

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

Контрольный
экземпляр



APPROVED

by First Vice-Rector, Professor

I.N.Moroz

21.11.2022

Reg. # UD-4.01-18/2223/edu.

PROPAEDEUTICS OF INTERNAL DISEASES

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

1-79 01 01 «General Medicine»

Curriculum is based on the educational program «Propaedeutics of Internal Diseases», approved 16.11.2022, registration # УД-L.01-18/2223/уч.; on the educational plan in the specialty 1-79 01 01 «General Medicine», approved 18.05.2022, registration # L 79-1-1/2223/mf.

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RECOMMENDED FOR APPROVAL:

by the Department of Propaedeutics of Internal Diseases of the educational institution «Belarusian State Medical University»
(protocol # 1 of 30.08.2022);

by the Scientific and Methodological Council of the educational institution «Belarusian State Medical University»
(Protocol # 9 of 16.11.2022)

EXPLANATORY NOTE

«Propaedeutics of Internal Diseases» is the academic discipline of the module «Therapy Module #1», which provides systematic scientific information about the semiotics of internal organ diseases, techniques of examination of healthy individuals, and patients with internal organ diseases.

The academic discipline of «Propaedeutics of Internal Diseases» aims to develop the fundamental professional skills necessary to address issues that arise in the examination of healthy individuals and patients with internal organ diseases, including physical, laboratory, and instrumental methods of examination; formulation of clinical diagnoses of patients with internal organ diseases; and provision of medical care to patients with internal organ diseases.

The objectives of the academic discipline «Propaedeutics of Internal Diseases» include giving students the scientific knowledge of subjective and objective examination techniques, symptoms and syndromes associated with internal organ diseases, and techniques for laboratory and instrumental diagnosis. Students will also develop the abilities and skills required to examine patients who have internal organ diseases and the ability to interpret the findings of laboratory and instrumental investigations.

The knowledge, skills and abilities acquired during the study of the academic discipline «Propaedeutics of Internal Diseases» are necessary for the successful study of the following modules: «Therapeutic module # 2», «Therapeutic module # 3», «Internal Medicine».

Studying the educational discipline «Informatics in Pharmacy» should ensure the formation of students' specialized competence:

SC. Carry out clinical examination of patients based on the knowledge about the semiotics of adult organs and systems lesions.

As a result of studying the discipline «Propaedeutics of Internal Diseases», the student should:

know:

fundamental clinical concepts and terms describing the findings of examinations of patients with diseases of internal organs;

semiotics of complaints in diseases of internal organs;

symptomatology of typical forms of the most prevalent diseases of internal organs;

techniques for subjective and objective examination of patients with diseases of internal organs;

findings of physical examination of a healthy person and a patient with diseases of internal organs;

basic laboratory and instrumental methods for examining adult organs and systems for illnesses;

be able to:

organize and carry out conversation with individuals suffering from internal disorders;

arrange and carry out an objective examination of patients with diseases of internal organs;

establish a strategy for individuals with internal organ disorders to have laboratory and instrumental examinations;

evaluate and analyze the findings of laboratory tests (urinalysis, complete blood count, biochemical blood analysis, pleural fluid analysis, sputum analysis) and instrumental tests (chest X-ray, electrocardiogram) in case of internal diseases;

master:

methodology for conducting a physical examination of a healthy individual and patients with internal organ diseases (questioning, inspection, palpation, percussion and auscultation);

techniques for assessing the clinical picture in internal organ illnesses that help create clinical thinking.

Total number of hours for the study of the discipline is 336 academic hours. Classroom hours according to the typed of studies: lectures - 32 hours (including 10 hour of supervised student independent work), practical classes – 144 hours, student independent work (self-study) – 166 hours.

Intermediate assessment is carried out according to the syllabus of the specialty in the form of a credit (4th and 5th semesters) and an examination (6th semester).

Form of higher education is full-time.

ALLOCATION OF ACADEMIC TIME ACCORDING TO SEMESTERS OF STUDY

Code, name of the specialty	semester	Number of academic hours						Form of intermediate assessment
		total	in-class	including			out-of-class self-studies	
				lectures (including supervised independent work)	supervised student independent work	practicals		
1-79 01 01 «General Medicine»	4	108	46	10	3	36	62	credit
	5	120	66	12	4	54	54	credit
	6	108	58	10	3	48	50	examination

THEMATIC PLAN

Section (topic) name	Number of class hours	
	lectures	practical
1. Patient's examination methods	10	36
1.1. Introduction to the academic discipline «Propaedeutics of Internal Diseases». A brief history of the internal medicine. Medical ethics and deontology. Basic concepts of clinical medicine	2	2
1.2. Clinical algorithm of patient's examination		2
1.3. Communications in medicine. Subjective method of patient's examination		2
1.4. Objective methods of patient's examination	2	4
1.5. Palpation. Types and rules	2	6
1.6. Percussion. Types and rules	2	6
1.7. Auscultation Types and rules	2	6
1.8. Laboratory tests	-	2
1.9. Instrumental diagnostic methods	-	2
1.10. Clinical basis of electrocardiography. Electrocardiogram recording. Normal electrocardiogram interpretation	-	4
2. General propaedeutics (semiotics)	12	54
2.1. Examination of patients with respiratory diseases	2	9
2.2. Examination of patients with cardiovascular diseases	2	9
2.3. Clinical and electrocardiographic signs of heart arrhythmias, conduction disorders, atrial and ventricular hypertrophy	-	9
2.4. Examination of patients with gastrointestinal diseases	2	9
2.5. Examination of patients with kidney and urinary tract diseases	2	6
2.6. Examination of patients with hematologic diseases	2	3
2.7. Examination of patients with diseases of the thyroid gland, pancreas (diabetes mellitus). Examination of patients with musculoskeletal system diseases	2	9
3. Special propaedeutics (special pathology)	10	48
3.1. Bronchial asthma. Chronic obstructive pulmonary disease	2	3
3.2. Pneumonia. Pleurisy		3
3.3. Acute rheumatic fever. Infective endocarditis	2	3
3.4. Heart valve diseases		3

Section (topic) name	Number of class hours	
	lectures	practical
3.5. Arterial hypertension. Atherosclerosis		3
3.6. Ischemic heart disease. Angina pectoris. Myocardial infarction	2	3
3.7. Acute and chronic heart failure. Cardiac arrhythmias and conduction disorders		3
3.8. Diseases of the digestive system: gastritis, stomach ulcer and duodenal ulcer. Management of gastrointestinal bleeding	2	3
3.9. Liver diseases: hepatitis, liver cirrhosis. The concept of gallbladder and pancreas diseases		3
3.10. Kidney diseases: glomerulonephritis, pyelonephritis, acute kidney injury, chronic kidney disease	2	3
3.11. Hematologic diseases: anemia, hemoblastosis	-	3
3.12. Thyroid diseases, diabetes mellitus. Management of hyperglycemic and hypoglycemic comas	-	3
3.13. Diseases of the musculoskeletal system: arthritis in case of connective tissue diseases (rheumatoid arthritis), infectious arthritis, metabolic arthritis (osteoarthritis, gout)	-	3
3.14. Acute allergic diseases. Management of anaphylactic shock	-	9
Total hours	32	138

CONTENT OF THE EDUCATIONAL MATERIAL

1. Patient's examination methods

1.1. Introduction to the academic discipline «Propaedeutics of Internal Diseases». A brief history of the internal medicine. Medical ethics and deontology. Basic concepts of clinical medicine

The academic discipline «Propaedeutics of Internal Diseases» in relation to other medical academic fields. The primary goals of the research area «Propaedeutics of Internal Diseases». A brief history of how the doctrine of internal illnesses came to be. Medical ethics and deontology.

Clinical medicine's fundamental principles include symptom, syndrome, illness, etiology, pathogenesis, norm, pathology, and diagnosis Types of diagnosis. Various diagnostic techniques for making diagnoses.

1.2. Clinical algorithm of patient's examination

Clinical examination techniques that are fundamental (interview, examination, palpation, percussion, auscultation) and supplemental (laboratory, instrumental)

general strategy for the patient's examination. The general plan of patient's examination. Diagnostic significance of patient clinical examination techniques in internal organ illnesses. factors that have an impact on the patient's clinical examination outcomes.

The structure of the hospital patient's medical file. The scheme of the educational case history.

1.3. Communications in medicine. Subjective method of patient's examination

Ability to communicate. Guidelines for speaking with patients. unique communication challenges with patients in a variety of healthcare settings (cultural and language diversity, altered states of consciousness, violent conduct, etc.).

