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

APPROVED НТС ИФИБ

Protocol No. 3.1

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ACADEMIC COURSE OUTLINE

ПРОПЕДЕВТИКА ВНУТРЕННИХ БОЛЕЗНЕЙ / PROPAEDEUTICS OF INTERNAL DISEASES

Educational program track (speciality) [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**
5	4-5	144-180	32	70	0		42-78	0	PFE
6	6-8	216-288	26	60	0		76-148	0	Ex
Total	10-13	360-468	58	130	0	130	118-226	0	

ABSTRACT

During the course, students develop professional skills in patient examination, the fundamentals of clinical reasoning, medical ethics, and deontology. Propaedeutics of internal medicine forms the foundation of a physician's education in any clinical specialty.

During their studies, students master methods of direct clinical examination of patients, general symptomatology of diseases, general diagnostic methodology, learn to detect the interrelationship of symptoms and understand the pathogenesis of each symptom, and know the diagnostic value of additional methods of examining patients.

Symptomatology, diagnostics, and the fundamentals of specific pathology are studied in an inextricable connection.

1. ACADEMIC COURSE GOALS AND OBJECTIVES

The purpose of mastering the academic discipline is to develop in students systemic theoretical and applied knowledge, skills and professional abilities in methods of examining a patient, the basics of clinical thinking, medical ethics and deontology, as well as skills in modern issues of diagnosing the main diseases of internal organs and the principles of examining patients, necessary for further education and professional activity.

- study of methods of direct examination of the patient (questioning, examination, palpation, percussion, auscultation, measurement of blood pressure, study of the properties of the arterial pulse, etc.);
- study of the main clinical symptoms and syndromes of diseases of internal organs and the mechanisms of their occurrence;
- study of the symptomatology of the most common diseases of internal organs, occurring in a typical classical form;

formation of ideas about the basic principles of the diagnostic process (the basics of clinical thinking);

- development of skills, abilities and competencies necessary for establishing and substantiating a clinical diagnosis;
- development of skills to present the results of a patient’s examination in the form of entries in medical documentation;
- development of interdisciplinary thinking in students with the subsequent formation of the necessary volume of practical skills for independent work in professional activities;
- study of some methods of laboratory and instrumental diagnostics of diseases of internal organs (general and biochemical blood tests, urine tests, examination of pleural contents, sputum tests, stool tests, ECG, echocardiography, radiography of the lungs and heart, spirography, etc.);
- formation of ideas about the basic principles of medical ethics and deontology.

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

It is a compulsory discipline.

For successful mastering, knowledge, skills and abilities formed by previous disciplines and practices are necessary: psychology and pedagogy, philosophy, Latin, anatomy, medical and biological physics, biochemistry, histology, embryology, cytology, topographic anatomy, normal physiology,

medical microbiology and virology, introductory practice (care of patients with a therapeutic profile), nursing practice.

To obtain a comprehensive understanding of the symptomatology of diseases, the pathogenesis of symptoms, the general methodology of diagnosis, and the development of clinical thinking, it is advisable to study the propaedeutics of internal diseases in parallel with such disciplines as pathological anatomy, pathological physiology, pharmacology, and radiation diagnostics.

The knowledge, skills, abilities and practical experience acquired in mastering this discipline are necessary for the successful mastering of all subsequent clinical disciplines included in the curriculum (internal diseases, surgical diseases, faculty therapy, occupational diseases; hospital therapy, hospital surgery, obstetrics, endocrinology; outpatient therapy, infectious diseases, neurology, gynecology, urology, pediatrics diseases, oncology, etc.), as well as for successful completion of internship in the diagnostic profile upon completion of the 6th semester.

3. DEVELOPED COMPETENCIES AND INTENDED LEARNING OUTCOMES

Universal and/or general professional competencies:

Competency code and title	**Code and title of competency-based rubrics**
ОПК-1 [1] – Capable of implementing moral and legal norms, ethical and deontological principles in professional activities.	З-ОПК-1 [1] – Know: - main regulatory legal acts governing physician's activities; - concepts of medical confidentiality, informed voluntary consent for medical intervention, clinical guidelines, procedures and standards of medical care; - fundamental rights and obligations of physicians and patients; - principles of medical ethics (morality) and deontology. У-ОПК-1 [1] – Be able to: - find and apply current regulatory legal acts in professional activities; - protect the rights of physicians and patients. В-ОПК-1 [1] – Possess skills in: - interaction with colleagues and patients in compliance with ethics and deontology; - obtaining informed voluntary consent from patients or their legal representatives for medical interventions.
ОПК-4 [1] – Capable of using medical devices stipulated by the medical care procedures, as well as conducting patient examination for diagnosis establishment.	З-ОПК-4 [1] – Know: - modern diagnostic instrumental examination methods for patients, including functional, radiological, ultrasound, radionuclide diagnostics, and 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 У-ОПК-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 В-ОПК-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
ОПК-5 [1] – Capable of assessing morphofunctional and physiological states, as well as pathological processes in the human body to solve professional tasks.	З-ОПК-5 [1] – Know: - basic medical, pharmaceutical, and morphofunctional terminology, including Latin terms; - structure and functions of the human body, age-related, gender-specific, and individual characteristics of the structure and development of a healthy organism; - physical and chemical nature of processes occurring in a living organism; - patterns of vital activity of the organism, mechanisms of self-regulation and regulation; - features of regulation of the functioning of human body systems in pathological conditions; - patterns of occurrence, development, and outcome of typical pathological processes, the concept of sanogenesis; - etiology and pathogenesis of the most common diseases; - the concept of nosology, principles of disease classification; - principles of microorganism classification, their morphology, physiology, and impact on human health; - structure and functions of the human immune system. У-ОПК-5 [1] – Be able to: - analyze mechanisms of disease development and manifestation; - recognize morphological and functional changes in cells, tissues, organs, and systems of the human body; - use basic physical-chemical and other natural science concepts and methods in solving professional tasks; - determine the cause of death and formulate a pathological diagnosis. В-ОПК-5 [1] – Possess skills in: - conducting microscopy and analyzing microscopic specimens; - correlating morphological and clinical manifestations of diseases; - assessing morphofunctional, physiological states, and pathological processes in humans; - clinical-anatomical analysis of autopsy results.

