schedule; - main hazardous and harmful occupational factors. Y-OPIK-2 [1] – Be able to: - determine medical indications for imposing restrictive measures (quarantine) and conduct anti-epidemic measures in case of an infection outbreak; - conduct preventive medical examinations and health check-ups in accordance with current regulatory legal acts and other documents; - monitor the effectiveness of measures for disease prevention, health promotion, and sanitary-hygienic education of the population; - develop and implement health promotion programs aimed at eliminating harmful effects of environmental factors on human health; - establish cause-effect relationships between changes in health status and exposure to environmental factors. B-OPIK-2 [1] – Possess skills in: - organizing and conducting preventive medical examinations and health check-ups for the adult population to prevent the occurrence and/or spread of diseases and identify risk factors; - preparation (formation) and sending to the territorial office of the Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing an emergency notification upon detection of an infectious or occupational disease; -educating patients and their relatives on methods of self-monitoring key physiological indicators.
OPIK-4 [1] – Capable of using medical devices stipulated by the medical care procedures, as well as	3-OPIK-4 [1] – Know: - modern diagnostic instrumental examination methods for patients, including functional, radiological, ultrasound, radionuclide diagnostics, and

conducting patient examination for diagnosis establishment.	endoscopy; - diagnostic capabilities of instrumental examination methods; - medical devices stipulated by the procedure for providing medical care to the adult population in the "Therapy" specialty, and the equipment standard for a therapeutic room; - main medical devices stipulated by the procedures for providing medical care to the adult population in major surgical specialties, obstetrics, and gynecology; - indications for referring patients for instrumental examinations and functional diagnostics; - techniques for physical examination of patients using medical devices stipulated by procedures and considering medical care standards Y-OPIK-4 [1] – Be able to: - use medical devices stipulated by the medical care procedure; - determine the required volume and content of instrumental and functional diagnostics to establish a diagnosis; - interpret results of the most common functional and instrumental diagnostic methods B-OPIK-4 [1] – Possess skills in: - using basic medical devices (stethoscope, blood pressure monitor, sphygmomanometer, pulse oximeter, height-weight scale, measuring tape, neurological hammer, scalpel, forceps, and other devices); - operating electrocardiographs and devices for measuring external respiratory function; - interpreting results of the most common functional and instrumental diagnostic methods
OPIK-6 [1] – Capable of organizing general nursing, providing primary medical care, ensuring the organization of work and making professional decisions in emergencies at the pre-hospital stage, in emergency situations, epidemics and in areas of mass destruction	3-OPIK-6 [1] – Know: - a set of measures for general nursing with diseases of various organs and systems; Signs of clinical and biological death; - indications for patient hospitalization for the most common diseases with typical progression. Y-OPIK-6 [1] – Be able to: - organize care for patient when providing medical care in an outpatient setting; - determine the need for patient hospitalization; - ensure the organization of work in emergency situations, epidemics, and in mass casualty zones. B-OPIK-6 [1] – Possess skills in: - general care of a patient (general nursing); - providing first aid; - making medical decisions in emergencies at the prehospital stage, including in emergency situations, epidemics, and in mass casualty zones.
OPIK-7 [1] – Capable of prescribing treatment and monitoring its effectiveness and safety.	3-OPIK-7 [1] – Know: - pharmacological groups of medicinal drugs and their intended purposes; - mechanisms of action of pharmacological and non-pharmacological treatments, indications and contraindications for their use, side effects, and complications caused by their application; - methods for monitoring the effectiveness and safety of various treatment approaches. Y-OPIK-7 [1] – Be able to: - make rational choices for pharmacological and non-pharmacological treatments based on clinical guidelines and in accordance with medical care standards; - develop a treatment plan for a disease or condition considering the diagnosis, age, disease course characteristics, and comorbidities, based on clinical guidelines and medical care standards; - prescribe medications, medical devices, and

	therapeutic nutrition considering the diagnosis, age, disease course characteristics, and comorbidities, based on clinical guidelines and medical care standards; - justify prescribed pharmacological and non-pharmacological treatments; - evaluate the effectiveness and safety of medications, medical devices, therapeutic nutrition, and other treatment methods. B-OPIK-7 [1] – Possess skills in: - administering medications through various routes of administration; - developing treatment plans for diseases or conditions considering diagnosis, age, disease course characteristics, and comorbidities; - assessing the effectiveness and safety of prescribed treatments.
OPIK-8 [1] – Capable of implementing and monitoring the effectiveness of medical rehabilitation of patients, including during the implementation of individual rehabilitation and habilitation programs for persons with disabilities, and to assess patients' capacity for work.	3-OPIK-8 [1] – Know: - signs of temporary disability and persistent disorders of body functions leading to limitations in life activities; - procedures for conducting temporary disability examinations; - procedures for referring patients for medical and social expertise; - the concept of "Individual Rehabilitation and Habilitation Program for Persons with Disabilities"; - medical indications and contraindications for prescribing spa treatment; - medical indications and contraindications for conducting medical rehabilitation measures, considering the diagnosis, clinical guidelines, procedures, and standards of medical care. Y-OPIK-8 [1] – Be able to: - determine the need for applying natural therapeutic factors, pharmacological and non-pharmacological therapies, and other methods for patients requiring medical rehabilitation and spa treatment; - monitor the effectiveness of medical rehabilitation for patients, including during the implementation of individual rehabilitation and habilitation programs for persons with disabilities; - assess patients' capacity for work; - perform medical rehabilitation measures for patients in accordance with current medical care procedures, clinical guidelines, and medical care standards. B-OPIK-8 [1] – Possess skills in: - identifying signs of temporary disability and persistent disorders of body functions leading to limitations in life activities; - referring patients in need of medical rehabilitation to specialist physicians for the implementation of individual rehabilitation program measures, including spa treatment; - completing sick note, referrals for medical and social expertise, and sanatorium treatment cards.
OPIK-9 [1] – Capable of implementing quality management principles in professional activities.	3-OPIK-9 [1] – Know: - principles of quality management; The concept of quality of medical care; - procedure for providing medical care to the adult population in the "Therapy" specialty; - procedure for prescribing medications. Y-OPIK-9 [1] – Be able to: - analyze the results of one's own professional activities to prevent errors; - apply medical care standards and clinical guidelines (treatment protocols) in practical work; - evaluate the correctness of chosen methods of prevention, diagnosis, treatment, and rehabilitation when providing medical care to a specific patient; - assess the degree of achievement of the planned treatment outcome. B-OPIK-9 [1] – Possess skills in: - making medical decisions

	based on evidence-based medicine (selection of diagnostic, treatment, prevention, and rehabilitation methods), including using electronic knowledge bases; - applying the procedure for prescribing medications; - participating in the assessment of the quality of medical care provided.
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Professional competencies in compliance with the goals and professional knowledge areas:

Professional activity goal	Professional activity knowledge area	Professional competency code and title; Based on the professional standard, experience analysis	Code and title of competency-based rubrics
medical			
Providing medical care to patients in urgent and emergency forms.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population	IIK-3.1 [1] - Able to provide medical care to patients in urgent or emergency forms <i>The base:</i> Professional standard: 02.009	3-IIK-3.1[1] - Know: - clinical signs of sudden cessation of breathing, circulation, loss of consciousness, life-threatening mental disorders for the patient or others; - indications for external defibrillation; - principles of external electro-impulse therapy (defibrillation) devices and rules for performing external defibrillation; - rules for performing basic cardiopulmonary resuscitation.; Y-IIK-3.1[1] - Be able to: - recognize conditions (sudden acute illnesses, exacerbations of chronic diseases) requiring medical care in urgent or emergency forms; - identify clinical signs of sudden cessation of breathing, circulation, loss of consciousness, life-threatening mental disorders for the patient or others; - organize and perform basic cardiopulmonary resuscitation and external defibrillation measures.; B-IIK-3.1[1] - Possess

			skills in: - assessing the patient's condition requiring medical care in urgent and emergency forms; - performing basic cardiopulmonary resuscitation; - using medications and medical devices for providing medical care in emergency or urgent forms.
Diagnostics of diseases and pathological conditions of the patients.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population	IIK-3.2 [1] - Capable of conducting patient examinations to establish a diagnosis <i>The base:</i> Professional standard: 02.009	3-IIK-3.2[1] - Know: - clinical diagnosis establishment algorithm; - patient history-taking and physical examination methodology; - laboratory and instrumental research methods for health assessment to establish a diagnosis; - semiotics of diseases of different organs and systems; - structure, principles of the current International Statistical Classification of Diseases and Related Health Problems (hereinafter - ICD).; Y-IIK-3.2[1] - Be able to: - conduct patient history-taking and physical examination; - interpret history, physical examination data, laboratory and instrumental results to recognize a condition or establish the presence/absence of a disease, establish a diagnosis; - distinguish and recognize in each specific case tissue damage, the reaction to it, and the form of adaptability; - develop a patient examination plan, justify the necessity and scope of laboratory and instrumental examination; - identify main pathological conditions, symptoms and syndromes, nosological

			forms in the patient according to the current ICD.; B-IIK-3.2[1] - Possess skills in: - patient history-taking and physical examination; Formulating a preliminary diagnosis; - developing a patient examination plan; Interpreting laboratory and instrumental results; - establishing a diagnosis considering the current ICD
Providing primary medical care in outpatient settings and day hospital settings.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population	IIK-3.3 [1] - Able to provide primary medical care in an outpatient setting <i>The base:</i> Professional standard: 02.009	3-IIK-3.3[1] - Know: - general issues of organizing medical care for the population and organizing medical care for the adult population in outpatient settings, including at home; - features of medical care using telemedicine technologies; - Clinical picture, differential diagnosis, features of the course of the disease, complications and outcomes of internal diseases; - diagnostic criteria for the most common diseases of internal organs and systems; - indications for referring patients for specialist consultations according to clinical guidelines and considering relevant medical care standards; - indications for referring patients for specialized medical care in inpatient settings and day hospitals according to clinical guidelines and considering relevant medical care standards; - features of managing and treating elderly patients in outpatient settings. ;