Subjective examination method (interview): rules for recognizing and systematizing complaints about illnesses of the internal organs, portions of the disease's anamnesis, and the patient's life history comprise the subjective technique of examination (questioning).

1.4. Objective methods of patient's examination

Objective methods of examination.

Inspection, its types. Physical justification, rules and inspection techniques.

General inspection. Assessment of vital signs (state of consciousness, pulse, blood pressure, breathing). Assessment of the severity of the patient's condition. The patient's position. Examination of the skin, mucous membranes. Comparing the biological age to the passport age. Face expression. Nutritional status assessment. Anthropometry. Measurement of the circumference of the abdomen. Body mass index. Gait. Linguistic traits of the patient. Evaluation of the patient's odor. Physique and constitutional types. Anthropometry.

Results of a general examination of a healthy patient.

Local inspection.

Examination of the head, neck. Examination of the oral cavity. Tongue, humidity, color, the nature and severity of the papillary layer, the presence and nature of plaque on the tongue. Examination of the nose, ears, eyes, and hair..

Chest examination. Thoracic topographic lines. Inspection of the thorax when still. Thorax shapes include asthenic, hypersthenic, and normosthenic. The magnitude of the epigastric angle, the expression of the supra- and subclavicular fossae, and the placement of the shoulder blades and clavicles. The chest's symmetry. Spine's physiological curvature. Mammary glands. Static chest examination's diagnostic usefulness.

Thorax inspection in motion. Chest circumference, chest excursion when breathing. Diagnostic value of deviations from the norm. Breath: type of breathing (thoracic, abdominal, mixed), symmetry of respiratory movements, involvement of accessory muscles in breathing, number of breaths per minute, depth of breathing, breathing rhythm, objective signs of difficulty in inhaling and exhaling. Diagnostic value of dynamic chest examination.

Examining the patient's abdomen both vertically and horizontally position of the patient. Symmetry, involvement in breathing. The circumference of the abdomen. The shape of the umbilical ring. Type of hair loss. Assessment of gender traits.

Examination of limbs. Examination of palms, feet, fingers, nails. Examination of muscles, joints and bones. Symmetry of the extremities. Deformity of bones and joints. Muscular tone and level of muscle mass.

Results of a local examination of a healthy patient.

1.5. Palpation. Types and rules

Physical proof of the palpation method, guidelines, methodology, and forms of palpation. Superficial palpation. Deep palpation.

Palpation of the head, neck. Technique of palpation method of the head and neck. Chest palpation technique. Chest elasticity. Vocal fremitus. Assessment of the epigastric angle. Palpation of chest pain points. Diagnostic value of chest palpation.

Palpation of the chest. Palpation of the breast. Palpation of the apical thrust. Characteristics of the apical impulse: localization, width, resistance. Determination of the pulse on the radial, carotid arteries, dorsalis pedis arteries. Pulse characteristics: symmetry, volume, tension, rhythm, rate.

Results of palpation of the head, neck, chest of a healthy patient. Factors influencing the informative value of palpation.

Characteristics of the pulse of a healthy patient.

Abdominal palpation. Technique of superficial palpation of the abdomen. Diagnostic value of superficial palpation of the abdomen.

Deep palpation of abdominal organs. Technique of deep palpation of abdominal organs. Palpation of the sigmoid colon. Palpation of the cecum. Palpation of the transverse colon. Determination of the position of the large curvature of the stomach. Characteristics of individual properties of the organs of abdominal cavity: localization, size, consistency, painfulness, mobility according to the results of palpation. Diagnostic value of deep palpation of abdominal organs.

Determination of free fluid in the abdominal cavity.

Technique of palpation of the liver and gallbladder, diagnostic value. Technique of palpation of the spleen, diagnostic value.

Results of superficial palpation of the abdomen and deep palpation of abdominal organs in a healthy patient. Factors influencing the informative value of palpation.

Palpation of lymph nodes. Technique of palpation of the lymph nodes of the head and neck. Technique of palpation of supra-, subclavian and axillary lymph nodes. Technique of palpation of inguinal and popliteal lymph nodes. Characteristics of individual properties of lymph nodes: localization, size, consistency, mobility, adhesion, painfulness.

Palpation of the kidneys, bladder. Technique of palpation of the kidneys in a vertical and horizontal position. Technique of palpation of the bladder.

Results of palpation of lymph nodes, kidneys, bladder in a healthy patient. Results of palpation of lymph nodes, kidneys, bladder in a healthy patient. Factors influencing the informative value of palpation.

1.6. Percussion. Types and rules

Rules, techniques and types of percussion. Types of percussion sounds.

Comparative and topographic percussion of the lungs. Technique of comparative percussion of the lungs. Technique of topographical percussion of the

lungs. Definition of the border of the lower edge of the lungs. The concept of the mobility of the lower lung edge. Diagnostic significance of lung percussion.

Lung percussion results of a healthy patient. Factors influencing the informative value of percussion.

Percussion of the heart. Method of determining the boundaries of relative cardiac dullness. Determination of the boundaries of the vascular bundle. The concept of absolute heart dullness. Configuration of the heart. Diagnostic value of heart percussion.

Results of heart percussion in a healthy patient. Factors influencing the informative value of percussion.

Percussion of the liver and spleen. Liver percussion technique. Determination of the upper and lower limits of absolute liver dullness by topographic lines. Determination of the size of the liver by the method of M.G.Kurlov. Diagnostic value of liver percussion. The concept of percussion of the spleen. Bladder percussion. Factors affecting the informativeness of percussion.

The results of percussion of the liver and spleen of a healthy patient.

1.7. Auscultation Types and rules

Auscultation: general rules, techniques and types.

Lung auscultation. The method of auscultation of the lungs. The main breath sounds: mechanism of formation, characteristics, places of listening. The causes of breath sounds changes.

Bronchophony technique.

The results of auscultation of the lungs of a healthy patient.

Heart auscultation. Technique of heart auscultation. Heart sounds, the mechanism of their occurrence. The main sounds (S1 and SII) and additional (SIII and SIV). Characteristics of sounds: volume, timbre, duration. Character of changes of the basic heart sounds in norm (amplification, reduction, splitting, bifurcation).

Results of auscultation of the heart of a healthy patient. Factors influencing the informative value of auscultation.

Vessel auscultation. Auscultation technique of carotid arteries, femoral arteries, renal arteries. Measurement of arterial pressure. Assessment of central and peripheral venous pressure.

Abdominal auscultation. Abdominal auscultation technique. Results of auscultation of vessels and abdomen of a healthy patient. Factors influencing the informative value of auscultation.

1.8. Laboratory tests

General notion of laboratory methods of research, their importance in diseases of internal organs. The concept of basic and specific laboratory tests in diseases of internal organs.

Basic laboratory tests. Complete blood count. Reference values of the norm. Diagnostic value of deviations from the norm in diseases of internal organs.

Biochemical blood analysis. Reference values of the norm. Diagnostic value of deviations from the norm in diseases of internal organs.

General urinalysis. Reference values of the norm. Diagnostic value of deviations from the norm in diseases of internal organs.

1.9. Instrumental diagnostic methods

A general idea of Instrumental diagnostic methods, their importance in diseases of internal organs. Mandatory and additional instrumental studies.

Radial diagnostic methods, diagnostic value in diseases of internal organs.

Endoscopic diagnostic methods, diagnostic value in diseases of internal organs.

Ultrasound diagnostic methods in diseases of internal organs.

1.10. Clinical basis of electrocardiography. Electrocardiogram recording. Normal electrocardiogram interpretation

Electrophysiological basics of electrocardiography. Device and types of electrocardiographs. Fundamentals of safety when working with an electrocardiograph. The method of recording an electrocardiogram (ECG) in 12 leads. Algorithm of interpretation of normal ECG. Recording rate, voltages, evaluation of rhythm, calculation of heart rate, determination of the electrical axis of the heart.

Interviewing patients, conducting an objective examination of a healthy patient, interpretation of the results. Practice skills of physical examination of the patient.

2. General propaedeutics (semiotics)

2.1. Examination of patients with respiratory diseases

The main complaints of respiratory diseases and their mechanism: chest pain; cough; shortness of breath and/or attacks of suffocation; hemoptysis and/or pulmonary hemorrhage; fever; voice changes (hoarseness, aphonia).

Detailed description of the main complaints according to the algorithm: localization and irradiation, nature, duration, influencing factors (provoking, relieving). Diagnostic significance of the main complaints.

