

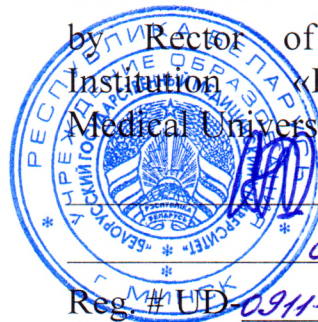
**MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS**  
Educational Institution  
«BELARUSIAN STATE MEDICAL UNIVERSITY»

**Контрольный  
экземпляр**

**APPROVED**

by Rector of the Educational  
Institution «Belarusian State  
Medical University»

S.P.Rubnikovich



01.12.2025

Reg. # UD-0911-03-29/25.26/edu.

**INTERNAL DISEASES**

**Curriculum of the educational institution  
in the academic discipline for the specialty**

**7-07-0911-03 «Dentistry»**

Curriculum is based on the educational program «Internal Diseases», approved 01.12.2025, registration # УД-0911-03-29/2526/уч.; on the educational plan in the specialty 7-07-0911-03 «Dentistry», approved 16.04.2025, registration # 7-07-0911-03/2526/mf.

**COMPILERS:**

E.A.Dotsenko, Head of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University», D.Sc., Professor;

I.I.Burakov, Professor of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University», D.Sc., Professor;

M.V.Sholkova, Associate Professor of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor;

G.M.Khvashchevskaya, Associate Professor of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor;

T.P.Novikova, Associate Professor of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University», PhD;

E.I.Sasinovich, Senior Lecturer of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University»

**RECOMMENDED FOR APPROVAL:**

by the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University»  
(protocol # 3 of 30.09.2025);

by the Scientific and Methodological Council of the Educational Institution «Belarusian State Medical University»  
(protocol # 3 of 19.11.2025)

## EXPLANATORY NOTE

«Internal Diseases» – the academic discipline of the module «General Clinical Therapy Module # 1», which contains systematized scientific knowledge about the methods of patient's examination, clinical diagnosis, principles of treatment and prevention of diseases of internal organs.

The aim of the academic discipline «Internal Diseases» is the formation of basic professional competencies for the patient's examination, medical prevention of main internal disease and providing medical care in emergency conditions.

The objectives of the academic discipline «Internal Diseases» are to form students' scientific knowledge about the causes, mechanisms of development, risk factors and the most important clinical manifestations of typical diseases of internal organs, methods of examining patients; skills and abilities necessary for:

- the patient's examination;
- interpretation of the results of laboratory and instrumental investigations;
- structure of clinical diagnosis;
- planning diagnostics, treatment and prevention of main diseases of internal organs;
- providing medical care in life-threatening conditions.

### **Relations to other educational disciplines**

The knowledge, skills and abilities acquired during the study of the academic discipline «Internal Diseases» are necessary for successful mastering of the academic disciplines «Radiodiagnosis and Radiotherapy», «Disaster Medicine», «Pediatrics».

Studying the academic discipline «Internal Diseases» should ensure the formation of students' basic professional competency: use knowledge about the etiology and pathogenesis, clinical manifestations, complications, methods of diagnosis and differential diagnosis, apply the principles of treatment and prevention in diseases and injuries in adults and children, provide medical care in emergency conditions.

**As a result of studying the academic discipline «Internal Diseases» the student should**

### **know:**

- etiology, pathogenesis, classification, clinical picture, diagnostic methods, principles of treatment and prevention of the most common diseases of internal organs;
- diagnostic methods, emergency medical care and medical tactics in case of life-threatening conditions;
- rules of medical ethics and deontology;

### **be able to:**

- plan and conduct communicative interaction with the patient based on the assessment of his mental and personal characteristics, individual reaction to the disease;
- conduct a clinical examination of a patient with diseases of internal organs;
- create a plan for laboratory and instrumental patient's examination;
- interpret the results of the patient's examination;
- provide medical care in case of life-threatening conditions;

**master:**

the methods of physical examination of the patient;  
methodology of the formulation of the clinical diagnosis.

**Total number** of hours for the study of the discipline is 120 academic hours, of which 66 classroom hours and 54 hours of student independent work. Classroom hours according to the types of studies: lectures – 12 hours (including 3 hours of supervised student independent work (SSIW)), practical classes - 54 hours.

Form of higher education – full-time.

Intermediate assessment is carried out according to the syllabus of the specialty in the form of examination (6 semester).

### ALLOCATION OF ACADEMIC TIME ACCORDING TO SEMESTERS OF STUDY

Code, name of the specialty	Semester	Total number of academic hours	Number of classroom hours			Out-of-class self-studies	Form of intermediate assessment	
			Number of classroom hours	including				
				class lectures	SSIW			practicals
7-07-0911-03 «Dentistry»	6	120	66	9	3	54	54	Exam