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			
Diagnostics of diseases and	Individuals (patients); the population; the set	ПК-3.2 [1] - Capable of conducting patient	З-ПК-3.2[1] - Know: - clinical diagnosis

pathological conditions of the patients.	of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population	examinations to establish a diagnosis *The base:* Professional standard: 02.009	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).; У-ПК-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.; В-ПК-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	ПК-3.3 [1] - Able to provide primary medical care in an outpatient setting *The base:* Professional standard: 02.009	З-ПК-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. ; У-ПК-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.; В-ПК-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.

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 the ability and commitment to adhere to professional norms that ensure the ethical character of both work activities and personal conduct outside of work (B21)
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
	5 Semester						
1	Basic methods of clinical examination of the patient. Methods of examination of the respiratory system	1-8	16/34/0	T-8 (25)	25	T-8	З-ОПК-1, З-ОПК-4, В-ОПК-4, З-ОПК-5, У-ОПК-5, В-ОПК-5, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3
2	Methods examination of the circulatory system	9-16	16/36/0	T-15 (25)	25	T-15	З-ОПК-1, З-ОПК-4, В-ОПК-4, З-ОПК-5, У-ОПК-5, В-ОПК-5, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3
	Totals for 5 Semester		32/70/0		50		
	Assessment events for 5 Semester				50	GP	З-ОПК-1, У-ОПК-1, В-ОПК-1, З-ОПК-4, У-ОПК-4, В-ОПК-4, З-ОПК-5, У-ОПК-5, В-ОПК-5, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2,

							З-ПК-3.3, У-ПК-3.3, В-ПК-3.3
	6 Semester						
1	Methods of examination of the digestive and urinary organs	1-8	13/30/0	Т-8 (25)	25	Т-8	З-ОПК-1, З-ОПК-4, В-ОПК-4, З-ОПК-5, У-ОПК-5, В-ОПК-5, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3
2	Methods for examining the hematopoietic organs and endocrine system. Emergency conditions in internal medicine.	9-15	13/30/0	Т-15 (25)	25	Т-15	З-ОПК-1, З-ОПК-4, В-ОПК-4, З-ОПК-5, У-ОПК-5, В-ОПК-5, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3
	Totals for 6 Semester		26/60/0		50		
	Assessment events for 6 Semester				50	Ex	З-ОПК-1, З-ОПК-4, У-ОПК-4, В-ОПК-4, З-ОПК-5, У-ОПК-5, В-ОПК-5, З-ПК-3.2, У-ПК-3.2, В-ПК-3.2, З-ПК-3.3, У-ПК-3.3, В-ПК-3.3

* – 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**
GP	Graded pass
T	Testing
PFE	Pass/fail examination
Ex	Exam

SYLLABUS

Weeks	Topics / Content	Lect., hrs.	Pr./sem., hrs.	Lab., hrs.
	5 Semester	32	70	0
1-8	**Basic methods of clinical examination of the patient. Methods of examination of the respiratory system**	16	34	0
1 - 8	**General topics of the course. Basic methods of clinical examination of patients. General understanding of laboratory and instrumental methods of patient examination. Methods of examination of the resp** Internal medicine and its place among other medical disciplines. Fundamental principles of modern healthcare organization and medical care. Medical ethics and deontology. The sequence of mastering internal medicine from propaedeutics to a course in internal diseases and hospital therapy. Goals and objectives of the propaedeutics course. The concept of "Diagnosis" and its types. Symptoms and syndromes. Outline of a medical history. The importance of a medical history as a scientific, medical, and legal document. Patient examination methodology. Patient interviewing and its importance. The contribution of Russian therapists to the development of the patient interviewing system. Scheme of questioning the patient: passport information, patient complaints (main and additional), history of the current illness (Anamnesis morbi), previous illnesses, family history and heredity data, life history (Anamnesis vitae), allergy history. General examination of the patient. General inspection. Patient's position (active, passive, forced). State of consciousness, types of disturbances. Body type. Concept of constitutional type. Thermometry. Skin and visible mucous membranes. Skin turgor. Subcutaneous fat development. Edema: localization and detection methods. Lymph node examination methods. Diagnostic significance of the identified changes. Muscular system condition. Skeletal system (visible deformities, presence of tenderness upon palpation). Joints (configuration, range of active and passive motion, tenderness upon palpation and movement). Anthropometry. Percussion and auscultation. Physical basis for percussion and auscultation. General rules and techniques for percussion and auscultation. General concept of laboratory and instrumental methods of patient examination Methods for examining the respiratory system. Patient interview: primary complaints and their mechanisms of occurrence. Dry (nonproductive) and sputum-producing (low-productive and productive) cough; distinguishing hemoptysis and pulmonary hemorrhage from nasopharyngeal, esophageal, and gastric hemorrhage. Diagnostic value. Chest pain. Dyspnea (inspiratory, expiratory, and mixed), tachypnea, stridor, and asthma attacks. Mechanism of	All 16 Online 0	34 0	0 0