Features of collecting anamnesis of the disease (present history) and anamnesis of life (past history) in patients with respiratory diseases.

General inspection, inspection and palpation of the chest. General inspection in case of respiratory diseases. Forced position of the patient in case of respiratory diseases. Central cyanosis, mechanism of formation. «Nail clubbing» symptom

Local inspection in diseases of the respiratory organs. Static chest inspection. Pathological forms of the chest. Symmetry of the chest. Spinal curvatures: kyphosis, lordosis, scoliosis, kyphoscoliosis. Diagnostic value of static chest inspection in case of respiratory diseases.

Dynamic inspection of the chest. Pathological changes in the circumference of the chest, chest excursions on inhalation and exhalation. Objective signs of difficulty in inhaling and exhaling (inspiratory, expiratory and mixed dyspnea). Pathological abnormalities: violation of the type of breathing (thoracic, abdominal, mixed), symmetry of respiratory movements, participation of auxiliary muscles in breathing, change in the number of breaths per minute, violation of the depth and rhythm of breathing. Pathological types of respiration (stridor, Cheyne-Stokes breathing, Kussmaul breathing, Biot's breathing). Diagnostic value of dynamic chest examination.

Palpation of the chest in case of respiratory diseases. Determination of local soreness and elasticity of the chest. Changes in the elasticity of the chest. Study of

vocal fremitus in symmetrical areas. Strengthening and weakening of vocal fremitus in respiratory diseases. Diagnostic value of chest palpation in case of respiratory diseases.

Percussion and auscultation of the lungs. Comparative percussion of the lungs. The nature of percussion sound in symmetrical areas of the chest is normal and pathological (clear pulmonary sound, dullness, complete dull (flatness), hyperresonant, tympanic). Diagnostic value of comparative lung percussion.

Topographic percussion of the lungs. Change of the lower border of the lungs in the pathology of the respiratory organs. Diagnostic value of topographic lung percussion.

Lung auscultation. The nature of the change in the main respiratory sounds in the pathology of the respiratory organs. Pathological respiratory sounds, mechanism of their formation. Dry rales. Wet rales. Crepitation. Pleural friction rub. Differential diagnosis of pathological respiratory sounds.

Bronchophony technique, diagnostic value.

Diagnostic value of lung auscultation.

Respiratory tests and investigations. Laboratory tests in case of respiratory diseases: complete blood count, biochemical blood analysis, sputum test, pleural fluid test. Differential diagnosis of exudate and transudate.

Instrumental methods of investigation in respiratory diseases: pulse oximetry, radiography, chest computed tomography scan, spirometry. The concept of bronchoscopy, thoracoscopy. Diagnostic value of instrumental methods.

The main clinical syndromes in case of respiratory diseases. Syndrome of bronchial obstruction. Syndrome of emphysema. Pulmonary consolidation syndrome. Lung cavity syndrome. Atelectasis syndrome (obstruction and compression). Syndrome of fluid accumulation in pleural cavity. Syndrome of accumulation of air in the pleural cavity (pneumothorax). Respiratory failure syndrome (acute and chronic).

2.2. Examination of patients with cardiovascular diseases

The main complaints of circulatory diseases and their mechanism: pain in the heart area; shortness of breath and/or choking attacks; palpitation; cough; hemoptysis; pain or heaviness in the right hypochondrium area; edema; headache, dizziness, vision changes.

Details of the main complaints according to the algorithm: localization and irradiation, nature, duration, what provokes it, what alleviates it. Features of collecting anamnesis of disease (present history) and anamnesis of life (past history) in patients with cardiovascular diseases.

General inspection, inspection of the heart and peripheral vessels. General inspection of the patient with cardiovascular diseases. Forced position of the patient in cardiovascular diseases. Peripheral cyanosis and its difference from central cyanosis. Characteristics of edemas in circulatory diseases. Diagnostic value of the general inspection.

Examination of the heart area: cardiac and apical impulses, pathological pulsation, protrusion in the heart area. Examination of peripheral arteries and veins. The difference between venous and arterial pulsation in the neck, the causes of their

occurrence. Hepatogular reflux. Diagnostic value of examination of the heart area and peripheral vessels.

Palpation of the cardiac and apical impulse. Characteristics of the apical impulse: localization, width, resistance. The concept of systolic and diastolic tremor in the heart area. Palpation of epigastric pulsation, its causes. Diagnostic value of apical impulse palpation.

Palpation of vessels. Changes in arterial pulse in diseases of the circulatory system.

Percussion and auscultation of the heart. Changing the boundaries of relative heart dullness in cardiovascular diseases. Results of physical examination in patients with atrial and ventricular hypertrophy.

Changes in heart sounds in case of cardiovascular diseases: weakening, amplification, splitting, the appearance of additional sounds. «Quail» rhythm. Rhythm of the «gallop». Pendulum-like rhythm. Embryocardia, tachycardia, bradycardia, arrhythmia. «Pistol-shot» sound according Strazhesko. Diagnostic value of changes in heart sounds.

Cardiac murmurs, the mechanism of formation, classification. Difference between organic and functional murmurs. Relationship of murmurs and cardiac activity. Systolic and diastolic murmurs. Places of the best listening to murmurs, mechanisms of heart murmur radiation. Pericardial friction rub. Diagnostic value of cardiac murmurs.

Additional examination methods in case of cardiovascular diseases. Laboratory tests: complete blood count, urinalysis; biochemical blood analysis. Specific cardiovascular indicators. Interpretation of changes in the activity of myoglobin, troponin T and I, total creatine kinase, MB- creatine kinase, parameters of lipid metabolism, brain natriuretic peptide. Diagnostic value of laboratory tests in case of cardiovascular diseases.

Instrumental methods of investigation in diseases of the circulatory organs: electrocardiography (ECG) and stress-ECG tests, chest X-ray, echocardiography, angiography. Diagnostic value of instrumental methods of investigation in diseases of circulatory organs.

The main clinical syndromes in cardiovascular disease. Arterial hypertension syndrome. Syndrome of peripheral circulatory disorders (arterial insufficiency, venous insufficiency, lymphedema). Acute coronary insufficiency syndrome. Acute left ventricular failure syndrome. Chronic heart failure syndrome. Cardiac arrhythmia syndrome. Acute vascular insufficiency syndrome.

2.3. Clinical and electrocardiographic signs of heart arrhythmias, conduction disorders, atrial and ventricular hypertrophy

Ectopic complexes (supraventricular, atrioventricular, ventricular extrasystole). Electrocardiographic and clinical manifestations of extrasystole.

Electrocardiographic and clinical signs of atrial and ventricular hypertrophy.

Ectopic rhythms (paroxysmal supraventricular and ventricular tachycardia). Atrial fibrillation and atrial flutter. Ventricular fibrillation. Electrocardiographic and clinical manifestations of cardiac arrhythmias.

Arrhythmias associated with impaired sinus node automatism (sinus tachycardia, sinus bradycardia, sinus arrhythmia). Heart conduction disorders. Concept of sinoatrial block, atrial conduction disorders. Atrioventricular block: grade I, II and III. Complete left bundle branch block. Complete and incomplete right bundle branch block.

Clinical manifestations of cardiac conduction disorders. Adams-Stokes attack.

Practical skills training in examination of patients with respiratory and cardiovascular diseases.

2.4. Examination of patients with gastrointestinal diseases

The main complaints of patients with diseases of the esophagus, stomach, intestines, liver, gallbladder, pancreas. Abdominal pain, the mechanism of formation, characteristics in various diseases. Diagnostic value of abdominal pain.

Jaundice: color changes in the skin and mucous membranes, urine, feces. Skin itching.

Concept of dyspepsia. Appetite disorders. Dysphagia. Mechanisms of occurrence, characteristics. Diagnostic value.

Disorders of the defecation. Characteristics of stool changes (Bristol stool scale). Diagnostic significance. Diarrhea, constipation: mechanisms of occurrence, characterization. Diagnostic significance of defecation disorders.

Concept of nutritional deficiency.

Features of collecting medical and life history in patients with diseases of the digestive organs.

General and local inspection. Examination of a patient with gastrointestinal diseases. Skin changes: spider veins, hemorrhagic rashes, erythema palmaris, traces of scratching, hyperpigmentation, gynecomastia, edema. Jaundice, its types. Changes in the oral cavity, characteristic of diseases of the digestive organs.

Examination of the abdomen in the vertical and horizontal position of the patient. Configuration of the abdomen, participation of abdominal wall in the act of breathing. Ascites. Development of venous collaterals on the anterior abdominal wall («Caput Medusa»). Hernia of the anterior abdominal wall, visible peristalsis of the stomach and intestines.