			Y-IIK-3.3[1] - Be able to: - perform differential diagnosis of internal diseases; - monitor the course of physiological pregnancy; - justify the need for referring patients to specialist consultations; - recognize the main and concomitant diseases; - assess disease or condition severity - the degree of organ and/or system damage or functional impairment due to the disease/condition or its complications; - determine management, examination and treatment tactics for patients with specific diseases (nosological units) depending on disease severity and condition, according to clinical guidelines and considering relevant medical care standards.; B-IIK-3.3[1] - Possess skills in: - conducting differential diagnosis with other diseases/conditions, including emergencies; - interpreting data obtained from patient consultations with specialists; - prescribing additional tests to clarify the diagnosis; - formulating a clinical diagnosis; - prescribing treatment according to clinical guidelines and considering relevant medical care standards.
organizational and managerial			
Collection of medical data, medical and statistical analysis of information on the population health indicators for various age and sex groups.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult	IIK-3.4 [1] - Able to analyze population health indicators <i>The base:</i> Professional standard: 02.022	3-IIK-3.4[1] - Know: - factors shaping human health; - main medical-statistical indicators characterizing population health, methods for their calculation; - methodologies for

	population		collecting medical-statistical information.; У-ПК-3.4[1] - Be able to: - analyze statistical indicators of morbidity with temporary disability, disability, mortality.; Б-ПК-3.4[1] - Possess skills in: - analyzing official statistical reporting, including federal and industry statistical observation forms.
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4. PEDAGOGIC POTENTIAL OF THE COURSE

Pedagogic tracks/objectives	Pedagogic goals (code)
Vocational and labor education	Establishing conditions for: formation of a deep understanding of the profession's social role, a positive and active commitment to the values of the chosen specialty, and a responsible attitude towards professional activity and work (B14)
Vocational and labor education	Establishing conditions for: formation of psychological readiness for professional activity in the chosen profession (B15)
Professional education	Establishing conditions for: formation of responsibility for professional choice, professional development and professional decisions (B18)
Professional education	Establishing conditions for: formation of motivation to improve the quality of medical care to the population and the desire to follow the rules and norms of interaction between the doctor, colleagues and the patient, contributing to the creation of the most favorable environment for the patient's recovery (B34)

5. ACADEMIC COURSE STRUCTURE AND CONTENT

Academic course sections, their scope, terms of study and assessment:

No.	Academic course section name	Weeks	Lectures/ Practical (seminars)/ Laboratory sessions, hrs.	Compulsory current assessment (form*, week)	Maximum grade per section**	Section assessment (form*, week)	Competency-based rubrics
	<i>9 Semester</i>						
1	The First Section	1-8	10/30/0	T-8 (25)	25	T-8	3-ОПК-2, У-ОПК-2,

							В-ОПК-2, З-ОПК-4, У-ОПК-4, В-ОПК-4, З-ОПК-6, У-ОПК-6, В-ОПК-6, З-ОПК-7, У-ОПК-7, В-ОПК-7, З-ОПК-8, У-ОПК-8, В-ОПК-8, З-ОПК-9, У-ОПК-9, В-ОПК-9, З-ПК-3.1, У-ПК-3.1, В-ПК-3.1, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3, У-ПК-3.3, В-ПК-3.3, З-ПК-3.4, У-ПК-3.4, В-ПК-3.4
2	The Second Section	9-16	10/30/0	T-15 (25)	25	T-15	З-ОПК-2, У-ОПК-2, В-ОПК-2, З-ОПК-4, У-ОПК-4, В-ОПК-4, З-ОПК-6, У-ОПК-6, В-ОПК-6, З-ОПК-7, У-ОПК-7, В-ОПК-7, З-ОПК-8, У-ОПК-8, В-ОПК-8, З-ОПК-9, У-ОПК-9, В-ОПК-9, З-ПК-3.1, У-ПК-3.1, В-ПК-3.1, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2,

							3-ПК-3.3, У-ПК-3.3, В-ПК-3.3, 3-ПК-3.4, У-ПК-3.4, В-ПК-3.4
	<i>Totals for 9 Semester</i>		20/60/0		50		
	Assessment events for 9 Semester				50	PFE	3-ОПК-2, У-ОПК-2, В-ОПК-2, 3-ОПК-4, У-ОПК-4, В-ОПК-4, 3-ОПК-6, У-ОПК-6, В-ОПК-6, 3-ОПК-7, У-ОПК-7, В-ОПК-7, 3-ОПК-8, У-ОПК-8, В-ОПК-8, 3-ОПК-9, У-ОПК-9, В-ОПК-9, 3-ПК-3.1, У-ПК-3.1, В-ПК-3.1, 3-ПК-3.2, У-ПК-3.2, В-ПК-3.2, 3-ПК-3.3, У-ПК-3.3, В-ПК-3.3, 3-ПК-3.4, У-ПК-3.4, В-ПК-3.4
	<i>10 Semester</i>						
1	The First Section	1-8	8/30/0	T-8 (25)	25	T-8	3-ОПК-2, У-ОПК-2, В-ОПК-2, 3-ОПК-4, У-ОПК-4, В-ОПК-4, 3-ОПК-6, У-ОПК-6, В-ОПК-6, 3-ОПК-7, У-ОПК-7, В-ОПК-7, 3-ОПК-8, У-ОПК-8,

							В-ОПК-8, З-ОПК-9, У-ОПК-9, В-ОПК-9, З-ПК-3.1, У-ПК-3.1, В-ПК-3.1, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3, У-ПК-3.3, В-ПК-3.3, З-ПК-3.4, У-ПК-3.4, В-ПК-3.4
2	The Second Section	9-15	8/30/0	T-14 (25)	25	T-14	З-ОПК-2, У-ОПК-2, В-ОПК-2, З-ОПК-4, У-ОПК-4, В-ОПК-4, З-ОПК-6, У-ОПК-6, В-ОПК-6, З-ОПК-7, У-ОПК-7, В-ОПК-7, З-ОПК-8, У-ОПК-8, В-ОПК-8, З-ОПК-9, У-ОПК-9, В-ОПК-9, З-ПК-3.1, У-ПК-3.1, В-ПК-3.1, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3, У-ПК-3.3, В-ПК-3.3, З-ПК-3.4, У-ПК-3.4, В-ПК-3.4
	<i>Totals for 10 Semester</i>		16/60/0		50		
	Assessment events for 10 Semester				50	PFE	З-ОПК-2, У-ОПК-2, В-ОПК-2, З-ОПК-4, У-ОПК-4,

							В-ОПК-4, З-ОПК-6, У-ОПК-6, В-ОПК-6, З-ОПК-7, У-ОПК-7, В-ОПК-7, З-ОПК-8, У-ОПК-8, В-ОПК-8, З-ОПК-9, У-ОПК-9, В-ОПК-9, З-ПК-3.1, У-ПК-3.1, В-ПК-3.1, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3, У-ПК-3.3, В-ПК-3.3, З-ПК-3.4, У-ПК-3.4, В-ПК-3.4
	<i>11 Semester</i>						
1	The First Section	1-8	10/20/0	T-8 (25)	25	T-8	З-ОПК-2, У-ОПК-2, В-ОПК-2, З-ОПК-4, У-ОПК-4, В-ОПК-4, З-ОПК-6, У-ОПК-6, В-ОПК-6, З-ОПК-7, У-ОПК-7, В-ОПК-7, З-ОПК-8, У-ОПК-8, В-ОПК-8, З-ОПК-9, У-ОПК-9, В-ОПК-9, З-ПК-3.1, У-ПК-3.1, В-ПК-3.1, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3, У-ПК-3.3,

							В-ПК-3.3, 3-ПК-3.4, У-ПК-3.4, В-ПК-3.4
2	The Second Section	9-16	10/20/0	T-15 (25)	25	T-16	3-ОПК-2, У-ОПК-2, В-ОПК-2, 3-ОПК-4, У-ОПК-4, В-ОПК-4, 3-ОПК-6, У-ОПК-6, В-ОПК-6, 3-ОПК-7, У-ОПК-7, В-ОПК-7, 3-ОПК-8, У-ОПК-8, В-ОПК-8, 3-ОПК-9, У-ОПК-9, В-ОПК-9, 3-ПК-3.1, У-ПК-3.1, В-ПК-3.1, 3-ПК-3.2, У-ПК-3.2, В-ПК-3.2, 3-ПК-3.3, У-ПК-3.3, В-ПК-3.3, 3-ПК-3.4, У-ПК-3.4, В-ПК-3.4
	<i>Totals for 11 Semester</i>		20/40/0		50		
	Assessment events for 11 Semester				50	Ex	У-ОПК-2, В-ОПК-2, 3-ОПК-4, У-ОПК-4, В-ОПК-4, 3-ОПК-6, У-ОПК-6, В-ОПК-6, 3-ОПК-7, У-ОПК-7, В-ОПК-7, 3-ОПК-8, У-ОПК-8, В-ОПК-8, 3-ОПК-9, У-ОПК-9, В-ОПК-9,