	occurrence and diagnostic significance. Fever, sweating, chills. Types of temperature curves. Voice changes: hoarseness, aphonia. The importance of anamnesis for the diagnosis of bronchopulmonary diseases. Inspection of the patient. General condition. Patient's state of consciousness. Body temperature, position. Central cyanosis (mechanism of occurrence, diagnostic significance), "drumming fingers" and "watch glass" symptoms. Chest shape, spinal curvature, chest excursion. Breathing pattern (thoracic, abdominal, mixed), specific breathing rhythms. Palpation of the chest. Vocal fremitus assessment. Percussion. Chest percussion guidelines. Comparative and topographic percussion. Topographic lines, determination of the lower border of the lungs and mobility of the lower edges of the lungs. Diagnostic value. Auscultation. Methods and rules of lung auscultation. Breath sounds and their mechanism of occurrence. Differences in wheezing (dry, wet). Crepitation. Pleural friction rub. Diagnostic value. Bronchophony. Laboratory and instrumental methods for examining the lungs. Sputum and pleural effusion examination, imaging techniques, CT, MRI, and their diagnostic value. Bronchoscopy. Indications and contraindications. Spirometry. The main clinical syndromes in diseases of the respiratory system. Bronchial obstruction syndrome, pulmonary tissue consolidation syndrome, air cavity syndrome in the lung, increased airiness syndrome of the pulmonary tissue, atelectasis syndrome, pleural fluid accumulation syndrome, pleural air accumulation syndrome, pleural thickening and cavity closure syndrome, respiratory failure syndrome, inflammatory syndrome. Fundamentals of specific respiratory pathology. Acute and chronic bronchitis. Pneumonia. Lung abscess. Bronchiectasis. Bronchial asthma. Pleurisy. Emphysema. Lung cancer.			
9-16	**Methods examination of the circulatory system**	16	36	0
9 - 16	**Methods examination of the circulatory system** Patient interview. Main complaints and their pathogenesis. Heart pain. Shortness of breath, the mechanism of "cardiac dyspnea." Palpitations and a feeling of irregular heartbeat. Relationship with physical activity. Diagnostic value. Cough, hemoptysis. Edema. The importance of anamnesis for the diagnosis and prognosis of circulatory diseases. Inspection of the patient. General condition and position. Differences between central and peripheral cyanosis. Edema, mechanism of occurrence, localization. Examination of the neck, swelling and pulsation of veins. Causes and diagnostic significance. Examination of the cardiac area, cardiac hump, apical impulse. Diagnostic significance. Palpation of the apical and cardiac impulse, determination of systolic and diastolic thrill, epigastric pulsation, causes, diagnostic significance	All 16 Online 0	36 0	0 0

	Percussion. Method for determining the boundaries of relative and absolute cardiac dullness. Diagnostic significance of boundary changes. Auscultation. Cardiac auscultation techniques. Heart sounds and their basic properties. Heart rhythm. Heart murmurs: mechanism of occurrence, classification, differences, characteristics, and best listening locations. Diagnostic significance. Vascular examination, inspection and palpation, determination of pulsation, rhythm, and frequency. Blood pressure determination using the Korotkov method, methodology, and technique. Systolic, diastolic, and pulse blood pressure. Concepts of arterial hypertension and hypotension. 24-hour blood pressure monitoring, diagnostic significance Examination of veins, dilation, pain on palpation, varicose veins. Instrumental and laboratory methods for studying the circulatory system. General principles of laboratory diagnostics. The significance of hyperfermetemia, dyslipidemia, and dysproteinemia. Electrocardiography. Electrocardiography technique. ECG interpretation plan. Changes in cardiac electrical activity with atrial and ventricular myocardial hypertrophy. Cardiac arrhythmias. Extrasystole, paroxysmal tachycardia. The concept of cardiac defibrillation. Myocardial conduction disorders. ECG in ischemic heart disease (angina pectoris, myocardial infarction). General concepts of stress testing. 24-hour Holter ECG monitoring. Phonocardiography. Importance. Echocardiography, indications for the test. Diagnostic principles and diagnostic significance of detected changes. Radiation methods for cardiac examination. Angiography and coronary angiography. Radionuclide methods of examination. Main clinical syndromes in diseases of the circulatory system. Acute coronary insufficiency syndrome. Heart failure syndrome. Stages, clinical manifestations, diagnosis, emergency care. Organization and provision of medical care. Acute vascular insufficiency syndrome (syncope, collapse, shock), basic principles of emergency care. Arterial hypertension syndrome. Cardiac arrhythmia syndrome. Cardiomegaly syndrome (hypertrophy and dilation). Pulmonary hypertension syndrome. Chronic pulmonary heart disease syndrome. Fundamentals of specific pathologies of the circulatory system. Rheumatism. General understanding of etiology and pathogenesis, symptomatology. Rheumatic fever. Rheumatic endocarditis, myocarditis, pericarditis, polyarthritis, clinical presentation, diagnosis, and treatment principles. Infective endocarditis. Acquired heart defects. Myocarditis and myocardial dystrophy. General concepts. Atherosclerosis. Coronary heart disease, angina, and myocardial infarction.			