Auscultation, percussion, palpation of the abdomen. Abdominal auscultation. Assessment of peristaltic sounds. Determination of the lower border of the large curvature of the stomach by stethoacoustic palpation.

Percussion of the abdomen, character of the percussion sound in flatulence, obesity and ascites. Mendel's symptom. Method of determining free fluid in the abdominal cavity. Percussive changes in the size of the liver (by the method of M.G.Kurlov). Diagnostic value of percussion of the abdomen.

Clinical significance of superficial and deep palpation of the abdomen in diseases of the digestive system. Concept of skin hyperesthesia zones (Zakharyin-Ged zones). Tension of anterior abdominal wall muscles, peritoneal irritation symptom (rebound tenderness or Shchetkin-Blumberg's sign).

Palpation of the liver. Changes in the lower edge of the liver, characteristic of various diseases. Diagnostic value of liver palpation.

Symptoms that can be detected in pathological processes in gallbladder: Ortner's, Murphy's, Mussy's (frenicus) symptoms. Diagnostic value of palpation of gallbladder.

Changes in percussion and palpatory dimensions of the spleen in diseases of the digestive organs.

Additional diagnostic methods. Laboratory tests for diseases of the esophagus, stomach and intestines.

Laboratory methods of investigation in diseases of the esophagus, stomach and intestines.

The concept of pH-metric. Urease breath test. Coprological examination. Study of physical and chemical properties of feces. Microscopic examination of feces. Bacteriological examination of feces. Fecal occult blood test.

Complete blood count, diagnostic value in diseases of the esophagus, stomach and intestines.

Biochemical blood tests: changes in the level of bilirubin, transaminases, alkaline phosphatase, alpha-1-antitrypsin, ceruloplasmin. Cytolytic syndrome in liver diseases. Hypoproteinemic syndrome. Dyslipidemic syndrome.

Diagnostic value of biochemical blood analysis in diseases of the digestive system. Coagulogram. Secondary coagulopathy.

Determination of hepatitis B and C virus markers in blood, diagnostic significance.

Instrumental methods of investigation in diseases of the digestive organs: ultrasonic; endoscopic; radiological. Manometry of the esophagus and stomach. Liver scintigraphy. Liver puncture biopsy.

Clinical and laboratory syndromes in gastrointestinal diseases. Dyspeptic syndrome. Maldigestion and malabsorption syndrome. Syndrome of esophageal, gastric and intestinal bleeding. Jaundice syndrome. Cholestasis syndrome. Hypersplenism syndrome. Portal hypertension syndrome. Liver failure syndrome. Portosystemic encephalopathy syndrome.

2.5. Examination of patients with kidney and urinary tract diseases

Main complaints of patients with kidney and urinary tract diseases. Pain in the lumbar region: mechanism of occurrence, characteristics in various diseases.

Dysuric disorders. Change in the volume of urine. Edema, the mechanism of formation. Difference of renal edema from edema of other etiology.

Peculiarities of medical and life history collection in patients with kidney and urinary tract diseases.

General inspection of a patient with kidney and urinary tract diseases. Changes in skin color. Peculiarities of edema. Swelling, bulging, asymmetry in the lumbar region. Presence of scratching. Visual assessment of urine.

Determination of the tapping symptom in the projection of the kidneys (kidney tenderness symptom). Percussive determination of the upper border of the bladder.

Clinical significance of palpation of the kidneys, characteristics of the kidneys on palpation. Assessment of painfulness in the projection points of the urinary tract.

Clinical significance of murmur in the projection of renal arteries.

Additional methods of investigation. Laboratory methods of investigation in diseases of the kidneys and urinary tract. Urinalysis: changes in the physical, chemical, and microscopic properties of urine. Urine tests by Nechiporenko and Zimnitsky. Urine test for microalbuminuria. Biochemical blood analysis: urea, creatinine, total protein, albumin, cholesterol. Calculation of glomerular filtration rate (GFR). Diagnostic value of laboratory investigation methods in kidney and urinary tract diseases.

Instrumental methods of investigation in kidney and urinary tract diseases. Diagnostic value of X-ray, ultrasound examination of the kidneys; cystoscopy, radioisotope renography, renal biopsy in diseases of the kidneys and urinary tract.

The main clinical syndromes in diseases of the kidneys and urinary tract: urinary syndrome; nephrotic syndrome; nephritic syndrome, renal failure syndrome (acute and chronic).

2.6. Examination of patients with hematologic diseases

The main complaints of patients with diseases of the blood system. Non-specific manifestations of diseases of the blood system. Pain in the throat, bones, right and left subcostal area. Bleeding (bleeding from the nose, gums, gastrointestinal tract, uterus). Skin itching. Fever.

General inspection of a patient with diseases of the blood system. Change in coloring of skin and mucous membranes. Increased regional lymph nodes. Bleeding, petechiae.

Percussion. Painfulness on percussion along the bones. Increased size of the liver and spleen.

Palpation. Changes in superficially located lymph nodes, liver and spleen; diagnostic significance of organ changes in diseases of the blood system.

Additional diagnostic methods. Laboratory and instrumental investigation methods in diseases of the blood system. Complete blood count. Diagnostic value of the identified changes. Coagulogram changes. The concept of bone marrow puncture, lymph node; immunophenotyping.

Main clinical syndromes in diseases of the blood system. Anemic syndrome. Hemorrhagic syndrome. Infectious syndrome. Lymphoproliferative syndrome.

2.7. Examination of patients with diseases of the thyroid gland, pancreas (diabetes mellitus). Examination of patients with musculoskeletal system diseases

Methods of examination of patients with thyroid diseases. Main complaints of patients with thyroid diseases.

Appetite disorders, weight changes, emotional disturbances, disorders of the digestive system, cardiovascular system

General inspection of a patient with thyroid diseases. Changes in skin coloring, features of mucous membranes. Eye symptoms in diseases of the thyroid gland. Edema. Obesity, lack of body weight.

Clinical significance of thyroid gland palpation. Degrees of enlargement of the thyroid gland. Auscultation of the thyroid gland.

Additional diagnostic methods. Laboratory methods of investigation in diseases of the thyroid gland: laboratory criteria of hypothyroidism, hyperthyroidism. Diagnostic value of laboratory methods of investigation.

Instrumental methods of investigation in diseases of the thyroid gland: ultrasound examination of the thyroid gland, fine needle puncture biopsy of the thyroid gland, computer tomography of the neck area. Diagnostic value of instrumental methods of investigation.

Methods of examination of patients with diabetes mellitus. Main complaints of patients with diabetes mellitus. Polydipsia, polyuria, muscle weakness, polyphagia, pruritis.

General inspection of a patient with diabetes mellitus. Changes in skin color, rubeosis, peculiarities of mucous membranes. Obesity, body weight deficit.

Additional diagnostic Laboratory methods of investigation in diabetes mellitus. Assessment of blood glucose level. Determination of glycosylated hemoglobin. Diagnostic criteria of diabetes mellitus.

Instrumental methods of investigation in diabetes mellitus: ultrasound examination of the pancreas, computer tomography of the abdominal cavity organs.

The main clinical syndromes in diseases of the thyroid, pancreas: thyrotoxicosis syndrome; hypothyroidism syndrome; hypoglycemia syndrome; hyperglycemia syndrome.

Methods of examination of patients with diseases of the musculoskeletal system. Complaints of patients with diseases of the musculoskeletal system. Pain in the bones and joints: the mechanism of occurrence, characterization. Morning stiffness, fever, limitation of joint mobility.

Examination of patients with diseases of the musculoskeletal system. Gait, posture, forced position of the patient. Change in skin coloration. Configuration of joints, determination of the volume of active and passive movements in the joints. Palpation of joints.

Additional methods of research. Diagnostic value of laboratory methods of investigation in diseases of the musculoskeletal system.

Instrumental methods of investigation in diseases of the musculoskeletal system: X-ray, computed tomography, magnetic nuclear tomography, ultrasound, arthroscopy. Diagnostic value of instrumental methods of research.

Clinical review of patients with diseases of the digestive organs, kidneys and urinary system, blood system, endocrine system, musculoskeletal system.

Objective examination of patients with diseases of internal organs. Interpretation of the results of laboratory and instrumental tests. Control of practical skills in the examination of patients with diseases of internal organs.