							3-ПК-3.1, У-ПК-3.1, В-ПК-3.1, 3-ПК-3.2, У-ПК-3.2, В-ПК-3.2, 3-ПК-3.3, У-ПК-3.3, В-ПК-3.3, 3-ПК-3.4, У-ПК-3.4, В-ПК-3.4, 3-ОПК-2
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* – abbreviated name of assessment

** – 100 maximum points per semester including a pass/fail exam and (or) an exam

Abbreviated current assessment forms and section assessment

Abbreviation	Full name
T	Testing
PFE	Pass/fail examination
Ex	Exam

SYLLABUS

Weeks	Topics / Content	Lect., hrs.	Pr./sem., hrs.	Lab., hrs.
	<i>9 Semester</i>	20	60	0
1-8	The First Section	10	30	0
1 - 3	Cardiology Symptomatic arterial hypertension. Renal, endocrine, cardiovascular hypertension (aortic valve insufficiency, coarctation of the aorta). Cerebral hypertension, drug-induced hypertension. Resistant hypertension. Pseudoresistant hypertension. Refractory hypertension. Hypertensive crises, types. Approaches to management. Prevention of complications. Infectious Endocarditis. Etiology, pathogenesis. Risk factors. Classification. Clinical presentation, variants of onset and disease progression. Complications, diagnosis, treatment, prevention, outcomes and prognosis. Non-rheumatic Myocarditis and Cardiomyopathies. Etiology, pathogenesis, clinical manifestations, treatment principles. Modern classifications of cardiomyopathies. Clinical presentation, diagnosis, differential diagnosis, patient management algorithms. Dilated, hypertrophic, restrictive cardiomyopathy: types, course characteristics, treatment. Secondary forms of cardiomyopathies: classification, diagnosis, management approach. Arrhythmogenic right ventricular dysplasia/cardiomyopathy:	All		
		4	12	0
		Online		
		0	0	0

	diagnostic criteria, management approach. Peripartum cardiomyopathy. Takotsubo syndrome. Pericarditis. Etiology and pathogenesis, clinical manifestations, treatment principles. Complications of myocardial infarction (early, late): definition, classification, clinical presentation, differential diagnosis, management approach. Arrhythmias and conduction disorders. Torsades de pointes. Ventricular fibrillation. Myocardial rupture. Left ventricular aneurysm, pseudoaneurysm. Pulmonary edema. Cardiogenic shock. Dressler syndrome. Acute coronary syndrome. Features of clinical presentation and ECG data. Management algorithm for patients with ACS. Indications/contraindications, timing, complications of myocardial revascularization. Dual antiplatelet therapy, indications, contraindications, prevention of complications, prognosis. Acute heart failure, decompensation of chronic heart failure. Etiology. Pathogenesis. Risk factors. Classification. Clinical profiles of patients with AHF. Complications. Diagnosis. Formulation of diagnosis. Course and outcomes. Treatment: goals, drug selection. Respiratory support, pharmacological and device-based therapy. Acquired heart valve diseases in adults. Differential diagnosis, clinical presentation, treatment, indications for surgical intervention. Hemodynamic characteristics. Clinical manifestations. Instrumental diagnostics.			
4 - 5	Functional Diagnostics in Cardiology Echocardiography, 24-hour blood pressure and ECG monitoring, stress tests. Methodology of performance. Indications/contraindications. Varieties. Diagnostic capabilities of the methods. EchoCG findings in various cardiovascular diseases. Etiology of left ventricular myocardial hypertrophy, differential diagnosis. Causes of dilatation of left and right heart chambers, differential diagnosis. Types and causes of left ventricular myocardial segmental wall motion abnormalities, differential diagnosis. Heart valve apparatus dysfunctions, patient management algorithm, indications for cardiac surgical correction. Intracardiac thromboses, tumors, diagnostic criteria, differential diagnosis, management algorithm. Diagnostic criteria for arterial hypertension based on ABPM. Diagnosis of arrhythmias, conduction disorders, and coronary artery disease based on Holter ECG monitoring; indications for cardiac surgical correction. Types of ECG stress tests, indications for cardiac surgical correction.	All		
		2	6	0
		Online		
		0	0	0
6 - 8	Pulmonology Nosocomial pneumonias, differential diagnosis of pneumonias. Definition of nosocomial pneumonia. Classification.	All		
		4	12	0
		Online		

	Pathogenesis. Risk factors for developing nosocomial pneumonia. Etiology of nosocomial pneumonia. Diagnosis. Main radiological syndromes in pneumonias, treatment of nosocomial pneumonia. Disorders of pulmonary circulation. Pulmonary embolism. Clinical probability of PE. Clinical presentation, diagnosis, complications, treatment. Arterial pulmonary hypertension. Differential diagnosis of primary and secondary pulmonary hypertension. Clinical manifestations, diagnosis. Pharmacological and surgical treatment. Chronic cor pulmonale. Respiratory failure. Pulmonary manifestations of certain hereditary diseases. Cystic fibrosis, alpha-1 antitrypsin deficiency. Clinical signs, diagnosis, treatment principles. Parasitic lung diseases. Significance for differential diagnosis. Respiratory sarcoidosis. Epidemiology, etiology, pathogenesis. Classification. Clinical presentation and diagnosis. Treatment, prognosis. Disseminated processes in the lungs. Idiopathic pulmonary fibrosis, hypersensitivity pneumonitis. Granulomatosis with polyangiitis (Wegener's granulomatosis). Definition of interstitial lung diseases. Classification. Main causes and pathogenetic mechanisms of interstitial lung involvement. Clinical presentation. Biomarkers of interstitial lung disease. Instrumental diagnostics. Laboratory diagnostics. Treatment, prevention, prognosis.	0	0	0
9-16	The Second Section	10	30	0
9 - 11	Gastroenterology Inflammatory bowel diseases – ulcerative colitis and Crohn's disease. Etiology, pathogenesis, clinical presentation, diagnostic criteria. Complications. Diagnosis, treatment regimens, "rescue therapy," prevention, prognosis. Esophageal diseases. Achalasia, cardiospasm. Etiology, pathogenesis, clinical presentation, diagnosis, treatment. Functional disorders of the stomach and intestines. Functional dyspepsia. Functional bowel disorder. Malabsorption and maldigestion. Etiology, clinical presentation, diagnosis, treatment. Enteropathies. Biliary dyskinesia. Pathogenesis, diagnostic criteria, diagnosis, treatment, prevention. Postcholecystectomy syndrome. Chronic primary cholangitis. Autoimmune hepatitis. Etiology, pathogenesis, clinical presentation, diagnosis, therapeutic approach.	All		
		4	12	0
		Online		
		0	0	0
12 - 14	Systemic connective tissue disorders Systemic Lupus Erythematosus. Etiology, pathogenesis, clinical presentation, main syndromes, disease course variants. Diagnosis, treatment, prevention, prognosis. Systemic Sclerosis (Scleroderma). Etiology, pathogenesis, clinical presentation, main syndromes, disease course variants. Diagnosis, treatment, prevention, prognosis. Dermatopolymyositis, Sjögren's Syndrome. Antiphospholipid Syndrome. Etiology, pathogenesis, clinical presentation, main	All		
		4	12	0
		Online		
		0	0	0

	syndromes, disease course variants. Diagnosis, treatment, prevention, prognosis. Systemic Vasculitides. Classification. Main pathomorphological processes. Internal organ involvement. Henoch-Schönlein purpura, polyarteritis nodosa, microscopic polyangiitis, eosinophilic granulomatosis with polyangiitis (Churg-Strauss syndrome), Takayasu arteritis, giant cell arteritis (Horton's disease), Kawasaki disease, Behçet's disease: features of clinical presentation. Treatment principles, prognosis, outcomes.			
15 - 16	General Therapeutic Issues • Fever of Unknown Origin • Obesity • Alcoholism	All		
		2	6	0
		Online		
		0	0	0
	<i>10 Semester</i>	16	60	0
1-8	The First Section	8	30	0
1 - 4	Differential Diagnosis in Cardiology. Differential diagnosis of arterial hypertension: primary and secondary HTN. Causes, prevalence, clinical and diagnostic features, findings from instrumental and laboratory methods in various forms of secondary HTN. Pharmacotherapy of arterial hypertension. Differential diagnosis of chest pain. Differential diagnosis of cardiomegaly. Differential diagnosis of cardiac arrhythmias and conduction disorders. Differential diagnosis of syncope. Supraventricular and ventricular arrhythmias: classification, diagnosis, management approach. Wide complex tachycardia. Long QT and short QT syndromes. Sick sinus syndrome: types, clinical presentation, treatment approaches. AV block: classification, treatment approaches. Morgagni-Adams-Stokes attacks. WPW syndrome, CLC syndrome.	All		
		4	15	0
		Online		
		0	0	0
5 - 8	Differential Diagnosis in Pulmonology Differential diagnosis of pleural effusion. Etiology, pathogenesis. Diagnosis of pleural effusion. Radiographic diagnosis, ultrasound diagnosis, computed tomography. Treatment for para- and metapneumonic effusions. Empyema. Routes of infection. Etiology, classification, clinical presentation of empyema. Treatment of empyema. Hydrothorax. Spontaneous pneumothorax. Differential diagnosis of broncho-obstructive syndrome. Definition of broncho-obstructive syndrome, clinical manifestations, diagnosis. Main diseases presenting with broncho-obstructive syndrome. Pulmonary function testing, bronchodilator test. Differential diagnosis of pneumonia with neoplasms, metastatic lung lesions, infarct pneumonia, lung involvement in collagen vascular diseases, lymphoproliferative disorders, sarcoidosis, and tuberculosis.	All		
		4	15	0
		Online		
		0	0	0
9-15	The Second Section	8	30	0
9 - 11	Differential Diagnosis of Systemic Connective Tissue	All		