	Arterial hypertension.			
	6 Semester	26	60	0
1-8	**Methods of examination of the digestive and urinary organs**	13	30	0
1 - 8	**Methods of examination of the digestive and urinary organs**	All		
	Methods of examination of the digestive organs	13	30	0
	Patient interview. Main complaints. Pain. Mechanism of occurrence, characteristics, and location of pain, relationship with food intake, jaundice, pruritus. Dyspeptic symptoms: dysphagia, heartburn, belching, nausea, vomiting, bloating. Detailed characteristics, relationship with food intake. Mechanisms of occurrence and diagnostic significance. Appetite. Weight loss. Stool frequency and consistency. Signs of gastrointestinal bleeding from the esophagus, stomach, and intestines. Diagnostic significance. The importance of anamnesis for the diagnosis and prognosis of gastrointestinal diseases. Inspection of the patient. Oral cavity and tongue. Jaundice. Classification of jaundice. Liver palms. Gynecomastia. Examination of the abdomen with the patient in a vertical and horizontal position. Venous collaterals, hernias. Measurement of abdominal circumference. Skin condition – hemorrhages, telangiectasias, striae. Percussion. Determination of free and encapsulated fluid in the abdominal cavity. Method for determining ascites. Percussion of the boundaries of absolute liver dullness. Percussion of the spleen, determination of its size. Palpation. Method of superficial orienting palpation, condition of the skin and subcutaneous fat, detection of hernias and separation of the rectus abdominis muscles, determination of hypersensitive areas and tenderness upon palpation, identification of muscle guarding. Diagnostic significance of this symptom. Lower liver margin palpation technique. Symptoms of peritoneal irritation. Ortner-Grekov, Mussi-Georievsky, and Kerr symptoms. Palpation of the spleen. Technique. Diagnostic significance of spleen enlargement. Deep methodical sliding palpation of the abdomen, the procedure. Palpation data and their significance. Detection of gastric splash sounds. Auscultation. Listening to bowel sounds. Diagnostic significance. Laboratory and instrumental methods for examining the gastrointestinal tract. Laboratory methods for assessing liver function. Blood enzyme testing. Major biochemical syndromes of liver damage. Hyperbilirubinemia. X-ray examination of the stomach and intestines, gallbladder, and bile ducts. Endoscopic examination of the gastrointestinal tract. Laparoscopy. Ultrasound examination of the abdominal organs.Gastric secretion study. Duodenal intubation. Diagnostic value of secretion levels and pH of gastric contents. Esophageal and gastric pH monitoring. Impedance analysis. High-resolution esophageal manometry. General concepts, diagnostic significance.	Online		
		0	0	0

	Methods for detecting Helicobacter pylori. Diagnostic value. Coproscopic examination. Detection of occult blood in feces. Diagnostic value. Evaluation of the exocrine function of the pancreas. Liver biopsy. Main clinical syndromes. Dyspepsia syndrome. Esophageal damage syndrome. Stomach and duodenal damage syndrome. Small bowel damage syndrome (enteritis). Colonic damage syndrome (colitis). Acute abdomen syndrome. Gastrointestinal bleeding syndrome. Malabsorption and maldigestion syndrome. Jaundice syndrome. Portal hypertension syndrome. Hepatosplenic syndrome. Hepatocellular insufficiency syndrome. Biliary colic syndrome. Fundamentals of specific pathology of the digestive system. Gastritis. Gastric and duodenal ulcer disease. Stomach cancer. Enteritis. Colitis. Hepatitis, cirrhosis. Gallstones, cholecystitis. Pancreatitis. General understanding of etiology and pathogenesis. Basic treatment principles. Methods of examination of the kidneys and urinary tract. Patient interview. Main complaints and their pathogenesis. Pain, renal colic. Edema, location, extent. Oliguria, polyuria, anuria, nocturia, ischuria, pollakiuria, dysuria. Headaches, shortness of breath, decreased vision. Dyspeptic disorders, skin itching, bleeding. Inspection of the patient. Appearance of a patient with kidney disease. Characteristics of the distribution of edema and its differences from edema of other origins. Presence of scratches and urea crystals on the skin. Appearance of a patient with uremia. Eclamptic seizures. Swelling, bulging, and asymmetry in the lumbar region. Evaluation of urine appearance. Percussion. Definition of Pasternatsky's sign and its diagnostic significance. Percussion of the upper bladder border. Palpation. Palpation technique for the right and left kidneys. Kidney prolapse, displacement, enlargement, and tenderness. Examination of pain points characteristic of urinary tract diseases. Laboratory and instrumental methods for examining the urinary system. Urinalysis. Color, odor, clarity, density, microscopic examination of urinary sediment and its diagnostic value. Glucosuria, acetonuria, bilirubinuria, and urobilinuria, and their diagnostic value. Urine analysis according to Nechiporenko. Zimnitsky's test. Methodology. Interpretation of results and diagnostic value. Rehberg's test and its diagnostic value. Determination of urea, creatinine, nitrogen, and protein fractions in the blood. Diagnostic significance Radiological examination of the urinary tract. CT and MRI, angiography. Ultrasound of the kidneys and bladder. Radioisotope methods. General information and diagnostic value. Kidney biopsy. Main clinical syndromes. Renal colic syndrome. Nephrotic syndrome. Nephritic syndrome. Renal arterial hypertension			