## THEMATIC PLAN

Section (topic) name	Number of class hours	
	lectures (incl. SSIW)	practical
<b>1. General plan of patient's examination. Basic and additional methods of patient's examination. Medical ethics and deontology</b>	<b>1,5</b>	<b>3</b>
<b>2. Methods of clinical examination of patients with internal diseases</b>	-	<b>12</b>
2.1. Examination methods of patients with respiratory diseases	-	3
2.2. Examination methods of patients with cardiovascular diseases	-	3
2.3. Examination methods of patients with digestive diseases	-	3
2.4. Examination methods of patients with urinary, endocrine, hematological diseases	-	3
<b>3. Respiratory diseases</b>	<b>1,5</b>	<b>6</b>
3.1. Pneumonia. Pleurisy. Bronchial asthma. Chronic obstructive pulmonary disease	1,5	3
3.2. Emergency conditions in pulmonology		3
<b>4. Cardiovascular diseases</b>	<b>1,5</b>	<b>12</b>
4.1. Arterial hypertension. Atherosclerosis. Coronary heart disease. Angina pectoris. Myocardial infarction	1,5	3
4.2. Chronic rheumatic heart disease. Infectious endocarditis. Mitral and aortic heart diseases		3
4.3. Acute and chronic heart failure. Heart arrhythmias and conduction disorders	-	3
4.4. Cardiovascular emergencies. Cardiopulmonary resuscitation	-	3
<b>5. Diseases of the digestive system</b>	<b>1,5</b>	<b>6</b>
5.1. Stomach ulcer, duodenal ulcer. Gastritis. Hepatitis. Cirrhosis of the liver	1,5	3
5.2. Emergency conditions in gastroenterology		3
<b>6. Diseases of the kidneys and urinary tract. Pyelonephritis. Glomerulonephritis. Kidney stones. Acute and chronic renal failure</b>	<b>1,5</b>	<b>3</b>
<b>7. Diseases of the musculoskeletal system and connective tissue. Acute allergic reaction</b>	<b>1,5</b>	<b>3</b>
<b>8. Hematological diseases. Anemia. Leukemia. Coagulopathy</b>	<b>1,5</b>	<b>3</b>
<b>9. Endocrine system diseases. Diabetes mellitus. Thyroid diseases</b>	<b>1,5</b>	<b>3</b>
<b>10. Internal diseases proceeding in typical forms</b>	-	<b>3</b>
<b>Total hours</b>	<b>12</b>	<b>54</b>

## CONTENT OF THE EDUCATIONAL DISCIPLINE

### **1. General plan of patient's examination. Basic and additional methods of patient's examination. Medical ethics and deontology**

Interview. The importance of interview for diagnosis of diseases. Psychotherapeutic influence of the doctor on the patient. Principles of medical ethics. Deontological rules for doctors. Principles of epidemiological safety in medical care.

The scheme of interview: passport information, patient symptoms (complaints) on admission (main and additional), the present history (history of disease), the past history (patient's life history: physical and intellectual development, material and living conditions; occupational, hereditary and allergic anamnesis).

Visual examination. The importance of visual examination for the diagnosis of diseases. General rules and inspection techniques.

General inspection. The general condition of the patient. Consciousness, types of its violation. The patient's position in bed (active, passive, forced). Body type. The concept of the constitutional type. Body temperature, types of temperature curves. Skin and visible mucous membranes. Discoloration of the skin. Pigmentation and depigmentation. Scars, rashes, hemorrhages, combs. Trophic changes: ulcers, bedsores, skin turgor. Development and distribution of subcutaneous fat. Edema, their localization, prevalence and severity. Methods of examination of lymph nodes. Diagnostic significance of changes detected during examination of lymph nodes. Muscles: degree of development, tone, strength. Bones: shape, deformity, pain. Joints: shape, mobility.

Palpation. Physics' basis of the palpation method. General rules and techniques of palpation.

Percussion. Physics' basis of percussion. General rules and techniques of percussion. Types of percussion.

Auscultation. Physics' basis of the auscultation method. General rules and techniques of auscultation.

Additional methods of patient's examination.

Laboratory examination methods, their significance in diseases of internal organs. Complete blood count, biochemical blood analysis, urinalysis. A general idea of the diagnostic value of histological and cytological examination, biopsy of human organs, their role in the diagnosis of diseases of internal organs.

Instrumental diagnostic methods.

X-ray examination. The importance of X-ray examination in the diagnosis of diseases of internal organs. Endoscopic examination methods. Ultrasound methods, their significance for the diagnosis of diseases of internal organs. Radioisotope methods. Methods of functional diagnostics: electrocardiography (ECG), spirometry.

Principles of epidemiological safety of medical care.

Examination of patients with diseases of internal organs: interview, general inspection, palpation, percussion, auscultation. Plan of patient's laboratory and instrumental investigation, result interpretation. Making a diagnosis. Medical documentation fulfillment.

## **2. Methods of clinical examination of patients with internal diseases**

### **2.1. Examination methods of patients with respiratory diseases**

*Interview.* The main symptoms (complaints) and their pathogenesis: dry cough, cough with sputum, persistent cough or paroxysmal cough, cough intensity; conditions for the appearance of cough and its relief. Sputum characteristics: color, consistency, amount, odor; position of the patient, contributing to the best sputum evacuation. Hemoptysis, pulmonary bleeding: differences between pulmonary bleeding and nasopharyngeal bleeding, esophageal and gastric bleeding.

Chest pain: localization, type, possible connection with breathing or coughing. Dyspnea, attacks of suffocation (inspiratory, expiratory, mixed dyspnea): mechanism of formation, diagnostic value.

Fever, sweating, chills. Voice change (hoarseness, aphonia), diagnostic value. Disorders of nasal breathing, diagnostic value.

*Inspection.* Forced position of the patient in case of asthma attack, pleural lesion, abscess, etc. Central cyanosis: mechanisms of formation. Nail clubbing (digital clubbing).