	Diseases. Features of internal organ involvement, main pathomorphological processes. Specific manifestations and course of systemic lupus erythematosus, systemic sclerosis, dermatopolymyositis, Sjögren's disease. Differential diagnosis of scleroderma, Raynaud's phenomenon, muscle weakness, sicca syndrome. Progression, acute conditions, outcomes. Treatment principles: symptomatic and pathogenetic therapy. Differential Diagnosis of Systemic Vasculitides. Features of clinical manifestations and diagnosis of Henoch-Schönlein purpura, polyarteritis nodosa, Takayasu arteritis, giant cell (temporal) arteritis, Kawasaki disease, Behçet's disease. Treatment principles, prognosis, outcomes. Differential Diagnosis of Joint Syndrome. Features of clinical manifestations, diagnosis, and treatment of rheumatoid arthritis, osteoarthritis, ankylosing spondylitis, sacroiliitis, gouty arthritis, psoriatic arthritis. Features of internal organ involvement. Treatment principles.	4	15	0
		Online		
		0	0	0
12 - 15	Differential Diagnosis in Gastroenterology Differential diagnosis of dysphagia. Diagnostic investigations for dysphagia. Causes of dysphagia. Psychogenic dysphagia. Dysphagia in systemic connective tissue diseases (systemic sclerosis, Sjögren's syndrome). Inflammatory and neoplastic diseases of the oral cavity, pharynx, and esophagus. Mechanical causes. Neuromuscular causes. Sideropenic dysphagia (Plummer-Vinson syndrome). External compression. Achalasia. Esophageal strictures. Esophageal spasm. Esophageal cancer. Differential diagnosis of large intestine diseases. Inflammatory bowel diseases. Infectious and non-infectious lesions. Pseudomembranous colitis. Microscopic colitis. Tumors of the colon. Diverticulosis and diverticulitis. "Red flag" warning signs. Differential diagnosis of small intestine diseases. Classification of small intestine diseases. Clinical syndromes in small intestine disorders. Methods of examining a patient with small bowel pathology. Crohn's disease with small intestine involvement. Eosinophilic enteritis. Radiation enteritis. Whipple's disease. Celiac disease and disaccharidase deficiency. Protein-losing enteropathy. Tuberculosis of the small intestine. Small bowel involvement in AIDS. Amyloidosis of the small intestine. Tumors of the small intestine (carcinoid, carcinoma, lymphoma, polyps). Management of a patient with small intestine disease. Differential diagnosis of constipation and diarrhea. Pathophysiological mechanisms. Etiology, diagnosis, treatment. Features of diarrhea in acute infectious diseases, inflammatory bowel diseases of unknown etiology, celiac disease, Whipple's disease, amyloidosis, lymphoma, endocrine enteropathies, drug-induced diarrhea, irritable bowel syndrome. Diagnostic investigations for diarrhea and constipation. Differential diagnosis of liver diseases. Hepatomegaly,	All		
		4	15	0
		Online		
		0	0	0

	splenomegaly, hypersplenism. Differential diagnosis of jaundice and cholestatic syndrome. Classification of chronic hepatitis. Features of viral hepatitis, autoimmune hepatitis, cholestatic hepatitis, primary sclerosing cholangitis, drug-induced hepatitis, alcoholic hepatitis, non-alcoholic (fatty) hepatitis, hereditary liver diseases presenting as chronic hepatitis (hereditary hemochromatosis, porphyrias, Wilson's disease, alpha-1 antitrypsin deficiency), bacterial infections with liver involvement, vascular liver diseases. Treatment of chronic hepatitis. Specifics of managing chronic hepatitis in elderly patients and pregnant women.			
	<i>11 Semester</i>	20	40	0
1-8	The First Section	10	20	0
1 - 4	Differential Diagnosis in Nephrology Differential diagnosis of nephritic syndrome. Components of nephritic syndrome. Etiology. Pathogenesis. Main clinical manifestations. Diagnostic approach for nephritic syndrome. Differential diagnosis of nephrotic syndrome. Components of nephrotic syndrome. Etiology. Pathogenesis. Classification. Main clinical manifestations. Diagnostic approach for nephrotic syndrome. Hypovolemic and hypervolemic variants of nephrotic syndrome. Complications of nephrotic syndrome. Treatment principles. Specifics of treatment depending on the pathogenetic variant.	All		
		5	10	0
		Online		
		0	0	0
5 - 8	Differential Diagnosis in Hematology Differential Diagnosis in Hematology Differential diagnosis of anemias. Hypochromic, hyperchromic, normochromic anemias. Features of clinical presentation and diagnosis of iron-deficiency, vitamin B12/folic acid deficiency, and hemolytic anemias. Diagnostic criteria, diagnostic search algorithms, treatment principles. Differential diagnosis of hemoblastoses (hematologic malignancies). Etiology and pathogenesis. Modern diagnostics of hemoblastoses: immunohistochemistry, immunophenotyping, karyotyping, molecular genetic analysis, patient examination algorithm. Chronic leukemias, blast crisis, pathogenesis, main syndromes and disease stages. Laboratory diagnostics. Clinical manifestations. Treatment principles. Targeted therapy in hematology. Bone marrow transplantation. Differential diagnosis of lymphoproliferative disorders. Lymphadenopathy syndrome, non-Hodgkin lymphomas, Hodgkin lymphoma. Features of patient examination. Staging, standard treatment, specifics of targeted therapy for Hodgkin lymphoma. Follicular lymphoma, lymphocytic lymphoma, hairy cell leukemia. Aggressive lymphomas. Clinical presentation, features. Diagnosis, role of trephine biopsy, immunohistochemical and cytogenetic studies. Treatment principles and prognosis. Differential diagnosis of myeloproliferative neoplasms. Chronic myeloid leukemia. Ph-negative diseases. Myelodysplastic syndrome. Classification. Clinical manifestations of myeloproliferative neoplasms. Diagnostic	All		
		5	10	0
		Online		
		0	0	0

	methods, role of trephine biopsy, immunohistochemical and cytogenetic studies. Treatment principles and prognosis. Differential diagnosis of immunoglobulinopathies (dysproteinemias). Classification and overview. Multiple myeloma. Waldenström's macroglobulinemia. Clinical presentation. Diagnostic methods, role of trephine biopsy, immunohistochemical and cytogenetic studies. Treatment principles and prognosis.			
9-16	The Second Section	10	20	0
9 - 12	Occupational Diseases Concepts of occupational diseases. Main stages in the development of occupational pathology. Classifications of occupational diseases. Diagnostic principles. Specifics of medical documentation management. Expertise in establishing the work-relatedness of a disease, temporary and permanent disability. Prevention of occupational diseases. Occupational diseases with respiratory system involvement. Pneumoconioses. Classification, etiology, pathogenesis. Clinical presentation, complications, diagnosis. Silicosis, silicatoses, metalloconioses, carboconioses, pneumoconioses from mixed dust, from organic dust. Differential diagnosis. Assessment of disability. Treatment and prevention. Rehabilitation. Lung lesions from exposure to chemical and physical factors. Damage from industrial gases. Damage from toxic substances. Gasoline pneumonia. Mendelson's syndrome. Radiation-induced lung injury. Clinical manifestations, diagnosis. Assessment of disability. Treatment and prevention. Rehabilitation. Occupational diseases with blood system involvement. Lead intoxication. Changes in porphyrin metabolism in plumbism. Classification of lead poisoning. Use of antidote therapy. Issues in expertise of work-relatedness. Prevention. Intoxication with aromatic hydrocarbons (benzene and its homologues). Changes in peripheral blood. Pathogenesis. Classification. Specifics of benzene-induced leukemias. Treatment, prevention. Benzene homologues (toluene, xylene, styrene). Rehabilitation. Carboxyhemoglobinemia. Etiology. Pathogenesis. Clinical presentation. Treatment approaches. Disability assessment. Methemoglobinemia. Etiology. Pathogenesis. Clinical presentation. Treatment approaches. Disability assessment. Occupational hemolytic anemias. Etiology. Pathogenesis. Clinical presentation. Treatment approaches. Prevention. Rehabilitation. Etiology, pathogenesis of vibration disease. Main clinical	All		
		5	10	0
		Online		
		0	0	0
13 - 16	Occupational Diseases with Musculoskeletal System Involvement. Neurointoxications and Pesticide Poisoning. Occupational Diseases with Musculoskeletal System Involvement. Neurointoxications and Pesticide Poisoning. Occupational diseases with musculoskeletal system involvement. Etiology, pathogenesis of vibration disease. Main clinical	All		
		5	10	0
		Online		
		0	0	0

	syndromes and their dependence on the type (local, whole-body, combined) and parameters of vibration (low-frequency, mid-frequency, high-frequency). Diagnostic issues. Classification. Treatment, prevention. Disability assessment, rehabilitation. Bursitis, epicondylitis. Chronic tenosynovitis, stenosing ligamentosis, deforming osteoarthritis, periarthritis of the right shoulder joint, coordinator neuroses, myositis. Main occupations. Diagnosis, disease course specifics. Treatment. Prevention. Rehabilitation. Neurointoxications and pesticide poisoning. Neurointoxication. Neurotropic poisons. Features of neurointoxication clinical presentation under modern production conditions. Classification. Main clinical syndromes of mercury and manganese intoxication. Prevention. Treatment. Rehabilitation issues. Pesticide poisoning (organophosphates, organochlorines, pyrethroids, carbamates, nitrophenols, copper-containing). Classification, pathogenesis, clinical presentation. Diagnosis. Treatment. Medical and social assessment (expertise).			
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Abbreviated names of online options:

Abbreviation	Full name
EC	E-course
FtM	Full-text material
FtL	Full-text lectures
VM	Video materials
AM	Audio materials
Prs	Presentations
T	Tests
ERM	E-reference materials
IS	Interactive site

PRACTICAL SESSIONS TOPICS

Weeks	Topics / Content
	<i>9 Semester</i>
1 - 3	Cardiology 1. Secondary Arterial Hypertension. Renal, endocrine, cardiovascular hypertension (aortic valve insufficiency, coarctation of the aorta). Cerebral hypertension, drug-induced hypertension. Resistant hypertension. Pseudoresistant hypertension. Refractory hypertension. Hypertensive crises, types. Management approaches. Prevention of complications. 2. Infectious Endocarditis. Etiology, pathogenesis. Risk factors. Classification. Clinical presentation, variants of onset and disease progression. Complications, diagnosis, treatment, prevention, outcomes and prognosis. 3. Non-rheumatic Myocarditis and Cardiomyopathies. Modern classifications of cardiomyopathies. Clinical presentation, diagnosis, differential diagnosis, patient management algorithms. Dilated, hypertrophic, restrictive cardiomyopathy: types, course characteristics, treatment. Secondary forms of cardiomyopathies: classification, diagnosis, management approach. Arrhythmogenic right ventricular dysplasia/cardiomyopathy:

	diagnostic criteria, management approach. Peripartum cardiomyopathy. Takotsubo syndrome. 4. Pericarditis. Etiology and pathogenesis, clinical manifestations, treatment principles. Complications of myocardial infarction (early, late): definition, classification, clinical presentation, differential diagnosis, management approach. Arrhythmias and conduction disorders. Torsades de pointes. Ventricular fibrillation. Myocardial rupture. Left ventricular aneurysm, pseudoaneurysm. Pulmonary edema. Cardiogenic shock. Dressler syndrome. 5. Acute Coronary Syndrome. Features of clinical presentation and ECG data. Management algorithm for patients with ACS. Indications/contraindications, timing, complications of myocardial revascularization. Dual antiplatelet therapy, indications, contraindications, prevention of complications, prognosis. Acute Heart Failure, Decompensation of Chronic Heart Failure. Etiology. Pathogenesis. Risk factors. Classification. Clinical profiles of patients with AHF. Complications. Diagnosis. Formulation of diagnosis. Course and outcomes. Treatment: goals, drug selection. Respiratory support, pharmacological and device-based therapy. 6. Acquired Heart Valve Diseases in Adults. Differential diagnosis, clinical presentation, treatment, indications for surgical intervention. Hemodynamic characteristics. Clinical manifestations. Instrumental diagnostics.
4 - 5	Functional Diagnostics in Cardiology 1. Echocardiography, 24-hour Holter ECG monitoring, stress tests. Methodology of performance. Indications/contraindications. Variants. Diagnostic capabilities of the methods. Echocardiographic findings in various cardiovascular diseases. Etiology of left ventricular myocardial hypertrophy, differential diagnosis. Causes of dilation of the left and right heart chambers, differential diagnosis. Types and causes of left ventricular myocardial segmental wall motion abnormalities, differential diagnosis. Heart valve dysfunctions, patient management algorithm, indications for cardiac surgical correction. Intracardiac thromboses, tumors: diagnostic criteria, differential diagnosis, management algorithm. 2. 24-hour ambulatory blood pressure monitoring (ABPM). Diagnostic criteria for arterial hypertension based on ABPM. Diagnosis of arrhythmias, conduction disorders, and coronary artery disease based on Holter ECG monitoring; indications for cardiac surgical correction. Types of ECG stress tests, indications for cardiac surgical correction.
6 - 8	Pulmonology 1. Nosocomial pneumonia, differential diagnosis of pneumonia. Definition of nosocomial pneumonia. Classification. Pathogenesis. Risk factors for developing nosocomial pneumonia. Etiology of nosocomial pneumonia. Diagnosis. Main radiological syndromes in pneumonia, treatment of nosocomial pneumonia. 2. Disorders of pulmonary circulation. Pulmonary embolism. Clinical probability of PE. Clinical presentation, diagnosis, complications, treatment. Arterial pulmonary hypertension. Differential diagnosis of primary and secondary pulmonary hypertension. Clinical manifestations, diagnosis. Pharmacological and surgical treatment. 3. Chronic cor pulmonale. Respiratory failure. 4. Pulmonary manifestations of certain hereditary diseases. Cystic fibrosis, alpha-1 antitrypsin deficiency. Clinical signs, diagnosis, treatment principles. Parasitic lung diseases. Importance for differential diagnosis. 5. Respiratory sarcoidosis. Epidemiology, etiology, pathogenesis. Classification. Clinical presentation and diagnosis. Treatment, prognosis. 6. Disseminated processes in the lungs. Idiopathic pulmonary fibrosis, exogenous allergic alveolitis. Granulomatosis with polyangiitis (Wegener's granulomatosis). Definition of interstitial lung diseases. Classification. Main causes and pathogenetic mechanisms of interstitial lung disease. Clinical presentation. Biomarkers of interstitial lung disease. Instrumental diagnostics. Laboratory diagnostics. Treatment, prevention, prognosis.
9 - 11	Gastroenterology

	1. Inflammatory bowel diseases – ulcerative colitis and Crohn's disease. Etiology, pathogenesis, clinical presentation, diagnostic criteria. Complications. Diagnosis, treatment regimens, "rescue therapy," prevention, prognosis. 2. Esophageal diseases. Achalasia, cardiospasm. Etiology, pathogenesis, clinical presentation, diagnosis, treatment. 3. Functional disorders of the stomach and intestines. Functional dyspepsia. Functional bowel disorder. 4. Malabsorption and maldigestion. Etiology, clinical presentation, diagnosis, treatment. Enteropathies. 5. Biliary dyskinesia. Pathogenesis, diagnostic criteria, diagnosis, treatment, prevention. Postcholecystectomy syndrome. 6. Autoimmune hepatitis. Etiology, pathogenesis, clinical presentation, diagnosis, therapeutic approach. Chronic primary cholangitis.
12 - 14	Systemic Connective Tissue Diseases. Systemic Connective Tissue Diseases. 1. Systemic Lupus Erythematosus. Etiology, pathogenesis, clinical presentation, main syndromes, disease course variants. Diagnosis, treatment, prevention, prognosis. 2. Systemic Sclerosis (Scleroderma). Etiology, pathogenesis, clinical presentation, main syndromes, disease course variants. Diagnosis, treatment, prevention, prognosis. 3. Dermatopolymyositis, Sjögren's Syndrome. Antiphospholipid Syndrome. Etiology, pathogenesis, clinical presentation, main syndromes, disease course variants. Diagnosis, treatment, prevention, prognosis. 4. Systemic Vasculitides. Classification. Main pathomorphological processes. Internal organ involvement. Specific Vasculitides: Henoch-Schönlein purpura, polyarteritis nodosa, microscopic polyangiitis, eosinophilic granulomatosis with polyangiitis (Churg-Strauss syndrome), Takayasu arteritis, giant cell arteritis (Horton's disease), Kawasaki disease, Behçet's disease: features of clinical presentation. Treatment principles, prognosis, outcomes.
15 - 16	General Issues in Therapy. 1. Obesity. Etiology, pathogenesis, complications, treatment. Obesity-related diseases. 2. Fever of Unknown Origin (FUO). Definition, features of clinical presentation. Diagnosis, treatment principles. 3. Alcoholism. Mechanisms of ethanol-induced damage. Target organs. Principles of diagnosis and treatment.
	<i>10 Semester</i>
1 - 4	Differential Diagnosis in Cardiology. 1. Differential diagnosis of arterial hypertension: primary and secondary HTN. Causes, prevalence, characteristics of clinical course and diagnosis, findings of instrumental and laboratory tests in various forms of secondary HTN. Pharmacotherapy of arterial hypertension. 2. Differential diagnosis of chest pain. Main causes, characteristics of clinical presentation of specific types. Capabilities of instrumental diagnosis and therapy. 3. Differential diagnosis of cardiomegaly. Main causes, characteristics of clinical presentation of specific types. Capabilities of instrumental diagnosis and therapy. 4. Differential diagnosis of cardiac arrhythmias and conduction disorders. Types, ECG signs, clinical significance, selection of antiarrhythmic therapy depending on the type of rhythm or conduction disorder. 5. Differential diagnosis of syncope. 6. Supraventricular and ventricular arrhythmias: classification, diagnosis, management approach. Wide complex tachycardias. Long QT and short QT syndromes. Sick sinus syndrome: types, clinical presentation, treatment approaches. AV block: classification, treatment approaches. Morgagni-Adams-Stokes attacks. WPW syndrome, CLC syndrome.