3. Special propaedeutics (special pathology)

3.1. Bronchial asthma. Chronic obstructive pulmonary disease

Bronchial asthma: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, complications. Interpretation of the results of laboratory and instrumental tests (complete blood count, biochemical blood analysis, sputum test, allergic tests, spirometry, picfluometry, pulse oximetry). Principles of treatment and prevention.

Chronic obstructive pulmonary disease: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, complications. Interpretation of the results of laboratory tests (sputum test, complete blood count) and instrumental investigations (spirometry, pulse oximetry, X-ray, bronchoscopy). Principles of treatment and prevention.

Medical care for an attack of bronchial asthma.

Clinical review of patients with bronchial asthma, chronic obstructive pulmonary disease.

3.2. Pneumonia. Pleurisy

Pneumonia: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, complications. Interpretation of the results of laboratory and instrumental tests (complete blood count, biochemical blood analysis, sputum test, spirometry, pulse oximetry, X-ray, computed tomography, bronchoscopy, ultrasound, thoracentesis, thoracoscopy). Principles of treatment and prevention. Principles of treatment and prevention. The concept of suppurative lung diseases.

Pleurisy: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, complications. Interpretation of the results of laboratory and instrumental investigations (complete blood count, biochemical blood analysis, pleural fluid test, pulse oximetry, X-ray, computed tomography, bronchoscopy, ultrasound, thoracentesis, thoracoscopy). Principles of treatment and prevention.

Criteria for respiratory failure.

Clinical review of patients with pneumonia, pleurisy.

3.3. Acute rheumatic fever. Infective endocarditis

Acute rheumatic fever: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, complications, principles of treatment and prevention. Interpretation of the results of laboratory and instrumental tests (complete blood count, biochemical blood analysis, echocardiography).

Infective endocarditis: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, complications, principles of treatment and prevention. Interpretation of the results of laboratory and instrumental tests (complete blood count, biochemical blood analysis, echocardiography).

Clinical review of patients with acute rheumatic fever, infectious endocarditis.

3.4. Heart valve diseases

Acquired mitral valve defects (mitral insufficiency, mitral stenosis): etiology, pathogenesis and intracardiac hemodynamics, clinical picture, instrumental diagnosis, principles of treatment and prevention.

Acquired aortic valve defects (aortic insufficiency, aortic stenosis): etiology, pathogenesis and intracardiac hemodynamics, clinical picture, instrumental diagnosis, principles of treatment and prevention.

Interpretation of the results of laboratory and instrumental tests (complete blood count, biochemical blood analysis, electrocardiogram, echocardiography, radiography).

The value of echocardiography for the diagnosis of heart valve diseases.

Clinical review of patients with heart valve diseases.

3.5. Arterial hypertension. Atherosclerosis

Primary arterial hypertension: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, complications, principles of treatment and prevention.

Diagnosis of target organ damage; identification of risk factors to determine the risk level of the disease. Interpretation of the results of laboratory and instrumental tests ((complete blood count, biochemical blood analysis, electrocardiogram, echocardiography, radiography, ultrasound, hormonal status).

Secondary arterial hypertension: definition, classification.

Hypertensive crisis: definition, classification, clinical picture. Complications of hypertensive crisis. Medical care for hypertensive crisis.

Atherosclerosis: definition, classification, risk factors. Clinical manifestations of atherosclerosis of the aorta, coronary arteries, cerebral arteries, arteries of the lower extremities, kidneys, mesenteric arteries. Indicators of lipid metabolism in the norm and target values. Principles of treatment and prevention of atherosclerosis. Interpretation of the results of laboratory and instrumental tests (complete blood count, biochemical blood analysis, lipidogram, electrocardiogram, echocardiography, 24-hour ambulatory blood pressure monitoring, radiography, ultrasound of blood vessels).

Clinical review of patients with arterial hypertension, atherosclerosis.

3.6. Ischemic heart disease. Angina pectoris. Myocardial infarction

Ischemic (coronary) heart disease: definition, etiology and pathogenesis, classification (WHO)

Angina pectoris: definition, etiology and pathogenesis, classification. Stable angina pectoris, functional classes. Unstable angina pectoris. Clinical and laboratory-instrumental diagnosis, principles of treatment and prevention of angina. Pain syndrome management in angina pectoris.

Myocardial infarction: definition, etiology and pathogenesis, classification. Clinical and laboratory-instrumental diagnostics, principles of treatment and prevention of myocardial infarction. Complications of myocardial infarction.

Interpretation of the results of laboratory and instrumental investigations (complete blood count, biochemical blood analysis, myocardial necrosis markers, electrocardiogram, stress tests, echocardiography, 24-hour ECG monitoring, X-ray).

Clinical review of patients with coronary heart disease.

3.7. Acute and chronic heart failure. Cardiac arrhythmias and conduction disorders

Acute heart failure, definition, concept of etiology and pathogenesis, classification. Clinical picture, principles of treatment and prevention of acute heart failure.

Chronic heart failure: definition, concept of etiology and pathogenesis, classification (stages and functional classes). Clinical picture, principles of treatment and prevention of chronic heart failure.

Interpretation of the results of laboratory and instrumental tests (complete blood count, biochemical blood analysis, atrial natriuretic peptide, electrocardiogram, echocardiography, X-ray, ultrasound).

Cardiac arrhythmias (atrial and ventricular extrasystole, paroxysmal tachycardia, atrial fibrillation and flutter, ventricular fibrillation). Conduction disorders (right and left bundle branch block, atrioventricular block). Clinical picture, ECG diagnostics, principles of treatment.

Interpretation of the results of instrumental investigations (electrocardiogram, echocardiogram, 24-hour ECG monitoring).

Clinical review of patients with cardiac arrhythmias and conduction disorders.

3.8. Diseases of the digestive system: gastritis, stomach ulcer and duodenal ulcer. Management of gastrointestinal bleeding

Acute and chronic gastritis: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, principles of treatment and prevention. Functional intestinal dyspepsia.

Acute and chronic gastroduodenal ulcer: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, complications, principles of treatment and prevention.

Interpretation of the results of laboratory and instrumental investigations (complete blood count, biochemical blood analysis, fecal occult blood test, gastroduodenoscopy, colonoscopy, morphological study of the biopsy material, radiography, ultrasound examination).

Management of gastrointestinal bleeding.

Clinical review of patients with diseases of the stomach and intestines.

3.9. Liver diseases: hepatitis, liver cirrhosis. The concept of the gallbladder and pancreas diseases

Acute and chronic hepatitis: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, principles of treatment and prevention.

Liver cirrhosis: definition, etiology, pathogenesis, clinical manifestations, classification, principles of treatment and prevention.

Interpretation of the results of laboratory and instrumental investigations (complete blood count, biochemical blood analysis, gastroduodenoscopy, elastography, liver biopsy, ultrasound examination).

The concept of diseases of gallbladder and pancreas.

Clinical review of patients with diseases of the liver, gallbladder, pancreas.

3.10. Kidney diseases: glomerulonephritis, pyelonephritis, acute kidney injury, chronic kidney disease

Acute and chronic glomerulonephritis: definition, etiology, pathogenesis, clinical manifestations, classification, complications, principles of treatment and prevention.

Acute and chronic pyelonephritis: definition, etiology, pathogenesis, clinical manifestations, classification, complications, principles of treatment and prevention.

Acute renal injury: definition, etiology, pathogenesis, clinical manifestations, classification. Chronic kidney disease: definition, etiology, pathogenesis, clinical manifestations, classification.

The concept of urinary tract infection.

Interpretation of the results of laboratory and instrumental investigations (complete blood count, biochemical blood analysis, urinalysis, ultrasound, kidney biopsy, renal scintigraphy).

Clinical review of patients with kidney diseases.

3.11. Hematologic diseases: anemia, hemoblastosis

Anemia: definition, etiology, pathogenesis, clinical manifestations, classification, complications, principles of treatment and prevention.

Iron deficiency anemia: etiology, clinical and laboratory diagnosis, principles of treatment and prevention.

B-12 deficiency anemia: etiology, clinical and laboratory diagnosis, principles of treatment and prevention.

Hemoblastosis: definition, etiology, pathogenesis, clinical manifestations, classification, complications, principles of treatment and prevention.

Interpretation of the results of laboratory and instrumental investigations (complete blood count, biochemical blood analysis, coagulogram) The significance of morphological and cytochemical studies of bone marrow and lymph nodes.

Clinical review of patients with anemia and hemoblastosis.

3.12. Thyroid diseases, diabetes mellitus. Management of hyperglycemic and hypoglycemic comas

Thyroid diseases: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, principles of treatment and prevention. Hypothyroidism. Hyperthyroidism.