Chest shape: normosthenic (mesomorph), hypersthenic (endomorph), asthenic (ectomorph); pathological shapes: barrel chest (emphysematous), pigeon chest (pectus carinatum), funnel chest (pectus excavatum), asymmetric chest. Supra- and subclavian fossae, size of epigastric angle, position of the shoulder joints and clavicles. Chest symmetry (increase or decrease of one of the halves, local protrusion or sinking). Spine curvature (kyphosis, lordosis, scoliosis, kyphoscoliosis), diagnostic value. Chest circumference, chest excursion on inhalation and exhalation, diagnostic value of deviations from the normal chest x-ray.

Breathing: type of breathing (thoracic, abdominal, mixed), symmetry of respiratory movements (lagging of one half in breathing), participation of auxiliary muscles in breathing, number of breaths per minute, depth of breathing (shallow, deep, Kussmaul breathing), breathing rhythm (rhythmic, arrhythmic, including Cheyne-Stokes respiration, Biot's respiration), objective signs of difficulty in inhaling and exhaling (inspiratory, expiratory and mixed dyspnea).

*Palpation.* Chest palpation technique. Identification of painful areas, their localization. Determination of resistance (elasticity) of the chest and pain points. The evaluation of vocal fremitus in symmetrical areas. Diagnostic value of chest palpation. Palpatory perception of chest vibrations in dry pleurisy.

*Percussion.* Comparative percussion, rules and technique. Percussion sounds in symmetrical chest areas normally and in case of pathology (clear resonant sound, dull, flatness, tympanic, hyper-resonant). Diagnostic value of comparative lung percussion.

*Auscultation.* Technique of lung auscultation. The concept of normal and pathological (adventitious) respiratory sounds, mechanism of their formation and diagnostic value. Characteristics of respiratory sounds normally and in case of pathology, diagnostic value.

Rales: mechanism of formation. Dry and wet rales. Localization and number of rales. The effect of coughing and deep breathing on the appearance and disappearance of rales. Crepitation. Pleural friction rub sound. Diagnostic value of

pathological respiratory sounds.

Bronchophony: method of evaluation, diagnostic value in case of lung and pleura diseases.

*Laboratory and instrumental examination methods*

Concept of laboratory and instrumental examination methods in case of respiratory diseases: sputum and pleural fluid tests, concept of lung radiography, spirometry, bronchoscopy.

Examination of patients with respiratory diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

**2.2. Examination methods of patients with cardiovascular diseases**

*Interview.* The main symptoms and their pathogenesis: pain in the chest, mechanism of pain formation, type of pain sensation, pain localization, radiation, duration, intensity, relation to emotions, physical activity, night pain, methods of relief.

Dyspnea. Mechanism of cardiac dyspnea. Relation to physical activity and body position. Cardiac asthma, time and conditions of formation, duration, treatment.

Palpitation, irregular heart beat: type of arrhythmia (permanent, paroxysmal), duration, frequency, conditions for start and end of arrhythmia. A feeling of pulsation in various parts of the body. Diagnostic value of heartbeat changes.

Cough, hemoptysis: character, mechanism of formation, diagnostic value.

Edema: the mechanism of formation, diagnostic value.

Headache, dizziness, vision disturbance: the mechanism of formation, diagnostic value.

*Inspection.* Patient's position. Skin color: erythema, pallor, cyanosis. Differences between central and peripheral cyanosis. Edema, localization, prevalence, severity (pasty, moderate or pronounced edema). Accumulation of fluid in body cavities. Diagnostic value of edema. Neck inspection: swelling and pulsation of veins. The difference between venous and arterial pulsation in the neck. Causes for pulsation in the neck area, diagnostic value. Inspection of the heart area: cardiac hump. Cardiac pulsation. Apical impulse. Epigastric pulsation. Pathological pulsation in the heart area, diagnostic value.

*Palpation.* Palpation of the apical impulse. Characteristics of the apical impulse: localization, area, strength, height, resistance. Palpation of systolic and diastolic tremors in the heart area. Diagnostic value of palpation of the heart area.

*Percussion.* Method of relative heart dullness borders estimation, vessel bundle percussion. Diagnostic value of relative heart dullness border changes.

*Auscultation.* Technique of auscultation of the heart. Heart auscultation on inspiration and expiration, at different patient's positions, at rest and in physical exertion. Heart sounds. Concept of heart sounds, mechanism of formation. The main sounds (1st and 2nd) and additional (3rd and 4th sounds, mitral valve opening sound, systolic click). Main characteristics of heart sounds: strength, timbre. Heart sounds changes in pathology: weakening, strengthening, splitting, additional sounds. «Quail» rhythm, «gallop» rhythm, «pendular» rhythm, embryocardia. Tachycardia,

bradycardia, arrhythmia.

Heart murmurs: mechanism of formation, classification. The difference between organic and functional heart murmurs. Systolic and diastolic heart murmurs. Places of the best listening heart murmurs, ways of conducting heart murmurs. Pericardial friction rub sound. Diagnostic value of cardiac murmurs.

Vascular examination. Inspection and palpation of the temporal, carotid, radial, popliteal arteries and dorsalis pedis arteries: pulsation, elasticity, tortuosity of the arteries, presence of nodules. Examination of veins. Dilation of the veins of the chest, abdominal wall, limbs. Thickening and pain of the veins. Instrumental methods of vascular examination (ultrasound, angiography), the importance of these methods for the diagnosis of vascular diseases.

Examination of arterial pulse on radial arteries, comparison of pulse on both hands. Pulse rate, rhythm (presence of arrhythmia and pulse deficit).

Blood pressure (BP) measurement by Korotkov method: measurement technique. Systolic, diastolic, mean blood pressure, pulse blood pressure. Concept of arterial hypertension and hypotension.