	syndrome. Renal failure syndrome. Fundamentals of specific pathologies of the urinary system. Glomerulonephritis. Pyelonephritis. Urolithiasis. General understanding of etiology and pathogenesis. Basic principles of treatment.			
9-15	**Methods for examining the hematopoietic organs and endocrine system. Emergency conditions in internal medicine.**	13	30	0
9 - 15	**Methods for examining the hematopoietic organs and endocrine system. Emergency conditions in internal medicine.** Methods for examining the hematopoietic organs Interview. Main complaints: Sore throat, bone pain, pain in the hypochondrium, increasing unexplained general weakness, increased sweating. Bleeding. Nosebleeds, bleeding from the gums, gastrointestinal bleeding, and uterine bleeding. Fever. The importance of medical history in diagnosing blood diseases. Exposure to external factors (medications, chemicals, and physical factors). Inspection of the patient. Changes in skin and mucous membrane color, enlarged lymph nodes, bruising and petechiae, joint changes. Percussion. Tenderness when percussing the bones. Determination of the liver and spleen size. Palpation of the superficial lymph nodes, enlarged lymph nodes in the abdominal cavity. Palpation of the spleen and liver. Laboratory and instrumental methods for examining the blood system. Complete blood count. Diagnostic significance of changes (leukocytosis and leukopenia, changes in blood count, hemoglobin, and red blood cells). Introduction to the basic methods for determining the state of the coagulation and anticoagulation systems. Concepts of bone marrow aspiration and trephine biopsy. Their diagnostic value. Major clinical syndromes. Anemia syndrome. Myeloproliferative syndrome. Lymphoproliferative syndrome. Hemorrhagic syndrome. Fundamentals of specific blood pathology. Acute posthemorrhagic anemia. Chronic iron deficiency anemia. B12-folate deficiency anemia. Acute leukemia. Chronic myelogenous leukemia. Chronic lymphocytic leukemia. General concepts of etiology, pathogenesis, and treatment principles. Methods for examining the endocrine system and metabolism. Patient interview. Main complaints and their mechanisms. Weight loss, obesity, increased thirst, changes in appetite, fever, increased excitability. The importance of anamnesis for diagnosis and prognosis. Inspection of the patient. Appearance of a patient with thyrotoxicosis, myxedema, diabetes mellitus, Cushing's disease and syndrome, acromegaly, adrenal insufficiency, and obesity. Palpation of the thyroid gland. Laboratory and instrumental research methods. Determination	All 13 Online 0	30 0	0 0

	of glucose levels in blood and urine, glycemic profile. Concept of corticosteroid and catecholamine determination. Concept of basal metabolic rate. Determination of thyroid hormone levels. Ultrasound and radioisotope examination of the thyroid gland. Indications and contraindications. Key biochemical indicators of lipid and carbohydrate metabolism. Main clinical syndromes: Diabetic and hypoglycemic coma. Obesity and cachexia. Hyperthyroidism and hypothyroidism. Adrenal dysfunction. Fundamentals of specific endocrine pathology. Obesity. Diffuse toxic goiter. Diabetes mellitus. Basic concepts of etiology and pathogenesis, treatment principles. Emergency conditions in internal medicine. Emergencies in the Internal Medicine Clinic. Diagnosis and First Aid. Anaphylactic Shock, Sudden Death. Principles of Resuscitation. Patient Management. Writing Case History Excerpts. Reviewing Student Case Histories.			

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**
	5 Semester
1 - 8	**General topics of the course. Basic methods of clinical examination of patients. General concepts of laboratory and instrumental methods of patient examination. Methods of examination of the respirato** 1. Introduction. The subject and objectives of internal medicine propaedeutics. Outline of the medical history. The importance of the medical history as a scientific, medical, and legal document. Interviewing and general examination of the patient. The concept of "Diagnosis," types of diagnosis, complications, and their types. Disease outcome. Symptoms and syndromes. Interviewing patients with respiratory diseases. General inspection. Inspection and palpation of the chest. Diagnostic value for the main bronchopulmonary syndromes. 3. Percussion: physical principles of the method. Comparative and topographic percussion of the lungs. Diagnostic significance in the main bronchopulmonary syndromes. 4. Pulmonary auscultation: physical principles of the method. Primary and secondary breath sounds. Diagnostic significance in the main bronchopulmonary syndromes. 5. Symptomatology of acute pneumonia (focal and lobar). Diagnostic significance of