5 - 8	Differential Diagnosis in Pulmonology 1. Differential diagnosis of pleural effusion. Etiology, pathogenesis. Diagnosis of pleural effusion. Radiographic diagnosis, ultrasound diagnosis, computed tomography. Treatment of para- and metapneumonic effusions. Empyema. Routes of infection. Etiology, classification, clinical presentation of empyema. Treatment of empyema. Hydrothorax. Spontaneous pneumothorax. 2. Differential diagnosis of broncho-obstructive syndrome. Definition of broncho-obstructive syndrome, clinical manifestations, diagnosis. Major diseases presenting with broncho-obstructive syndrome. Main causes, characteristics of clinical presentation. Capabilities of instrumental diagnosis and therapy. Pulmonary function testing, bronchodilator test. 3. Differential diagnosis of pneumonia with neoplasms, metastatic lung lesions, infarct pneumonia, lung involvement in collagen vascular diseases, lymphoproliferative disorders, sarcoidosis, and tuberculosis. 4. Differential diagnosis of disseminated lung processes, interstitial lung diseases. Differential diagnosis of major interstitial and granulomatous lung diseases: idiopathic pulmonary fibrosis, hypersensitivity pneumonitis (exogenous allergic alveolitis), pneumoconioses, tuberculosis, sarcoidosis. Main causes, characteristics of clinical presentation. Capabilities of instrumental diagnosis and therapy.
9 - 11	Differential Diagnosis of Systemic Connective Tissue Diseases. 1. Features of internal organ involvement, main pathomorphological processes. Specifics of manifestations and course of systemic lupus erythematosus, systemic sclerosis, dermatopolymyositis, Sjögren's syndrome. Differential diagnosis of scleroderma, Raynaud's phenomenon, muscle weakness, sicca syndrome. Progression, acute conditions, outcomes. Capabilities of instrumental diagnosis and therapy. Treatment principles: symptomatic and pathogenetic therapy. 2. Differential diagnosis of systemic vasculitides. Features of clinical manifestations and diagnosis of Henoch-Schönlein purpura, polyarteritis nodosa, Takayasu arteritis, giant cell (temporal) arteritis, Kawasaki disease, Behçet's disease. Treatment principles, prognosis, outcomes. 3. Differential diagnosis of joint syndrome. Features of clinical manifestations, diagnosis, and treatment of rheumatoid arthritis, osteoarthritis, ankylosing spondylitis, sacroiliitis, gouty arthritis, psoriatic arthritis. Features of internal organ involvement. Treatment principles.
12 - 15	Differential Diagnosis in Gastroenterology 1. Differential diagnosis of dysphagia. Diagnostic investigations for dysphagia. Causes of dysphagia. Psychogenic dysphagia. Dysphagia in systemic connective tissue diseases (systemic sclerosis, Sjögren's syndrome). Inflammatory and neoplastic diseases of the oral cavity, pharynx, and esophagus. Mechanical causes. Neuromuscular causes. Sideropenic dysphagia (Plummer-Vinson syndrome). External compression. Achalasia. Esophageal strictures. Esophageal spasm. Esophageal cancer. 2. Differential diagnosis of large intestine diseases. Inflammatory bowel diseases. Infectious and non-infectious lesions. Pseudomembranous colitis. Microscopic colitis. Tumors of the colon. Diverticulosis and diverticulitis. "Red flag" warning signs. 3. Differential diagnosis of small intestine diseases. Classification of small intestine diseases. Clinical syndromes in small intestine disorders. Methods of examining a patient with small bowel pathology. Crohn's disease with small intestine involvement. Eosinophilic enteritis. Radiation enteritis. Whipple's disease. Celiac disease and disaccharidase deficiency. Protein-losing enteropathy. Tuberculosis of the small intestine. Small bowel involvement in AIDS. Amyloidosis of the small intestine. Tumors of the small intestine (carcinoid, carcinoma, lymphoma, polyps). Management of a patient with small intestine disease. 4. Differential diagnosis of constipation and diarrhea. Pathophysiological mechanisms.

	Etiology, diagnosis, treatment. Features of diarrhea in acute infectious diseases, inflammatory bowel diseases of unknown etiology, celiac disease, Whipple's disease, amyloidosis, lymphoma, endocrine enteropathies, drug-induced diarrhea, irritable bowel syndrome. Diagnostic investigations for diarrhea and constipation. 5. Differential diagnosis of liver diseases. Hepatomegaly, splenomegaly, hypersplenism. Main causes, characteristics of clinical presentation. Capabilities of instrumental diagnosis and therapy. 6. Differential diagnosis of jaundice and cholestatic syndrome. Classification of chronic hepatitis. Features of viral hepatitis, autoimmune hepatitis, cholestatic hepatitis, primary sclerosing cholangitis, drug-induced hepatitis, alcoholic hepatitis, non-alcoholic (fatty) hepatitis, hereditary liver diseases presenting as chronic hepatitis (hereditary hemochromatosis, porphyrias, Wilson's disease, alpha-1 antitrypsin deficiency), bacterial infections with liver involvement, vascular liver diseases. Treatment of chronic hepatitis. Specifics of managing chronic hepatitis in elderly patients and pregnant women.
	<i>11 Semester</i>
1 - 4	Differential Diagnosis in Nephrology 1. Differential diagnosis of nephritic syndrome. Components of nephritic syndrome. Etiology. Pathogenesis. Main clinical manifestations. Diagnostic approach for nephritic syndrome. Capabilities of instrumental diagnosis and therapy. 2. Differential diagnosis of nephrotic syndrome. Components of nephrotic syndrome. Etiology. Pathogenesis. Classification. Main clinical manifestations. Diagnostic approach for nephrotic syndrome. Hypovolemic and hypervolemic variants of nephrotic syndrome. Complications of nephrotic syndrome. Treatment principles. Specifics of treatment depending on the pathogenetic variant.
5 - 8	Differential Diagnosis in Hematology 1. Differential diagnosis of anemias. Hypochromic, hyperchromic, normochromic anemias. Features of clinical presentation and diagnosis of iron-deficiency, vitamin B12/folic acid deficiency, and hemolytic anemias. Diagnostic criteria, diagnostic algorithms, treatment principles. 2. Differential diagnosis of hemoblastoses (hematologic malignancies). Etiology and pathogenesis. Modern diagnostics of hemoblastoses: immunohistochemistry, immunophenotyping, karyotyping, molecular genetic analysis, patient examination algorithm. Chronic leukemias, blast crisis, pathogenesis, main syndromes and disease stages. Laboratory diagnostics. Clinical manifestations. Treatment principles. Targeted therapy in hematology. Bone marrow transplantation. 3. Differential diagnosis of lymphoproliferative disorders. Lymphadenopathy syndrome, non-Hodgkin lymphomas, Hodgkin lymphoma. Features of patient examination. Staging, standard treatment, specifics of targeted therapy for Hodgkin lymphoma. Follicular lymphoma, lymphocytic lymphoma, hairy cell leukemia. Aggressive lymphomas. Clinical presentation, features. Diagnosis, role of trephine biopsy, immunohistochemical and cytogenetic studies. Treatment principles and prognosis. 4. Differential diagnosis of myeloproliferative neoplasms. Chronic myeloid leukemia. Ph-negative diseases. Myelodysplastic syndrome. Classification. Clinical manifestations of myeloproliferative neoplasms. Diagnostic methods, role of trephine biopsy, immunohistochemical and cytogenetic studies. Treatment principles and prognosis. 5. Differential diagnosis of immunoglobulinopathies (dysproteinemias). Classification and overview. Multiple myeloma. Waldenström's macroglobulinemia. Clinical presentation. Diagnostic methods, role of trephine biopsy, immunohistochemical and cytogenetic studies. Treatment principles and prognosis.
9 - 12	Occupational Diseases Occupational Diseases 1. Concepts of Occupational Diseases. Main stages in the development of occupational