*Laboratory and instrumental examination methods.* Diagnostic value of total cholesterol and lipoproteins level, total protein and proteinogram, electrolytes and other parameters of biochemical blood analysis.

Electrocardiography (method of registration, interpretation). Analysis of a normal electrocardiogram. X-ray examination of the heart (heart configuration), diagnostic value.

Examination of patients with cardiovascular diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination plan, result interpretation. Diagnosis. Medical documentation fulfillment.

### **2.3. Examination methods of patients with digestive diseases**

*Interview.* The main symptoms and their pathogenesis: pain, mechanism of formation, localization, radiation, relation with food intake, meal quality and type. Characteristics of pain: type, intensity, time of the day, seasonality, duration, relief of pain.

Dyspeptic phenomena: dysphagia, odynophagia, nausea, vomiting, belching, heartburn, bloating (flatulence), relation with food intake, meal quality and type, methods of relieving dyspeptic phenomena. Appetite: decrease, increase (polyphagia), absence (anorexia). Aversion to food. Weight loss. Dry mouth, bitter taste in mouth. Unpleasant taste, lack of taste. Drooling. Diagnostic value of changes in dyspeptic phenomena.

Stool: frequency, volume of bowel movements, color, shape, consistency, presence of impurities, blood, mucus. Causes, diagnostic value of various types of diarrhea. Constipation: mechanisms, diagnostic value.

Signs of esophageal, gastric, intestinal bleeding.

*Inspection.* Inspection of the oral cavity, pharynx, tonsils, posterior pharyngeal wall, condition of the oral mucosa, teeth. Inspection of the tongue: humidity, color, papillary layer, types of coated tongue.

Inspection of the abdomen in the vertical and horizontal patient's position.

Abdominal regions. Abdomen shape, movement of the abdominal wall during breathing. Development of venous collaterals on the anterior abdominal wall («caput Medusae») and side walls. Hernias. Measurement of the abdomen circumference.

*Percussion.* Abdomen percussion. Percussion sound. Detection of free and encapsulated fluid in the abdominal cavity. Method of evaluation of ascites in vertical and horizontal patient's position.

*Palpation.* Technique of superficial palpation of the abdomen. Condition of skin and subcutaneous tissue of the abdomen. Detection of hernias and divergences of the muscles of the anterior abdominal wall. Detection of painful places of the abdomen during palpation. Detection of muscle defense, diagnostic value.

*Laboratory and instrumental examination methods.* Diagnostic value of bilirubin level, alanine aminotransferase, aspartate aminotransferase, lactate dehydrogenase, amylase. The concept of pH-metric method.

Esophagogastroduodenoscopy, colonoscopy, rectoscopy, ultrasound examination of abdominal organs.

Examination of patients with digestive diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

#### **2.4. Examination methods of patients with urinary, endocrine, hematological diseases**

Methods of examination of patients with kidney and urinary tract diseases.

*Interview.* The main symptoms and their pathogenesis. The mechanism of edema. The difference between renal edema and edema in patients with cardiovascular diseases. Dysuria, oliguria, polyuria, nocturia, pollakiuria, urine discoloration.

Headaches, shortness of breath, visual disturbances, dyspeptic phenomena, itching, bleeding, pain, renal colic.

*Inspection.* Visual examination of a patient with kidney disease. Features of edema, difference between renal edema and other types of edema. Skin scratches, urea crystals on the skin. Visual examination of a patient in case of uremia. Swelling, bulging, asymmetry in the lumbar region. Evaluation of urine.

*Palpation.* The technique of palpation of the right and left kidneys. Nephroptosis, kidney displacement, kidney enlargement and pain. Examination of pain at the urethral points.

*Percussion.* Assessment of kidney tenderness symptom, diagnostic value.

*Laboratory tests.* Urinalysis. Nechiporenko's urine test. Zimnitsky's urine test. Diagnostic value of urea, creatinine, electrolytes (potassium, sodium, calcium), cholesterol, total protein and its fractions in blood serum in kidney disease.

*Instrumental examination methods.* Ultrasound examination of the kidneys. Concept of X-ray kidney examination. Plain X-ray of the kidney. Intravenous and retrograde pyelography. Renal angiography. Concept of cystoscopy, catheterization of the bladder and ureters, chromocystoscopy, kidney scanning, nuclear renal scan, kidney biopsy.

Examination methods of patients with diseases of the endocrine system.

*Interview.* The main symptoms and their pathogenesis in case of endocrine

diseases. Dry mouth, thirst, polyuria, increased appetite, itching, muscle weakness, diarrhea or constipation, palpitations, fatigue, weight loss, fever.

*Inspection.* Inspection of patients with endocrine diseases: skin changes, facial expression, eye symptoms, goiter. Weight loss, obesity, body mass index calculation.

*Palpation.* Palpation of the thyroid gland.

Laboratory and instrumental methods of examination of patients with endocrine diseases.

Examination methods of patients with hematological diseases.

*Interview.* The main symptoms and their pathogenesis in hematological diseases. Sore throat, bones, bleeding, fever.

*Inspection.* Appearance of a patient with hematological diseases. Discoloration of skin and mucous membranes, enlargement of subcutaneous lymph nodes, bruising, petechiae.

*Palpation.* Technique of peripheral lymph nodes palpation.

*Laboratory and instrumental examination methods* of patients with hematological diseases.

Examination of patients with urinary system diseases, endocrine diseases, hematological diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

### **3. Respiratory diseases**

#### **3.1. Pneumonia. Pleurisy. Bronchial asthma. Chronic obstructive pulmonary disease**

Pneumonia: etiology, pathogenesis, main clinical manifestations. Laboratory (examination of blood, sputum, pleural effusion) and instrumental (radiography, computed tomography) diagnostics, prevention, principles of treatment of pneumonia.