	radiological and bronchopulmonary examination in pulmonology. Computer and magnetic resonance imaging (general concepts). 6. Symptomatology of acute and chronic bronchitis. Bronchial tuberculosis. Lung abscess. Lung cancer. 7. Symptomatology of bronchial asthma. Pulmonary emphysema. Concept of respiratory failure. Spiropractic analysis, diagnosis of obstructive and restrictive respiratory failure. 8. Symptoms of pleurisy (dry and exudative). Hydrothorax. Pneumothorax. 9. Clinical laboratory: general blood test, sputum analysis, pleural effusion analysis.
9 - 16	**Methods of examination of the circulatory system** 1. Interview and examination of patients with circulatory diseases. Palpation of the heart. Percussion of the heart. Diagnostic significance for the main pathological syndromes. 2. Cardiac auscultation: heart sounds and murmurs. Arterial pulse examination. Blood pressure measurement. Diagnosis of major pathological syndromes. Concept of 24-hour blood pressure monitoring. 3. Electrocardiographic examination. ECG interpretation plan. Electrocardiographic diagnostics of simple rhythm and conduction disorders. The concept of 24-hour Holter monitoring. ECG signs of ventricular and atrial myocardial hypertrophy. ECG signs of acute myocardial infarction. Functional stress tests (general overview). 4. Functional methods of studying the circulatory system: phonocardiography, echocardiography, X-ray, radionuclide and other methods (general concepts) 5. The concept of rheumatism. Symptomatology of mitral valve defects: stenosis of the left atrioventricular orifice and mitral valve insufficiency. Tricuspid valve insufficiency. The importance of echocardiography and phonocardiography for diagnosis. 6. Symptomatology of aortic heart defects: aortic stenosis and aortic valve insufficiency. The importance of echocardiography and phonocardiography for diagnosis. 7. The concept of atherosclerosis and its manifestations. Coronary heart disease: angina pectoris, myocardial infarction. Arterial hypertension. Laboratory and instrumental diagnostics. 8. Circulatory failure (acute and chronic). Emergency care for acute left ventricular heart failure. The concept of cor pulmonale. Acute vascular insufficiency: diagnosis and emergency care.
	6 Semester
1 - 8	**Methods of examination of the digestive and urinary organs** 1. Interviewing patients with gastrointestinal diseases. Abdominal percussion. Methods for determining ascites. 2. Abdominal palpation (superficial orienting and methodical deep sliding topographic according to V.P. Obraztsov, N.D. Strazhesko and V.Kh. Vasilenko). Syndrome of damage to the esophagus, stomach, intestines, acute abdomen syndrome. 3. Interview and examination of patients with liver and biliary tract diseases. Percussion and palpation of the liver and spleen. 4. Modern laboratory and instrumental methods for examining the digestive organs. Examination of gastric and duodenal contents, stool analysis. General concepts of endoscopic, ultrasound, radiographic, and other instrumental methods of examination (pH-metry, impedancemetry, high-resolution esophageal manometry). 5. Symptomatology of acid-related diseases: gastritis, gastric ulcer and duodenal ulcer, gastroesophageal reflux disease. Stomach cancer. Enteritis. Colitis. Laboratory and instrumental diagnostics. 6. Symptoms of cholecystitis. Gallstone disease. Pancreatitis. Laboratory and instrumental diagnostics. 7. Symptoms of hepatitis and liver cirrhosis. Jaundice syndrome. Portal hypertension. Liver failure. Laboratory and instrumental diagnostics. 8. Interviewing and examination of patients with diseases of the urinary system. Percussion

	and palpation of the kidneys and bladder. 9. Clinical laboratory: urinalysis. Biochemical blood analysis for pathological syndromes. General understanding of radiological and ultrasound methods for examining the kidneys and urinary tract. 10. Symptomatology of glomerulonephritis (acute and chronic). Nephrotic and nephritic syndrome. Chronic pyelonephritis. Chronic renal failure.
9 - 15	**Methods for examining the hematopoietic organs and endocrine system. Emergency conditions in internal medicine.** Interviewing and examining patients with hematopoietic diseases. Diagnostic value of a clinical blood test. General information on sternal puncture, trephine biopsy, and interpretation of results. General information on a coagulogram. 2. Symptomatology of anemia 3. Symptomatology of leukemia. Hemorrhagic syndrome. 4. Symptomatology of certain endocrine and metabolic diseases. Diabetes mellitus. Diffuse toxic goiter, thyroiditis. General concepts of adrenal insufficiency, hypo- and hypervitaminosis. 5. Emergencies in Internal Medicine. Diagnosis and First Aid. Anaphylactic Shock and Sudden Death. Principles of Resuscitation. Examination of Patients with Allergies and Diseases of the Musculoskeletal System and Joints. 6. Patient Management. Writing a Student Case Report 7. Analysis of student case histories. Final assessment of mastery of practical skills in all methods of internal organ examination.