Diabetes mellitus: definition, etiology, pathogenesis, risk factors, clinical manifestations, classification, principles of treatment and prevention. Hypoglycemic and hyperglycemic comas. Glucose intolerance. Management of hyperglycemic and hypoglycemic comas.

Interpretation of the results of laboratory and instrumental investigations (complete blood count, biochemical blood analysis, assessment of hormonal status, glycemia level, glucose tolerance test, glycated hemoglobin, urinalysis, ultrasound examination).

Clinical review of patients with thyroid diseases, diabetes mellitus.

3.13. Diseases of the musculoskeletal system: arthritis in case of connective tissue diseases (rheumatoid arthritis), infectious arthritis, metabolic arthritis (osteoarthritis, gout)

Rheumatoid arthritis: definition, etiology, pathogenesis, clinical manifestations, classification, complications, principles of treatment and prevention.

Infectious arthritis: definition, etiology, pathogenesis, clinical manifestations, classification, complications, principles of treatment and prevention.

Osteoarthritis: definition, etiology, pathogenesis, clinical manifestations, classification, complications, principles of treatment and prevention.

Gouty arthritis: definition, etiology, pathogenesis, clinical manifestations, classification, complications, principles of treatment and prevention.

Interpretation of the results of laboratory and instrumental investigations (complete blood count, biochemical blood analysis, markers of autoimmune diseases,

synovial fluid examination, radiography, computed tomography, ultrasound examination).

Clinical review of patients with diseases of the musculoskeletal system.

3.14 Acute allergic diseases. Management of anaphylactic shock

Acute urticaria, Quincke's edema, anaphylactic shock: definition, etiology, pathogenesis, clinical manifestations, classification, complications, principles of treatment and prevention. Management of anaphylactic shock.

Interpretation of the results of laboratory and instrumental investigations (complete blood count, biochemical blood analysis, allergic tests).

Clinical review of patients with acute urticaria, Quincke's edema, anaphylactic shock.

Examination of patients with diseases of internal organs, proceeding in a typical form.

Justification of the clinical diagnosis and design of the educational case history.

ACADEMIC DISCIPLINE CURRICULAR CHART

Section, topic #	Section (topic) name	Number of hours				Form of control
		Lectures (including supervised independent work)	supervised student independent work	practical	self-studies	
4 semester						
1.	Patient's examination methods	10	3	36	62	
1.1.	Introduction to the academic discipline «Propaedeutics of internal diseases». A brief history of the Internal Medicine. Medical ethics and deontology. Basic concepts of clinical medicine	-	-	2	2	Interview; tests; solving situational problem
1.2.	Clinical algorithm of patient's examination	-	-	2	3	Interview; tests; electronic tests
1.3.	Communications in medicine. Subjective method of patient's examination.	-	-	2	3	Interview; essays; tests; electronic tests; solving situational problems
1.1. – 1.3.	Introduction to the academic discipline «Propaedeutics of Internal Diseases». Clinical algorithm of patient's examination in internal medicine	2	1	-	2	Interview
1.4.	<i>Objective methods of patient's examination</i>	2	0,5	4	8	
	General and local inspection	2	0,5	-	2	Interview
	Objective methods of patient's examination. General inspection	-	-	2	3	Interview; tests; electronic tests; solving situational problem
	Objective methods of patient's examination. Local inspection	-	-	2	3	Interview; essays; tests; electronic tests; solving situational problems
1.5.	<i>Palpation. Types and rules</i>	2	0,5	6	10	

Palpation in patient's examination	2	0,5	-	1	Interview
Palpation: types and rules. Palpation of the head, neck, chest. Pulse examination	-	-	2	3	Interview; evaluation using electronic-mechanical simulators and robot simulators; tests; electronic tests; using simulators and robot evaluation using virtual simulators
Superficial palpation of the abdomen. Deep palpation of abdominal organs	-	-	2	3	Interview; solving situational problems; evaluation using electronic-mechanical simulators and robot simulators; tests; electronic tests; situational problems; using simulators and robot evaluation using virtual simulators
Palpation of lymph nodes. Palpation of the kidneys, bladder	-	-	2	3	Interview; solving situational problems; evaluation using electronic-mechanical simulators and robot simulators; tests; electronic tests; situational problems; using simulators and robot evaluation using virtual simulator
1.6. Percussion: types and rules	2	0,5	6	11	
Percussion in patient's examination	2	0,5	-	2	Interview
Percussion: types and rules. Comparative and topographic percussion of the lungs	-	-	2	3	Interview; solving situational problems; evaluation using electronic-mechanical simulators and robot simulators; tests; electronic tests; situational problems; using simulators and robot evaluation using virtual simulator
Percussion of the heart	-	-	2	3	Interview; solving situational problems; evaluation using electronic-mechanical simulators and robot simulators; tests; electronic tests; situational problems; using simulators and robot evaluation using virtual simulator

	Percussion of the liver and spleen	-	-	2	3	simulators; evaluation using virtual simulators
1.7.	<i>Auscultation Types and rule</i>	2	0,5	6	11	Interview; tests; electronic tests; solving situational problems; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators
	Auscultation in patient's examination	2	0,5	-	2	Interview
	Auscultation. Lung auscultation technique. Breath sounds of a healthy person	-	-	2	3	Interview; tests; electronic tests; solving situational problems; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulator
	The technique of heart auscultation. Heart sounds of a healthy person	-	-	2	3	Interview; tests; electronic tests; solving situational problems; evaluation using electronic-mechanical simulators and robot simulator
	Auscultation of vessels. Abdomen auscultation	-	-	2	3	Interview; tests; electronic tests; solving situational problems; evaluation using electronic-mechanical simulators and robot simulator
1.8.	Laboratory tests	-	-	2	3	Interview; tests; electronic tests; abstracts; solving situational problems; reports in practical classes

1.9.	Instrumental diagnostic methods	-	-	2	3	Interview; tests; electronic tests; abstracts; solving situational problems; reports in practical classes
1.10	<i>Clinical basis of electrocardiography. Electrocardiogram recording. Normal electrocardiogram interpretation</i>	-	-	4	6	
	Clinical basis of electrocardiography. Electrocardiogram recording. Normal electrocardiogram interpretation	-	-	2	3	Interview; tests; electronic tests; solving situational problems
	Final class on the section «Patient's examination methods»	-	-	2	3	Evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators. Credit
5 semester						
2.	General propeaedeutics (semitotics)	12	4	54	54	
2.1.	<i>Examination of patients with respiratory diseases</i>	2	1	9	7	
	Patient's examination and main clinical syndromes in case of respiratory diseases	2	1	-	1	Interview
	Examination of patients with respiratory diseases. Subjective method of examination: interview. Objective examination method: general inspection, inspection and palpation of the chest	-	-	3	2	Interview; tests; electronic tests; solving situational problems; evaluation using electronic-mechanical simulators and robot simulator
	Objective methods of patient's examination in case of respiratory diseases: lung percussion and lung auscultation. Respiratory tests and investigations	-	-	3	2	Interview; tests; electronic tests; solving situational problems; evaluation using electronic-mechanical simulators and robot simulator
	The main clinical syndromes in respiratory diseases	-	-	3	2	Interview; tests; electronic tests; solving situational problems;

2.2.	<i>Examination of patients with cardiovascular diseases</i>	2	0,5	9	8	evaluation mechanical simulators	using simulators and robot	electronic- and robot
	Patient's examination and main clinical syndromes in case of cardiovascular diseases	2	0,5	-	1	Interview		
	Examination of patients with cardiovascular diseases. Subjective method: interview. Objective method: general inspection, inspection of the heart area and peripheral vessels, palpation of the heart area, pulse examination	-	-	3	2	Interview; solving evaluation mechanical simulators; evaluation using virtual simulator	tests; situational using simulators and robot	electronic tests; solving situational problems; electronic- and robot
	Objective method of examination of patients with cardiovascular diseases: heart percussion and heart auscultation. Additional diagnostic methods in case of cardiovascular diseases	-	-	3	2	Interview; solving evaluation mechanical simulators; evaluation using virtual simulator	tests; situational using simulators and robot	electronic tests; solving situational problems; electronic- and robot
	The main clinical syndromes in cardiovascular diseases	-	-	3	3	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators	control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators	
2.3.	<i>Clinical and electrocardiographic signs of heart arrhythmias, conduction disorders, atrial and ventricular hypertrophy</i>	-	-	9	9			
	Clinical and electrocardiographic signs of heart arrhythmias	-	-	3	3	Interview; solving situational problems; abstracts	tests; electronic tests; solving situational problems; abstracts	
	Clinical and electrocardiographic signs of heart conduction disorders, atrial and ventricular hypertrophy	-	-	3	3	Interview; solving situational problems; abstracts	tests; electronic tests; solving situational problems; abstracts	