	pathology. Classifications of occupational diseases. Diagnostic principles. Specifics of medical documentation management. Expertise in establishing the work-relatedness of a disease, temporary and permanent disability. Prevention of occupational diseases. 2. Pneumoconioses. Classification, etiology, pathogenesis. Clinical presentation, complications, diagnosis. Silicosis, silicatoses, metalloconioses, carboconioses, pneumoconioses from mixed dust, from organic dust. Differential diagnosis. Assessment of disability. Treatment and prevention. Rehabilitation. 3. Lung Lesions from Exposure to Chemical and Physical Factors. Damage from industrial gases. Damage from toxic substances. Gasoline pneumonia. Mendelson's syndrome. Radiation-induced lung injury. Clinical manifestations, diagnosis. Assessment of disability. Treatment and prevention. Rehabilitation. 4. Lead Intoxication. Changes in porphyrin metabolism in plumbism. Classification of lead poisoning. Use of antidote therapy. Issues in expertise of work-relatedness. Prevention. Intoxication with Aromatic Hydrocarbons (Benzene and its Homologues). Changes in peripheral blood. Pathogenesis. Classification. Specifics of benzene-induced leukemias. Treatment, prevention. Benzene homologues (toluene, xylene, styrene). Rehabilitation. 5. Carboxyhemoglobinemia. Etiology. Pathogenesis. Clinical presentation. Treatment approaches. Disability assessment. Methemoglobinemia. Etiology. Pathogenesis. Clinical presentation. Treatment approaches. Disability assessment. Occupational Hemolytic Anemias. Etiology. Pathogenesis. Clinical presentation. Treatment approaches. Prevention. Rehabilitation.
13 - 16	Occupational Diseases with Musculoskeletal System Involvement. Neurointoxications and Pesticide Poisoning. 1. Vibration Disease. Etiology, pathogenesis. Main clinical syndromes and their dependence on the type (local, whole-body, combined) and parameters of vibration (low-frequency, mid-frequency, high-frequency). Diagnostic issues. Classification. Treatment, prevention. Disability assessment, rehabilitation. 2. Bursitis, Epicondylitis. Chronic Tenosynovitis, Stenosing Ligamentosis, Deforming Osteoarthritis, Periarthritis of the Right Shoulder Joint, Coordinator Neuroses, Myositis. Main occupations. Diagnosis, disease course specifics. Treatment. Prevention. Rehabilitation. 3. Neurointoxication. Neurotropic poisons. Features of neurointoxication clinical presentation under modern production conditions. Classification. Main clinical syndromes of mercury and manganese intoxication. Prevention. Treatment. Rehabilitation issues. 4. Pesticide Poisoning (organophosphates, organochlorines, pyrethroids, carbamates, nitrophenols, copper-containing). Classification, pathogenesis, clinical presentation. Diagnosis. Treatment. Medical and social assessment (expertise).

6. EDUCATIONAL TECHNOLOGIES

In the process of teaching the discipline, the following educational technologies, methods, and approaches for developing competencies are used:

- Master class (on basic patient examination methods);
- Small group method;
- Analysis of clinical cases;
- Practicing practical skills;
- Patient supervision and writing fragments of a medical history;
- Preparation and defense of a training medical history.

Elements included in the student's independent work:

- Preparation for clinical practical classes and intermediate assessment;
- Patient supervision and writing a training medical history;
- Work with additional literature and Internet resources.

Clinical practical classes are conducted in medical organizations (hospitals).

7. ASSESSMENT TOOLKIT

The assessment toolkit ensures verification of the intended learning outcomes achievement (competency-based rubrics) using current, midterm and interim assessment of the course.

The link between developed competencies and their assessment is presented in the following table:

Competency	Achievement rubrics	Assessment activity (Syl 1)	Assessment activity (Syl 2)	Assessment activity (Syl 3)
ОПК-2	3-ОПК-2	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	У-ОПК-2	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	В-ОПК-2	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
ОПК-4	3-ОПК-4	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	У-ОПК-4	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	В-ОПК-4	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
ОПК-6	3-ОПК-6	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	У-ОПК-6	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	В-ОПК-6	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
ОПК-7	3-ОПК-7	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	У-ОПК-7	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	В-ОПК-7	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
ОПК-8	3-ОПК-8	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	У-ОПК-8	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	В-ОПК-8	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
ОПК-9	3-ОПК-9	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	У-ОПК-9	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	В-ОПК-9	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15

ПК-3.1	З-ПК-3.1	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	У-ПК-3.1	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	В-ПК-3.1	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
ПК-3.2	З-ПК-3.2	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	У-ПК-3.2	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	В-ПК-3.2	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
ПК-3.3	З-ПК-3.3	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	У-ПК-3.3	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	В-ПК-3.3	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
ПК-3.4	З-ПК-3.4	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	У-ПК-3.4	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15
	В-ПК-3.4	PFE, T-8, T-15, T-8, T-15	PFE, T-8, T-14, T-8, T-14	Ex, T-8, T-16, T-8, T-15

Educational achievement rubrics scales

The scale of each assessment activity varies from 0 to the maximum established point, inclusive. The final assessment of the course is performed on a 100-point scale and represents the sum of the points earned by the student in the section assessments, framework of current and interim assessment.

Sections and interim assessments are considered passed when the student achieves a minimum score equal to 60% of the maximum. The final grade is assigned only upon passing all sections and the interim assessment.

The final grade is assigned in accordance with the following scale:

Total score	Rating on a 4-point scale	Pass/fail examination	ECTS assessment
90-100	5 – « <i>excellent</i> »	« <i>pass</i> »	A
85-89	4 – « <i>good</i> »		B
75-84			C
70-74			D
65-69	3 – « <i>satisfactory</i> »		E
60-64			F
below 60	2 – « <i>fail</i> »	« <i>fail</i> »	F

An “excellent” grade indicates a deep and solid mastery of the program material by a student who presents their answers consistently, clearly, and logically, is able to closely link theory with practice, and uses materials from monographic literature in their answers.

A “good” grade corresponds to a student’s solid knowledge of the material, who presents their answers competently and to the point, without any significant inaccuracies.

A “satisfactory” grade corresponds to the basic level of mastery of the material by the student, in which the main material has been mastered, but its details have not been assimilated, the answers contain inaccuracies, insufficiently correct wording and logical inconsistencies.

A grade “pass” corresponds to at least a basic level of mastery of the program material, in which the student possesses the necessary knowledge, skills, and abilities, and is able to apply theoretical principles to solve typical practical problems.

A grade “fail” is given to a student who lacks a significant understanding of the curriculum material, makes significant errors in their answers, or fails all required assignments. These students are generally unable to continue their studies without additional classes.

8. ACADEMIC COURSE EDUCATIONAL, METHODOLOGICAL AND INFORMATIONAL SUPPORT

CORE READING:

1. ЭИ Н99 Internal Diseases. Volume I : , Martynov A.I. [и др.], Москва: ГЭОТАР-Медиа, 2022
2. ЭИ Н99 Internal Diseases. Volume II : , Martynov A.I. [и др.], Москва: ГЭОТАР-Медиа, 2022
3. ЭИ В 60 Внутренние болезни. В 2 томах. Том 1. : , , Москва: ГЭОТАР-Медиа, 2023
4. ЭИ В 60 Внутренние болезни. В 2 томах. Том 2. : , , Москва: ГЭОТАР-Медиа, 2023
5. ЭИ П 84 Профессиональные болезни : учебник, , Москва: ГЭОТАР-Медиа, 2021
6. ЭИ Р 32 Ревматология : , , Москва: ГЭОТАР-Медиа, 2023

FURTHER READING:

1. ЭИ Е80 Essential echocardiography : : a companion to Braunwald's Heart disease / , , Philadelphia, PA :: Elsevier,, 2019
2. ЭИ Р 84 Анемии. Краткое руководство для практических врачей всех специальностей : , Рукавицын О.А., Москва: ГЭОТАР-Медиа, 2021
3. ЭИ В 60 Внебольничная пневмония : практическое пособие, , Москва: ГЭОТАР-Медиа, 2017
4. ЭИ Г22 Гастроэзофагеальная рефлюксная болезнь : учебное пособие, Парцвания-Виноградова Е.В. [и др.], Москва: ГЭОТАР-Медиа, 2019

5. ЭИ К 84 Гипертоническая болезнь : практическое руководство, Круглов В.А., Москва: ГЭОТАР-Медиа, 2017
6. ЭИ К 55 Заболевания органов желудочно-кишечного тракта : , Кобалава Ж.Д., Москва: ГЭОТАР-Медиа, 2022
7. ЭИ И74 Инфаркт миокарда : практическое руководство, Никулина Н.Н., Якушин С.С., Селезнев С.В., Москва: ГЭОТАР-Медиа, 2018
8. ЭИ К21 Кардиология : учебник, , Москва: ГЭОТАР-Медиа, 2024
9. ЭИ К21 Кардиология. Национальное руководство. Краткое издание : практическое руководство, , Москва: ГЭОТАР-Медиа, 2023
10. ЭИ Р 34 Кардиология: кардиомиопатии : учебник для вузов, Харлап М. С. [и др.], Москва: Юрайт, 2025
11. ЭИ К46 Кишечная микробиота как регулятор работы органов и систем человека : руководство для врачей : практическое руководство, , Москва: ГЭОТАР-Медиа, 2024
12. ЭИ К 46 Клиническая лабораторная диагностика : , Кишкун А.А., Москва: ГЭОТАР-Медиа, 2023
13. ЭИ Х 19 Лихорадка неясного генеза. Определение, рекомендации, диагностические подходы : , Дворецкий Л.И., Хандрик В., Менцель Г., Moscow: ГЭОТАР-Медиа, 2008
14. ЭИ А 61 Ожирение. Современный взгляд на патогенез и терапию. Т. I : учебное пособие, Аметов А.С., Москва: ГЭОТАР-Медиа, 2021
15. ЭИ Л 25 Поликлиническая терапия: хроническое легочное сердце : учебное пособие для вузов, Михайлусова М. П. [и др.], Москва: Юрайт, 2024
16. ЭИ М 92 Профессиональные болезни : Рекомендовано ГБОУ ВПО "Первый Московский государственный медицинский университет имени И.М. Сеченова" в качестве учебника для студентов учреждений высшего профессионального образования, обучающихся по специальностям 060101 "Лечебное дело" и 060105 "Медико-профилактическое дело" по дисциплине "Профессиональные болезни", Мухин Н.А. [и др.], Москва: ГЭОТАР-Медиа, 2020
17. ЭИ П88 Пульмонология : национальное руководство, краткое издание, , Москва: ГЭОТАР-Медиа, 2020
18. ЭИ Л 25 Сердечная недостаточность: актуальные вопросы диагностики, лечения и профилактики с позиций доказательной медицины : учебник для вузов, Таратухин Е. О. [и др.], Москва: Юрайт, 2024
19. ЭИ Ф24 Фармакотерапия заболеваний желудочно-кишечного тракта : руководство для врачей : практическое руководство, Дроздов В. Н., Москва: ГЭОТАР-Медиа, 2023
20. ЭИ Б 87 Фтизиатрия : учебник для вузов, Браженко О. Н., Москва: Юрайт, 2025