6. EDUCATIONAL TECHNOLOGIES

The following educational technologies, methods, and approaches to developing competencies are used in teaching the course:

master class (on basic methods of patient examination);

small group method;

clinical case analysis;

Practicing practical skills, including in simulated conditions;

patient management and writing case histories;

preparing supervision and presenting case histories;

Elements included in the student's independent work:

preparation for clinical practical classes and midterm assessment;

patient supervision and writing a case history;

working with additional literature and online resources

Clinical practical classes are conducted in medical organizations (clinicals, 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)**
ОПК-1	З-ОПК-1	GP, T-8, T-15, T-8, T-	Ex, T-8, T-15, T-8, T-

		15	15
	У-ОПК-1	GP, T-8, T-15	T-8, T-15
	В-ОПК-1	GP, T-8, T-15	T-8, T-15
ОПК-4	З-ОПК-4	GP, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	У-ОПК-4	GP, T-8, T-15	Ex, T-8, T-15
	В-ОПК-4	GP, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
ОПК-5	З-ОПК-5	GP, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	У-ОПК-5	GP, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	В-ОПК-5	GP, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
ПК-3.2	З-ПК-3.2	GP, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	У-ПК-3.2	GP, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	В-ПК-3.2	GP, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
ПК-3.3	З-ПК-3.3	GP, T-8, T-15, T-8, T-15	Ex, T-8, T-15, T-8, T-15
	У-ПК-3.3	GP, T-8, T-15	Ex, T-8, T-15
	В-ПК-3.3	GP, T-8, T-15	Ex, 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 – *«excellent»*	*«pass»*	A
85-89	4 – «*good*»		B
75-84			C
70-74			D
65-69	3 – «*satisfactory*»		
60-64			E
below 60	2 – «*fail*»	*«fail»*	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 И 24 Internal diseases propedeutics : Рекомендовано УМО по медицинскому и фармацевтическому образованию вузов России в качестве учебного пособия для студентов медицинских вузов, обучающихся на английском языке, Ивашкин В.Т., Охлобыстин А.В., Москва: ГЭОТАР-Медиа, 2020

2. ЭИ И 24 Internal diseases propedeutics : Рекомендовано УМО по медицинскому и фармацевтическому образованию вузов России в качестве учебного пособия для студентов медицинских вузов, обучающихся на английском языке, Ивашкин В.Т., Охлобыстин А.В., Москва: ГЭОТАР-Медиа, 2019

3. ЭИ И24 Пропедевтика внутренних болезней : учебник, Ивашкин В. Т., Москва: ГЭОТАР-Медиа, 2023

FURTHER READING:

1. ЭИ М92 Пропедевтика внутренних болезней : учебник, Мухин Н.А., Моисеев В.С., Москва: ГЭОТАР-Медиа, 2023

2. ЭИ П81 Пропедевтика внутренних болезней в рисунках, таблицах и схемах : учебное пособие, Шуленин С.Н., Куликов А.Н., Москва: ГЭОТАР-Медиа, 2021

3. ЭИ П81 Пропедевтика внутренних болезней: правила сбора анамнеза : учебное пособие, Ослопов В.Н. [и др.], Москва: ГЭОТАР-Медиа, 2024

4. ЭИ С87 Спирометрия : руководство для врачей : практическое руководство, Стручков П.В., Дроздов Д.В., Лукина О.Ф., Москва: ГЭОТАР-Медиа, 2024

5. ЭИ Я79 Электрокардиография. Практическое руководство-справочник для врачей : практическое руководство, Ярцев С.С., Москва: ГЭОТАР-Медиа, 2023

SOFTWARE:

No special softwares is required

LMS AND ONLINE RESOURCES

https://online.mephi.ru/

http://library.mephi.ru/

9. LOGISTICAL SUPPORT

1. Тонометр для измерения артериального давления механический (64-302)

2. Стетоскоп (64-302)

3. Весы напольные с ростомером медицинские Твес ВМЭН-200С-50/100-СТ (64-301)

4. Кушетка смотровая КМС-01 (64-301)

5. Тренажер аускультации сердца и легких Р1060 ФОМА (64-301)

6. Манекен-симулятор для отработки навыков пальпации живота (с контроллером) Z980A (64-301)

7. Электрокардиограф ЭК12Т-01-Р-Д/141 (64-301)

8. Спирограф СМП21-01РД (64-301)

9. Персональный компьютер: Процессор CPU Intel Core i7-8700 (3.2GHz/12MB/6 cores) Материнская плата Gig (Клиническая база)

10. Мышь, клавиатура (Клиническая база)

11. Проектор SMART P109 (Клиническая база)

12. Кушетка медицинская (Клиническая база)

13. Монитор (Клиническая база)

14. Термометры бесконтактные, термометры аналоговые (64-301)

15. Иное оснащение, предусмотренное порядками оказания медицинской помощи по соответствующему профилю (Клиническая база)

16. Манекен сердечно-легочной реанимации Р4201CPR ВОЛОДЯ. Модификация 1 (64-301)

17. Учебный автоматический наружный дефибриллятор МУ0353 (64-301)

18. Аппарат холетеровского мониторирования ЭКГ (64-301)

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

10. EDUCATIONAL AND METHODOLOGICAL RECOMMENDATIONS FOR STUDENTS

Clinical practical classes in this discipline are held in hospitals.

During the first class, the instructor introduces the students, explains hospital etiquette, safety regulations, and fire safety, and introduces them to the point-rating system for assessing knowledge and how to apply it.

When preparing for classes, you should study the theoretical material, answer quizzes and tests, and solve situational tasks. If you have difficulty choosing the correct answer, you should return to the theoretical material again and find the correct answer.

Structure of the practical sessions:

1. Resolving organizational issues, checking attendance.

2. Introductory remarks by the instructor, explaining the relevance, content of the topic, and its significance for further practical work.

3. Monitoring students' initial knowledge levels to determine their readiness for the lesson. For this purpose, a survey of all those present is conducted.