Bronchial asthma: etiology, pathogenesis, risk factors, main clinical manifestations. Laboratory (examination of blood, sputum) and instrumental (bronchoscopy, spirometry, spirometry) methods of diagnosing bronchial asthma.

Pleurisy: etiology, pathogenesis, main clinical manifestations. Laboratory (examination of blood, pleural effusion) and instrumental (radiography, computed tomography) diagnostics, prevention, principles of treatment of pleurisy.

Chronic obstructive pulmonary disease (COPD): etiology, pathogenesis, main clinical manifestations. Laboratory (examination of blood, sputum) and instrumental (radiography, computed tomography, spirometry) diagnostics, prevention, principles of treatment and prevention of COPD.

Examination of patients with respiratory diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

#### **3.2. Emergency conditions in pulmonology**

Bronchial asthma attack: emergency medical care and principles of treatment.

Obturation of trachea or large bronchus by a foreign body: clinical manifestations, emergency medical care.

Pulmonary hemorrhage: etiology, pathogenesis, clinical manifestations, laboratory and instrumental diagnostics, emergency medical care and principles of treatment.

Examination of patients with respiratory diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

#### **4. Cardiovascular diseases**

##### **4.1. Arterial hypertension. Atherosclerosis. Coronary heart disease. Angina pectoris. Myocardial infarction**

Arterial hypertension: etiology, pathogenesis, classification, main clinical signs. Instrumental and laboratory data for arterial hypertension. Principles of treatment of arterial hypertension. The concept of secondary hypertension.

Atherosclerosis: etiology and pathogenesis. The main biochemical parameters of lipid metabolism. Risk factors for atherosclerosis.

Coronary heart disease (CHD): definition, etiology, pathogenesis, classification, risk factors. Clinical forms of coronary heart disease.

Angina pectoris: the main clinical manifestations, characteristics of pain syndrome. Instrumental and laboratory data for angina pectoris (biochemical blood analysis, ECG, stress and pharmacological tests, 24 hour ECG-monitoring, coronary angiography). Principles of angina pectoris treatment.

Myocardial infarction: main clinical manifestations. Stages of the disease. Laboratory methods of investigation in myocardial infarction: creatine phosphokinase, MB fraction of creatine phosphokinase, troponin. ECG-signs of myocardial infarction. Echocardiography (heart ultrasound) in myocardial infarction. Principles of treatment and prevention of myocardial infarction.

Examination of patients with cardiovascular diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

##### **4.2. Chronic rheumatic heart disease. Infectious endocarditis. Mitral and aortic heart diseases**

Chronic rheumatic heart disease: etiology, pathogenesis, main clinical manifestations, diagnosis, principles of treatment and prevention.

Infectious endocarditis: etiology, pathogenesis, main clinical manifestations, laboratory and instrumental diagnostics. The role of a dentist in the prevention of infectious endocarditis.

Mitral and aortic heart diseases: etiology, pathogenesis of hemodynamic disorders in mitral regurgitation, mitral stenosis, aortic regurgitation, aortic stenosis. The main clinical manifestations of mitral and aortic heart diseases, value of instrumental diagnostic methods (ECG, Echocardiogram).

Examination of patients with cardiovascular diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

### **4.3. Acute and chronic heart failure. Heart arrhythmias and conduction disorders**

Acute and chronic heart failure: etiology, classification, pathogenesis of hemodynamic disorders. Clinical manifestations of acute left ventricular heart failure. Clinical manifestations of chronic heart failure. Principles of treatment and prevention acute and chronic heart failure.

Clinical manifestations and ECG-signs of cardiac rhythm and conduction disorders: extrasystole, atrial fibrillation, ventricular fibrillation, atrioventricular block, His's bundle branch blocks.

Examination of patients with cardiovascular disease: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

### **4.4. Cardiovascular emergencies. Cardiopulmonary resuscitation**

Clinical manifestations of cardiogenic shock, acute vascular insufficiency (collapse, fainting). The difference between collapse and fainting. Emergency medical care for acute left ventricular failure, cardiogenic shock, fainting, collapse. Methods of cardiopulmonary resuscitation.

Carrying out cardiopulmonary resuscitation.

Examination of patients with cardiovascular emergencies: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

## **5. Diseases of the digestive system**

### **5.1. Stomach ulcer, duodenal ulcer. Gastritis. Hepatitis. Cirrhosis of the liver**

Acute and chronic gastritis, gastric and duodenal ulcers: etiology, pathogenesis, risk factors, main clinical manifestations, laboratory and instrumental diagnostics (esophagogastroduodenoscopy, pH-metry, biopsy), principles of treatment and prevention.

Chronic hepatitis: etiology, pathogenesis, risk factors, main clinical manifestations. Laboratory (bilirubin, total protein, proteinogram, enzymes) and instrumental (ultrasound) diagnostics, principles of treatment and prevention.

Liver cirrhosis: etiology, pathogenesis, main clinical manifestations, risk factors. Laboratory (bilirubin, total protein, proteinogram, enzymes, blood clotting parameters) and instrumental (ultrasound) diagnostics, principles of treatment.

Examination of patients with digestive system diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

### **5.2. Emergency conditions in gastroenterology**

The main clinical signs of gastrointestinal bleeding. Differences between gastric and pulmonary bleeding. Principles of diagnosis of occult gastrointestinal bleeding. Emergency medical care for esophageal, gastric and intestinal bleeding.