	Final class on the topics: «Examination of patients with respiratory diseases» and «Examination of patients with cardiovascular diseases»	-	-	3	3	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators
2.4.	<i>Examination of patients with gastrointestinal diseases</i>	2	0,5	9	10	
	Patient's examination and main clinical syndromes in case of gastrointestinal diseases	2	0,5	-	1	Interview
	Examination of patients with gastrointestinal diseases. Subjective method: interview. Objective method: general and local inspection	-	-	3	3	Interview; tests; electronic tests; solving situational problems; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulator
	Objective examination of patients with gastrointestinal diseases. Auscultation, percussion, palpation of the abdomen	-	-	3	3	Interview; tests; electronic tests; solving situational problems; evaluation using electronic-mechanical simulators and robot simulator
	Additional diagnostic methods, the main clinical syndromes in gastrointestinal diseases	-	-	3	3	Interview; tests; electronic tests; solving situational problems; evaluation using electronic-mechanical simulators and robot simulator
2.5.	<i>Examination of patients with kidney and urinary tract diseases</i>	2	0,5	6	7	
	Patient's examination and main clinical syndromes in case of kidney and urinary tract diseases	2	0,5	-	1	Interview

	Examination of patients with kidney and urinary tract diseases	-	-	3	3	Interview; solving situational problems; evaluation using electronic-mechanical simulators and robot simulator	tests; electronic tests; situational problems; using electronic-simulators and robot evaluation using virtual simulator
	Additional diagnostic methods, the main clinical syndromes in case of kidney and urinary tract diseases	-	-	3	3	Interview; solving situational problems; evaluation using electronic-mechanical simulators and robot simulator	tests; electronic tests; situational problems; using electronic-simulators and robot evaluation using virtual simulator
2.6.	Examination of patients with hematologic diseases	2	0,5	3	3	Interview; solving situational problems; evaluation using electronic-mechanical simulators and robot simulator	tests; electronic tests; situational problems; using electronic-simulators and robot evaluation using virtual simulator
2.7.	<i>Examination of patients with diseases of the thyroid gland, pancreas (diabetes mellitus). Examination of patients with musculoskeletal system diseases</i>	2	1	9	10		
	Examination of patients with diseases of the thyroid gland, pancreas (diabetes mellitus). Examination of patients with musculoskeletal system diseases	2	1	-	1	Interview	
	Examination of patients with diseases of the thyroid gland, pancreas (diabetes mellitus). Examination of patients with musculoskeletal system diseases	-	-	3	3	Interview; solving situational problems; evaluation using electronic-mechanical simulators and robot simulator	tests; electronic tests; situational problems; using electronic-simulators and robot evaluation using virtual simulator
	Final class on the topics «Examination of patients with gastrointestinal diseases» and «Examination of patients with kidney and urinary tract diseases»	-	-	3	3	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using	electronic tests; control surveys; assessment based on role-playing; evaluation using

	Final class on the topics «Examination of patients with hematologic diseases», «Examination of patients with diseases of the thyroid gland, pancreas (diabetes mellitus). Examination of patients with musculoskeletal system diseases»	-	-	3	3	3	electronic-mechanical simulators and robot simulators; evaluation using virtual simulators
	6 semester						
3	Special propaedeutics (special pathology)	10	3	48	50		
3.1-	Bronchial asthma. Chronic obstructive pulmonary disease. Pneumonia. Pleurisy. Acute and chronic respiratory failure	2	1	-	1	Interview	Evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators; credit
3.1.	Bronchial asthma. Chronic obstructive pulmonary disease	-	-	3	3	Interview; tests; electronic tests; solving situational problems; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulator	
3.2.	Pneumonia. Pleurisy	-	-	3	3	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators	
3.3.-	Acute rheumatic fever. Infective endocarditis. Heart valve diseases	2	0,5	-	1	Interview	
3.4.							
3.3.	Acute rheumatic fever. Infective endocarditis	-	-	3	3	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using	

3.4.	Heart valve diseases	-	-	3	4	virtual simulators Tests; electronic tests; control surveys; control papers; assessment based on role-playing; solving situational problems
3.5.	Arterial hypertension. Atherosclerosis	-	-	3	4	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators
3.6- 3.7	Ischemic heart disease. Angina pectoris. Myocardial infarction. Acute and chronic heart failure. Cardiac arrhythmias and conduction disorders	2	0,5	-	1	Interview
3.6.	Ischemic heart disease. Angina pectoris. Myocardial infarction	-	-	3	3	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators
3.7.	Acute and chronic heart failure. Cardiac arrhythmias and conduction disorders	-	-	3	3	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators
3.8- 3.9	Diseases of the digestive system: gastritis, stomach ulcer and duodenal ulcer. Liver diseases: hepatitis, liver cirrhosis	2	0,5	-	1	Interview
3.8.	Diseases of the digestive system: gastritis, stomach ulcer and duodenal ulcer. Management of gastrointestinal bleeding	-	-	3	3	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators

3.9.	Liver diseases: hepatitis, liver cirrhosis. The concept of the gallbladder and pancreas diseases		-	3	3	robot simulators; evaluation using virtual simulators Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators
3.10.	Kidney diseases: glomerulonephritis, pyelonephritis, acute kidney injury, chronic kidney disease	2	0,5	3	2	Interview; tests; electronic tests; control surveys; test papers; assessment based on role-playing; solving situational problems; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators
3.11.	Hematologic diseases: anemia, hemoblastosis	-	-	3	3	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators
3.12.	Thyroid diseases, diabetes mellitus. Management of hyperglycemic and hypoglycemic comas	-	-	3	3	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators
3.13.	Diseases of the musculoskeletal system: arthritis in case of connective tissue diseases (rheumatoid arthritis), infectious arthritis, metabolic arthritis (osteoarthritis, gout)	-	-	3	2	Tests; electronic tests; control surveys; control papers; assessment based on role-playing; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators

3.14.	Acute allergic diseases. Management of anaphylactic shock	-	-	3	2	virtual simulators Tests; control papers; assessment based on role-playing; solving situational problems
3.15.	Presentation of the educational case history	-	3	3	2	Presentation of the educational case history
3.16.	Final class on the section «Special propaedeutics»	-	-	3	3	Electronic tests; control surveys; control papers; evaluation using electronic-mechanical simulators and robot simulators; evaluation using virtual simulators. Examination
		32	10	138	166	

INFORMATION AND INSTRUCTIONAL UNIT

LITERATURE

Basic:

1. Пронько, Т. П. Пропедевтика внутренних болезней = Propedeutics of internal diseases : учеб. пособие. – Минск : Адукацыя і выхаванне, 2020. – 472 с.
2. Kovalyova, O. M. Propedeutics of internal medicine : Part 1. Diagnostics : textbook for English learning students of higher medical schools. – Vinnytsia : Nova Knyha, 2017. – 424 p.
3. Kovalyova, O. M. Propedeutics of internal medicine : Part 2. Syndromes and diseases : textbook for English learning students of higher medical schools. – Vinnytsia : Nova Knyha, 2017. – 264 p.