The teacher answers questions and explains difficult points.

4. Demonstration of objective research methods by the instructor (practical skills).

5. Independent work by students to learn how to properly conduct interviews and objective examinations of patients.

6. Work in groups of 3-4 people in wards. Students independently conduct patient examinations (patient interviews, physical examinations).

7. Discuss the results of the independent work with the instructor.

8. Final control, which is carried out in the form of solving situational problems, interpreting additional methods of examining the patient, and assessing practical skills.

Tables, diagrams, analyses, X-rays, and electrocardiograms are used as demonstration material during practical classes; various training and control programs are demonstrated; classes are held in simulated conditions.

The student completes the study of the discipline by writing a medical history.

Required practical skills

1. Patient interview, collecting anamnesis
2. General inspection
3. Inspection of the chest
4. Palpation of the chest
5. Comparative percussion of the lungs
6. Topographic percussion of the lungs
7. Auscultation of the lungs
8. Inspection of the cardiac area
9. Palpation of the heart
10. Percussion of relative and absolute cardiac dullness
11. Cardiac auscultation

12. Examination of veins and arteries
13. Examination of arterial pulse
14. Determining blood pressure using the Korotkoff method
15. Inspection of the oral cavity and abdomen
16. Abdominal percussion
17. Superficial orienting palpation
18. Methodical deep sliding palpation
19. Abdominal auscultation
20. Inspection of the liver and spleen area
21. Percussion of the liver and gallbladder area
22. Palpation of the liver and gallbladder
23. Percussion of the spleen
24. Palpation of the spleen
25. Examination of the lumbar and suprapubic regions
26. Percussion of the kidneys and bladder
27. Palpation of the kidneys, bladder, and ureteral points
28. Palpation of the thyroid gland
29. Reading and interpreting spirography results
30. Reading and interpreting sputum analysis
31. Reading and interpreting pleural fluid analysis
32. Reading and interpreting gastric secretion test results
33. Reading and interpreting a stool analysis
34. Reading and interpreting a general blood test
35. Reading and interpreting a urine analysis (general, according to Nechiporenko, according to Zimnitsky)
36. Anthropometric research. Thermometry, recording and interpretation of temperature curves.
37. 12-lead ECG recording technique.
38. ECG interpretation. Interpretation of detected changes.

11. EDUCATIONAL AND METHODOLOGICAL RECOMMENDATIONS FOR TEACHERS

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 as fragments of the patient's medical history, and reports the results to the instructor. Achievements are assessed individually for each student, based on the degree of development of practical skills and their theoretical foundations.

Clinical case studies on specific patients are conducted for the entire group or through students' participation in clinical case studies and periodic scientific and practical conferences at the hospitals 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.

Grading and criteria for tests, extended response assignments, homework, and final exams:

1) - Tests are graded on a scale of 1 point per correct answer. If a student did not attempt the test, they receive (-1) point.

2) - Extended response tests are graded according to the following scheme: complete answer – 2 points, incomplete answer – 1 point, no answer – 0 points, student did not attempt the test – (-2) points.

3) – Homework must be completed by all students in order to be admitted to the final assessment. Late work will result in a deduction from the final score (-1) point.

4) - Criteria for evaluating the presentation report. Conversion from a 100-point to a 10 (5)-point system

5) - Criteria for evaluating the abstract. Maximum 10 points. May be converted to a 5-point system

10 points are awarded if all the requirements for writing an essay are met: the problem is identified and its relevance is justified, a brief analysis of the problem under consideration is made and one's own position is logically presented, conclusions are formulated, the article is analyzed in full, the volume is maintained, and the formatting requirements are met.

9 points are awarded if the following requirements for writing an abstract are met: the problem is identified and its relevance is justified, a brief analysis of the problem under consideration is provided, and the author's position is logically presented, conclusions are formulated, the article is analyzed in full, but the length is not maintained and the formatting requirements are not met.

8 points – the basic requirements for the abstract have been met, but there are some shortcomings. In particular, there are inaccuracies in the presentation of the material; there is a lack of logical consistency in the arguments; the abstract does not meet the required length; there are omissions in the formatting.

7 points – the main requirements for the abstract have been met, but the following shortcomings have been made: there are inaccuracies in the presentation of the material; there is no logical sequence in the arguments; conclusions have not been formulated, the volume of the abstract has not been maintained; there are omissions in the formatting.

6 points – there are significant deviations from the requirements for referencing; the topic is only partially covered; there are factual errors in the content of the abstract, there are no conclusions or personal opinion on the issue.

5 points – there are significant deviations from the requirements for the abstract: the topic is only partially covered; there are factual errors in the presentation of materials and methods, there are no conclusions or personal opinion on the issue, the format is not adhered to.

4 points – there are significant deviations from the requirements for the abstract: the relevance of the topic is not revealed; there are factual errors in the presentation of materials and methods, there are no conclusions or personal views on the issue, and the format is not adhered to.

3 points – there is no analysis of the relevance of the research topic, approaches, and methods used, while the length of the abstract is formally adhered to.

2 points – the topic of the abstract is not revealed, there is a significant misunderstanding of the problem. At the same time, the volume of the abstract and formal requirements are met.

1 point – the topic of the abstract is not revealed, there is a significant misunderstanding of the problem.

0 points – the abstract has not been submitted by the student.

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