Examination of patients with digestive system diseases: interview, general

inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

## **6. Diseases of the kidneys and urinary tract. Pyelonephritis. Glomerulonephritis. Kidney stones. Acute and chronic renal failure**

Acute and chronic glomerulonephritis, pyelonephritis: etiology, pathogenesis, clinical manifestations, risk factors. Laboratory (complete blood count, biochemical blood tests, urine tests) and instrumental (ultrasound) diagnostics, principles of treatment.

Kidney stones: etiology, pathogenesis, clinical manifestations, risk factors. Laboratory (complete blood count, biochemical blood tests, urine tests) and instrumental (ultrasound) diagnostics, principles of treatment.

Acute renal failure (acute kidney injury), chronic renal failure (chronic kidney disease): etiology, classification, clinical manifestations. Laboratory and instrumental diagnostics, principles of treatment.

Examination of patients with kidney and urinary tract diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

## **7. Diseases of the musculoskeletal system and connective tissue. Acute allergic reactions**

Rheumatoid arthritis: etiology, pathogenesis, main clinical manifestations. Osteoarthritis: etiology, pathogenesis, main clinical manifestations. Laboratory and instrumental diagnostics of diseases of the musculoskeletal system, principles of treatment.

Concept of allergy. Etiology and pathogenesis of acute allergic reactions (urticaria, Quincke's edema, anaphylactic shock), the main clinical manifestations. Stevens-Johnson syndrome: etiology, main clinical manifestations. Emergency medical care for acute urticaria, Quincke's edema, anaphylactic shock.

Examination of patients with diseases of the musculoskeletal system and connective tissue diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

## **8. Hematological diseases. Anemia. Leukemia. Coagulopathy**

Anemia: definition, classification, etiology and pathogenesis. The main clinical manifestations and laboratory signs of anemia. Principles of treatment.

Acute and chronic leukemia: definition, classification, etiology and pathogenesis. Clinical manifestations of leukemia, laboratory and instrumental diagnostics, principles of treatment.

Coagulopathy: definition, classification, etiology and pathogenesis. Clinical manifestations, laboratory and instrumental diagnostics, principles of treatment.

Examination of patients with diseases of the blood system: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

**9. Endocrine system diseases. Diabetes mellitus. Thyroid diseases**

Diabetes mellitus: etiology, pathogenesis, classification. Clinical manifestations of diabetes mellitus. Laboratory examination methods in case of diabetes mellitus (blood glucose and acetone in urine, glucose tolerance test and glycemic profile, glycated hemoglobin). Principles of treatment and prevention of diabetes mellitus.

The main diagnostic criteria and emergency medical care for diabetic (hyperketonemic) and hypoglycemic comas.

Thyrotoxicosis, hypothyroidism: etiology, pathogenesis, main clinical manifestations. Laboratory and instrumental diagnostics, principles of treatment.

Examination of patients with endocrine system diseases: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

**10. Internal diseases proceeding in typical forms**

Examination of patients with internal diseases, proceeding in typical forms: interview, general inspection, palpation, percussion, auscultation. Laboratory and instrumental examination planning, result interpretation. Diagnosis. Medical documentation fulfillment.

### EDUCATIONAL DISCIPLINE «INTERNAL DISEASES» CURRICULAR CHART

Section, topic #	Section (topic) name	Number of class hours		SSIW	Literature	Practical skills	Form of control	
		lectures	practical				of practical skills	of current / intermediate assessment
<b>6 semester</b>								
	<b>Lectures</b>	<b>9</b>	-	<b>3</b>				
1.	General plan of patient's examination. Basic and additional methods of patient's examination. Medical ethics and deontology	1,5	-	-	1, 3, 6, 7, 12			
3.1. 3.2.	Respiratory diseases	1,5	-	-	1, 4, 6, 7, 12			
4.1. 4.2.	Cardiovascular diseases	1,5	-	-	1, 3, 6, 7, 12			
5.1. 5.2.	Diseases of the digestive system	1,5	-	-	2, 4, 6, 7, 12			
6.	Diseases of the kidneys and urinary tract	1,5	-	-	1, 4, 6, 7, 12			
7.	Acute allergic reaction	1,5	-	-	2, 4, 5, 6, 7, 12			
8.	Hematological diseases	-	-	1,5	2, 3, 6, 7, 12			Electronic testing, interview, filling out the workbook
9.	Endocrine system diseases	-	-	1,5	2, 4, 6, 7, 12			Electronic testing, interview, filling out the workbook

	<b>Practical classes</b>	-	<b>54</b>	-				
1.	General plan of patient's examination. Basic and additional methods of patient's examination. Medical ethics and deontology	-	3	-	1, 3, 6, 7, 12	Inspection of the skin and subcutaneous tissues	Performing a practical skill using simulators or a simulated patient	Electronic testing, interview
2.1.	Examination methods of patients with respiratory diseases	-	3	-	1, 4, 6, 7, 12	1. Chest shape estimation (inspection and palpation). 2. Palpation of chest pain points. 3. Comparative percussion of the lungs. 4. Auscultation of the lungs	Performing a practical skill using simulators or a simulated patient	Electronic testing, interview
2.2.	Examination methods of patients with cardiovascular diseases	-	3	-	1, 3, 6, 7, 12	1. Assessment the pulse on the radial, carotid arteries. 2. Palpation of the apical impulse. 3. Auscultation of the heart	Performing a practical skill using simulators or a simulated patient	Electronic testing, interview
2.3.	Examination methods of patients with digestive diseases	-	3	-	2, 4, 6, 7, 12	Superficial palpation of the abdomen	Performing a practical skill using simulators or a simulated patient	Electronic testing, interview
2.4.	Examination methods of patients with urinary, endocrine, hematological	-	3	-	1, 2, 3, 4, 6, 7, 12	1. Inspection and palpation of the lymph nodes of the head and neck. 2. Inspection and palpation of the thyroid gland. 3. Auscultation of the heart	Performing a practical skill using simulators or a simulated patient *	Electronic testing, interview
3.1.	Pneumonia. Pleurisy. Bronchial asthma. Chronic obstructive pulmonary disease	-	3	-	1, 4, 6, 7, 8, 12	Auscultation of the lungs	Performing a practical skill using simulators or a simulated patient	Electronic testing, interview, solving situational tasks