21. ЭИ Э 45 Электрокардиограмма при инфаркте миокарда : учебное наглядное пособие, , Москва: ГЭОТАР-Медиа, 2016

22. ЭИ П14 Эндоскопия желудочно-кишечного тракта : монография, Палевская С.А., Короткевич А.Г., Москва: ГЭОТАР-Медиа, 2022

SOFTWARE:

No special softwares is required

LMS AND ONLINE RESOURCES

<https://online.mephi.ru/>

<http://library.mephi.ru/>

9. LOGISTICAL SUPPORT

1. Фантом реанимационный (торс) с электрическим контроллером (64-301)
2. Весы напольные с ростомером медицинские Твес ВМЭН-200С-50/100-СТ (64-301)
3. Весы напольные с ростомером медицинские Твес ВМЭН-200С-50/100-СТ (64-302)
4. Тренажер аускультации сердца и легких Р1060 ФОМА (64-301)
5. Манекен-симулятор для отработки навыков пальпации живота (с контроллером) Z980А (64-301)
6. Спирограф СМП21-01РД (64-301)
7. Манекен сердечно-легочной реанимации Р4201СРР ВОЛОДЯ. Модификация 1 (64-301)
8. Учебный автоматический наружный дефибриллятор МУ0353 (64-301)
9. Мешок Амбу КД-МП-В (64-301)
10. Персональный компьютер: Процессор CPU Intel Core i7-8700 (3.2GHz/12MB/6 cores)
Материнская плата Gig (Клиническая база)
11. Мышь, клавиатура (Клиническая база)
12. Проектор SMART P109 (Клиническая база)
13. Кушетка медицинская (Клиническая база)
14. Монитор (Клиническая база)
15. Медицинское оборудование для практической подготовки обучающихся, предусмотренное договором (Клиническая база)
16. Иное оснащение, предусмотренное порядками оказания медицинской помощи по соответствующему профилю (Клиническая база)

17. Аппарат холтеровского мониторирования ЭКГ (64-301)

18. Аппарат суточного мониторирования АД (СМАД) (64-301)

10. EDUCATIONAL AND METHODOLOGICAL RECOMMENDATIONS FOR STUDENTS

Before you begin studying the topic, you need to familiarize yourself with the main questions of the practical lesson plan and the list of recommended literature.

When preparing for a practical lesson, you should first review lecture notes, textbook sections, and teaching aids to gain a general understanding of the topic's place and significance in the course being studied. Then, consult additional literature and take notes on the recommended sources.

In the process of studying the recommended material, it is necessary to understand the structure of the topic being studied, identify the main points, follow their logic and thereby delve into the essence of the problem being studied.

It is necessary to keep records of the material being studied in the form of notes, which, along with visual memory, also includes motor memory and allows for the accumulation of an individual fund of auxiliary materials for the rapid repetition of what has been read, for the mobilization of accumulated knowledge.

Clinical practical classes

The most important stage of the practical lesson is the students' independent work on mastering practical skills: in-simulated conditions, at the patient's bedside, in the functional diagnostics room, etc.

Depending on the specific topic of the lesson, the student independently (or under the supervision of the teacher) questions the patient, conducts a clinical examination, is present during instrumental diagnostics and studies the results of additional studies, summarizes the data, presents it in the form of fragments of the medical history and reports the results to the teacher.

Achievements are assessed individually for each student, based on the degree of development of practical skills and their theoretical foundations.

Clinical case studies of specific patients are conducted for the entire group or through students' participation in clinical case studies and periodic scientific and practical conferences at the medical institutions where their practical training takes place. During these case studies, the instructor evaluates each student's active participation and clinical reasoning skills.

Solving situational tasks proposed by the teacher, which develop clinical thinking and force the student to use knowledge gained in various subjects of the specialty.

Active and interactive forms of conducting classes are widely used in the educational process (work in small groups, activation of creative activities, use of computer training programs, conference classes).

The teacher supervises the students' independent work, preparation of abstracts, research and development work, work with the patient together with the teacher, interpretation of data from additional research methods, and completion of medical documentation.

Basic note-taking forms: outline (simple and detailed), excerpts, and abstracts. During preparation, it is important to compare sources, consider the material being studied, develop an action plan, and carefully consider your oral presentation.

Recommendations for preparing for the test.

Test – 10-15-20-25 points. Each question – 1 (2) point.

TOPICS: Specified in each specific section

Answer requirements: A clear, detailed answer (2 points/question) or a choice of the correct answer to the test question (1 point/question).

Recommendations for preparing for a test/exam

Response requirements and evaluation criteria:

An "excellent" grade of 45-50 points on a test/exam is awarded for: a correct, complete, and logically constructed answer; the ability to use specialized terminology; the ability to illustrate theoretical principles with practical material.

A "good" grade of 35–44 points on the exam is awarded for: a correct, complete, and logically constructed answer with minor errors or inaccuracies; the ability to use specialized terminology, but incomplete conclusions or generalizations are made.

A "satisfactory" grade of 30–34 points on the exam is given for: a schematic, incomplete answer; inability to use special terms or ignorance of them; with one serious error;

An "unsatisfactory" grade of <30 points on the exam is given for: answering all questions on the ticket with serious errors; inability to use specialized terminology; inability to give examples of the practical use of scientific knowledge.

Admission to the exam in a discipline is granted based on a score of over 30 points.

A student can earn between 30 and 50 points per semester.

The minimum score for an exam answer is 30, the maximum is 50.

11. EDUCATIONAL AND METHODOLOGICAL RECOMMENDATIONS FOR TEACHERS

A crucial stage of the practical class is the students' independent work to master practical skills: in simulated conditions, at the patient's bedside, in the functional diagnostics room, etc. Depending on the specific class topic, the student independently (or under the instructor's supervision) interviews the patient, performs a clinical examination, attends instrumental diagnostics and studies the results of additional tests, synthesizes the data, presents them as fragments of a medical history, and reports the results to the instructor. Achievements are assessed individually for each student, considering the level of development of practical skills and their theoretical foundations.

Clinical case reviews of thematic patients are conducted for the entire group or through student participation in clinical case reviews and periodic scientific-practical conferences at the medical organizations where practical training takes place. During these reviews, the instructor assesses the active participation of each student and their ability to think clinically.

Solving situational tasks proposed by the instructor, which develop clinical thinking and require the student to use knowledge acquired in various specialized subjects.

Grading and criteria for tests, written assignments with detailed answers, homework, and final test:

1. Tests are graded according to the scheme: 1 point – 1 correct answer. Student did not attempt the work – (-1) point.

2. Written assignments with detailed answers are graded according to the scheme: complete answer – 2 points, incomplete answer – 1 point, no answer – 0 points, student did not attempt the work – (-2) points.

3. Homework must be completed by all students for admission to the final assessment. Late submission results in a deduction from the final score (-1 point).

4. Grading criteria for a presentation report. Conversion from a 100-point to a 10-point (5-point) system.

5. Grading criteria for an essay. Maximum 10 points. Can be converted to a 5-point system.

o 10 points are awarded if all requirements for essay writing are met: the problem is identified and its relevance is justified; a brief analysis of the problem is provided and the author's position is logically presented; conclusions are formulated; the article is fully analyzed; the required length is maintained; formatting requirements are observed.

o 9 points are awarded if the following requirements for essay writing are met: the problem is identified and its relevance is justified; a brief analysis of the problem is provided and the author's position is logically presented; conclusions are formulated; the article is fully analyzed, but the required length is not maintained and/or formatting requirements are not observed.

o 8 points – the main requirements for the essay are met, but with minor shortcomings. In particular, there are inaccuracies in the presentation of the material; the reasoning lacks logical sequence; the essay length is not maintained; there are oversights in formatting.

o 7 points – the main requirements for the essay are met, but with the following shortcomings: there are inaccuracies in the presentation of the material; the reasoning lacks logical sequence; conclusions are not formulated; the essay length is not maintained; there are oversights in formatting.

o 6 points – there are significant deviations from the essay requirements; the topic is only partially covered; factual errors are present in the content; conclusions and a personal viewpoint on the problem are absent.

o 5 points – there are significant deviations from the essay requirements: the topic is only partially covered; factual errors are present in the description of materials and methods; conclusions and a personal viewpoint on the problem are absent; the format is not maintained.

o 4 points – there are significant deviations from the essay requirements: the relevance of the topic is not revealed; factual errors are present in the description of materials and methods; conclusions and a personal viewpoint on the problem are absent; the format is not maintained.

o 3 points – there is no analysis of the research topic's relevance, approaches, and methods used, while the essay length and formal requirements are technically met.

o 2 points – the essay topic is not revealed, and a substantial misunderstanding of the problem is evident. However, the essay length and formal requirements are met.

o 1 point – the essay topic is not revealed, and a substantial misunderstanding of the problem is evident.

o 0 points – the essay was not submitted by the student.

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