3.2.	Emergency conditions in pulmonology	-	3	-	1, 4, 6, 7, 8, 12	Auscultation of the lungs	Performing a practical skill using simulators or a simulated patient	Electronic testing, interview, solving situational tasks
4.1.	Arterial hypertension. Atherosclerosis. Coronary heart disease. Angina pectoris. Myocardial infarction	-	3	-	1, 3, 6, 7, 10, 12	1. Interpretation of a biochemical blood test. 2. ECG interpretation	Solving situational task	Electronic testing, interview, solving situational tasks
4.2.	Chronic rheumatic heart disease. Infectious endocarditis. Mitral and aortic heart diseases	-	3	-	1, 3, 6, 7, 12	Auscultation of the heart	Performing a practical skill using simulators or a simulated patient	Electronic testing, interview, solving situational tasks
4.3.	Acute and chronic heart failure. Heart arrhythmias and conduction disorders	-	3	-	1, 3, 6, 7, 12	ECG interpretation	Solving situational task	Electronic testing, interview
4.4.	Cardiovascular emergencies. Cardiopulmonary resuscitation	-	3	-	1, 3, 6, 7, 9, 10, 12	1. Assessment the pulse on the radial, carotid arteries.  2. ECG interpretation	Performing a practical skill using simulators or a simulated patient. Solving situational task	Electronic testing, interview, solving situational tasks*
5.1.	Stomach ulcer, duodenal ulcer. Gastritis. Hepatitis. Cirrhosis of the liver	-	3	-	2, 4, 6, 7, 12	1. Superficial palpation of the abdomen.  2. Interpretation of a biochemical blood test	Performing a practical skill using simulators or a simulated patient. Solving situational task	Electronic testing, interview, solving situational tasks
5.2.	Emergency conditions in gastroenterology	-	3	-	2, 4, 6, 7, 12	Superficial palpation of the abdomen	Performing a practical skill using simulators or a simulated patient	Electronic testing, interview, solving situational tasks

6.	Diseases of the kidneys and urinary tract. Pyelonephritis. Glomerulonephritis. Kidney stones. Acute and chronic renal failure	-	3	-	1, 4, 6, 7, 12	Interpretation of a urinalysis	Solving situational task	Electronic testing, interview, solving situational tasks
7.	Diseases of the musculoskeletal system and connective tissue. Acute allergic reaction	-	3	-	2, 4, 5, 6, 7, 11, 12	Interpretation of a biochemical blood test	Solving situational task	Electronic testing, interview, solving situational tasks
8.	Hematological diseases. Anemia. Leukemia. Coagulopathy	-	3	-	2, 3, 6, 7, 12	1. Inspection and palpation of the lymph nodes of the head and neck. 2. Interpretation of a complete blood count	Performing a practical skill using simulators or a simulated patient. Solving situational task	Electronic testing, interview, solving situational tasks
9.	Endocrine system diseases. Diabetes mellitus. Thyroid disease	-	3	-	2, 4, 6, 7, 12	1. Inspection and palpation of the thyroid gland. 2. Interpretation of a complete blood count	Performing a practical skill using simulators or a simulated patient. Solving situational task	Electronic testing, interview, control work*, solving situational tasks
10.	Internal diseases proceeding in typical forms	-	3	-	1, 2, 3, 4, 6, 7, 12	Interpretation of a complete blood count	Solving situational task*	Electronic testing
<b>Total hours</b>		<b>9</b>	<b>54</b>	<b>3</b>				<b>Exam</b>

\*This is a mandatory form of current certification.

## INFORMATION AND INSTRUCTIONAL UNIT

### LITERATURE

#### **Basic:**

1. Internal diseases : textbook. In 2 Vols. Vol. 1 / ed. by A. I. Martynov, J. D. Kobalava, S. V. Moiseev. – Moskow : Geotar-Media, 2022. – 683 p.
2. Internal diseases : textbook. In 2 Vols. Vol. 2 / ed. by A. I. Martynov, J. D. Kobalava, S. V. Moiseev. – Moskow : Geotar-Media, 2022. – 614 p.

#### **Additional:**

3. Internal medicine : textbook for English-speaking students of higher medical educational esablishment. P. 1 : Cardiology. Rheumatology. Hematology / ed. by M. A. Stanislavchuk, V. K. Sierkova. – Vinnytsya : Nova Knyha, 2019. – 407 p.
4. Internal medicine : textbook for English-speaking students of higher medical educational esablishment. P. 2 : Pulmonology. Gastroenterology. Nephrology. Diseases of the internal organs in countries with hot climate / ed. by M. A. Stanislavchuk, V. K. Sierkova. – Vinnytsya : Nova Knyha, 2019. – 359 p.
5. Arsentyeva, I. L. Symptoms, diagnosis, principles of treatment and prevention of acute allergic diseases / I. L. Arsentyeva. – Minsk : BSMU, 2021. – 31 p.
6. Workshop «Physical examination methods» / E. A. Dotsenko [et al.]. – Minsk : BSMU, 2023. – 116 p.
7. Workshop «Diagnostic methods in the internal medicine» / E. A. Dotsenko [et al.] – Minsk : BSMU, 2023. – 75 p.

#### **Guidelines:**

8. Global Strategy for Asthma Management and Prevention : GINA Main Report, 2025. Available at : <https://ginasthma.org/>. (accessed 07.09.2025).
  9. 2024 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations : Summary From the Basic Life Support; Advanced Life Support; Pediatric Life Support; Neonatal Life Support; Education, Implementation, and Teams; and First Aid Task Forces. Available at : <https://www.ahajournals.org> (accessed 10.09.2025).
  10. 2025 ACC/AHA/ACEP/NAEMSP/SCAI Guideline for the Management of Patients With Acute Coronary Syndromes : A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. Available at : <https://www.escardio.org/guidelines/clinical-practice-guidelines/all-esc-practice-guidelines/acute-coronary-syndromes-acs-guidelines/> (accessed 11.09.2025).
  11. EAACI guidelines : Anaphylaxis (2021 update). Allergy. 2022 Feb. Available at : <https://pubmed.ncbi.nlm.nih.gov/34343358/> (accessed 02.09.2025).
- Electronic courseware for the educational discipline « Internal Diseases »**
12. <https://etest.bsmu.by/course/view.php?id=242>.

**METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE**

The time allocated for independent work can be used by students for:  
 preparing for lectures, practical classes;  
 preparing for exam in the academic discipline;  
 studying the topics (issues) designed for independent work;  
 taking notes of educational literature;  
 filling out the workbook.

**METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF SUPERVISED STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE**

**APPROXIMATE LIST OF TASKS FOR SUPERVISED STUDENT INDEPENDENT WORK:**  
 filling out the workbook.

**FORMS OF CONTROL OF SUPERVISED STUDENT INDEPENDENT WORK:**  
 interview;  
 electronic testing.

**LIST OF AVAILABLE DIAGNOSTIC TOOLS**

The following forms of current certification are used to diagnose competencies:  
 interview;  
 control work;  
 electronic tests;  
 solving situational tasks.

**LIST OF AVAILABLE TEACHING METHODS**

Traditional method;  
 active (interactive) methods:  
     Problem-Based Learning (PBL);  
     Team-Based Learning (TBL);  
     Case-Based Learning (CBL).

**LIST OF PRACTICAL SKILLS**

Name of practical skills	Form of practical skills control
1. Inspection of the skin and subcutaneous tissues	Performing a practical skill using simulators or a simulated patient
2. Inspection and palpation of the lymph nodes of the head and neck	Performing a practical skill using simulators or a simulated patient
3. Inspection and palpation of the thyroid gland	Performing a practical skill using simulators or a simulated patient
4. Chest shape estimation (inspection and palpation)	Performing a practical skill using simulators or a simulated patient

Name of practical skills	Form of practical skills control
5. Palpation of chest pain points	Performing a practical skill using simulators or a simulated patient
6. Comparative percussion of the lungs	Performing a practical skill using simulators or a simulated patient
7. Auscultation of the lungs	Performing a practical skill using simulators or a simulated patient
8. Assessment the pulse on the radial, carotid arteries	Performing a practical skill using simulators or a simulated patient
9. Palpation of the apical impulse	Performing a practical skill using simulators or a simulated patient
10. Auscultation of the heart	Performing a practical skill using simulators or a simulated patient
11. Superficial palpation of the abdomen	Performing a practical skill using simulators or a simulated patient
12. Interpretation of a complete blood count	Solving situational task
13. Interpretation of a biochemical blood test	Solving situational task
14. Interpretation of a urinalysis	Solving situational task
15. ECG interpretation	Solving situational task

**PROTOCOL OF THE CURRICULUM APPROVAL  
BY OTHER DEPARTMENTS**

Title of the discipline requiring approval	Department	Amendments to the curriculum in the academic discipline	Decision of the department, which designed the curriculum
1. Radiodiagnosis and Radiotherapy	Radiation Diagnostics and Radiation Therapy	No	Protocol # 3 of 30.09.25
2. Disaster Medicine	Military Health Maintenance Organization and Emergency Medicine	No	Protocol # 3 of 30.09.25
3. Pediatrics	1 <sup>st</sup> Childhood Diseases	No	Protocol # 3 of 30.09.25

## COMPILERS/AUTHORS:

Head of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University», D.Sc., Professor

E.A.Dotsenko

Professor of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University», D.Sc., Professor

I.I.Burakov

Associate Professor of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor

M.V.Sholkova

Associate Professor of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University», PhD, Associate Professor

G.M.Khvashechkaya

Associate Professor of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University», PhD

T.P.Novikova

Senior Lecturer of the Department of Propaedeutics of Internal Diseases of the Educational Institution «Belarusian State Medical University»

E.I.Sasinovich

Curriculum content, composition and the accompanying documents comply with the established requirements.

Head of the Office of Educational Activities of the Educational Institution «Belarusian State Medical University»

I.L.Kotovich

Methodologist of the Educational and Methodological Department of the Office of Educational Activities of the Educational Institution «Belarusian State Medical University»

S.V.Zaturanova