Additional:

4. Bickley, Lynn S. Bates' guide to physical examination & history taking : guest ed. R. M. Hoffman. – Philadelphia [etc.] : Wolters Kluwer, 2017. – 1034 p.
5. General propedeutics of internal diseases : lecture course (Общая пропедевтика внутренних болезней : курс лекций (на английском языке) / Л. М. Немцов. – 2-е изд. – Витебск: ВГМУ, 2016. – 175 с.
5. Special propedeutics of internal diseases : lecture course / comp. by L. M. Nemtsov. – 2-е изд. – Vitebsk : VSMU, 2016. – 318 p.
6. Арсентьева, И. Л. Симптоматология, диагностика, принципы лечения и профилактики острых аллергических заболеваний = Symptoms, diagnosis, principles of treatment and prevention of acute allergic diseases : учебно-методическое пособие / И. Л. Арсентьева, Э. А. Доценко, Н. Л. Арсентьева. – Минск : БГМУ, 2021. – 31 с.
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8. Шолкова, М. В. Практические навыки по обследованию органов желудочно-кишечного тракта = Manual in Gastrointestinal System Examination : учебно-методическое пособие / М. В. Шолкова, Э. А. Доценко, И. И. Бураков. – Минск : БГМУ, 2019. – 40 с.
9. Переверзева, Е. В. Симптоматология, диагностика, принципы лечения анемий, гемобластозов = Semeiotics, diagnosis, principles of treatment of anemia and leukemia : учебно-методическое пособие / Е. В. Переверзева, И. М. Змачинская. – Минск : БГМУ, 2019. – 16 с.
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METHODOLOGICAL RECOMMENDATIONS ON THE ORGANIZATION AND IMPLEMENTATION OF INDEPENDENT WORK OF STUDENTS IN THE ACADEMIC DISCIPLINE

The time allotted for independent work can be used by students on:

- preparation for lectures, practical classes;
- preparation for the test and exam in the academic discipline;
- elaboration of topics (questions) submitted for independent study;
- problem solving;
- performing research and creative tasks;
- preparation of thematic reports, abstracts, presentations;
- performing practical tasks;
- taking notes of educational literature;
- compilation of a review of scientific literature on a given topic;
- design of information and demonstration materials (stands, posters, graphs, tables, newspapers, etc.);
- compilation of a thematic selection of literary sources, Internet sources;
- preparation of tests for the organization of mutual control.

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

Main forms of supervised student independent work:

- preparation to practical classes;
- preparation and presentation of abstract;
- presentation of reports;
- computer testing;
- participation in active forms of education.

Control of supervised student independent work is carried out in the form of:

- test paper;
- final class, colloquium in the form of an oral interview, written work, testing;
- checking up abstracts, written reports;
- defense of educational assignments;
- assessment of an oral reply to a question, presentation, report or problem solving;
- individual interview.

LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms are used for competences assessment:

Oral form:

interview;
assessment based on role-playing;
solving situational problems.

Written form:

tests;
control surveys;
control papers;
essays.

Oral - written form:

presentation of the educational case history;
abstracts;
reports in practical classes;
credits;
exam.

Technical form:

electronic tests.

Simulation form:

evaluation using electronic-mechanical simulators and robotic simulators;
evaluation using virtual simulators.

LIST OF AVAILABLE TEACHING METHODS

Traditional method (lecture, practical classes);

Active (interactive) methods:

- Problem-Based Learning (PBL);
 - Team-Based Learning (TBL);
 - Case-Based Learning (CBL);
 - Research-Based Learning (RBL).
- training based on simulation technologies.

LIST OF PRACTICAL SKILLS

1. Inspection of the skin and subcutaneous tissues.
2. Inspection and palpation of the lymph nodes of the head and neck.
3. Inspection and palpation of supra -, subclavian and axillary lymph nodes.
4. Inspection and palpation of inguinal, femoral, and popliteal lymph nodes.
5. Inspection and palpation of the thyroid gland.
6. Inspection and palpation of the chest.
7. Palpation of chest pain points.
8. Comparative percussion of the lungs.
9. Assessment the border of the lower edge of the lungs.
10. Auscultation of the lungs.

11. Assessment of the pulse on the radial, carotid arteries, arteries of the dorsum of a foot.
12. Palpation of the apical impulse.
13. Assessment the limits of relative cardiac dullness.
14. Auscultation of the heart.
15. Superficial palpation of the abdomen.
16. Palpation of the sigmoid colon.
17. Palpation of the cecum.
18. Palpation of the transverse colon (with determination of the lower border of the stomach by the «rustle» method).
19. Assessment of the liver size according to M. G. Kurlov's method.
20. Palpation of the liver.
21. Palpation of kidneys in a vertical position.
22. Palpation of the kidneys in a horizontal position.
23. Assessment of the kidney tenderness, auscultation of the renal arteries, palpation of the ureteral points.
24. Palpation of the spleen.
25. Interpretation of the complete blood count.
26. Interpretation of the urinalysis.
27. Interpretation of biochemical blood analysis.
28. Interpretation of the sputum test.
29. Interpretation of pleural fluid test.
30. Interpretation of Nechiporenko's urine test.
31. Interpretation of Zimnitsky's urine test.
32. Interpretation of the chest X-ray.
33. Interpretation of the electrocardiogram.

LIST OF EQUIPMENT USED

1. Mannequin for CPR «Mini-Ann».
2. Ambu breathing bag.
3. Multimedia projector/TV.
4. Peak flowmeter.
5. Pulse oximeter.
6. Mechanical tonometer.
7. A container with a lid for collecting household waste in healthcare organizations.
8. Phonendoscope.
9. Electrocardiograph.
10. Manikin «Physico».
11. Auscultation manikin (heart and lung auscultation)
12. Auscultation simulator.
13. Abdominal palpation manikin.

LIST OF LECTURES

4th semester

1. Introduction to the academic discipline «Propaedeutics of Internal Diseases». Clinical algorithm of patient's examination in internal medicine.
2. General and local inspection.
3. Palpation in patient's examination.
4. Percussion in patient's examination.
5. Auscultation in patient's examination.

5th semester

1. Patient's examination and main clinical syndromes in case of respiratory diseases.
2. Patient's examination and main clinical syndromes in case of cardiovascular diseases.
3. Patient's examination and main clinical syndromes in case of gastrointestinal diseases.
4. Patient's examination and main clinical syndromes in case of kidney and urinary tract diseases.
5. Examination of patients with hematologic diseases.
6. Examination of patients with diseases of the thyroid gland, pancreas (diabetes mellitus). Examination of patients with musculoskeletal system diseases.

6th semester

1. Bronchial asthma. Chronic obstructive pulmonary disease. Pneumonia. Pleurisy. Acute and chronic respiratory failure.
2. Acute rheumatic fever. Infectious endocarditis. Heart valve diseases.
3. Ischemic heart disease. Angina pectoris. Myocardial infarction. Acute and chronic heart failure. Cardiac arrhythmias and conduction disorders.
4. Diseases of the digestive system: gastritis, stomach ulcer and duodenal ulcer. Liver diseases: hepatitis, liver cirrhosis.
5. Kidney diseases: glomerulonephritis, pyelonephritis, acute kidney injury, chronic kidney disease.

LIST OF PRACTICAL CLASSES

4th semester

1. Introduction to the academic discipline «Propaedeutics of internal diseases». A brief history of the Internal Medicine. Medical ethics and deontology. Basic concepts of clinical medicine
2. Clinical algorithm of patient's examination.
3. Communications in medicine. Subjective method of patient's examination.
4. Objective methods of patient's examination. General inspection.
5. Objective methods of patient's examination. Local inspection.
6. Palpation: types and rules. Palpation of the head, neck, chest. Pulse examination.

7. Superficial palpation of the abdomen. Deep palpation of abdominal organs.
8. Palpation of lymph nodes. Palpation of the kidneys, bladder.
9. Percussion: types and rules. Comparative and topographic percussion of the lungs.
10. Percussion of the heart.
11. Percussion of the liver and spleen.
12. Auscultation. Lung auscultation technique. Breath sounds of a healthy person.
13. The technique of heart auscultation. Heart sounds of a healthy person.
14. Auscultation of vessels. Abdomen auscultation.
15. Laboratory tests.
16. Instrumental diagnostic methods.
17. Clinical basis of electrocardiography. Electrocardiogram recording. Normal electrocardiogram interpretation.
18. Final lesson on the section «Patient's examination methods»

5th semester

1. Examination of patients with respiratory diseases. Subjective method of examination: interview. Objective examination method: general inspection, inspection and palpation of the chest.
2. Objective methods of patient's examination in case of respiratory diseases: lung percussion and lung auscultation. Respiratory tests and investigations.
3. The main clinical syndromes in case of respiratory diseases.
4. Examination of patients with cardiovascular diseases. Subjective method: interview. Objective method: general inspection, inspection of the heart area and peripheral vessels, palpation of the heart area, pulse examination.
5. Objective method of examination of patients with cardiovascular diseases: heart percussion and heart auscultation. Additional diagnostic methods in case of cardiovascular diseases.
6. The main clinical syndromes in cardiovascular diseases.
7. Clinical and electrocardiographic signs of heart conduction disorders, atrial and ventricular hypertrophy.
8. Clinical and electrocardiographic signs of heart arrhythmias.
9. Final class on the topics: «Examination of patients with respiratory diseases» and «Examination of patients with cardiovascular diseases».
10. Examination of patients with gastrointestinal diseases. Subjective method: interview. Objective method: general and local inspection.
11. Objective examination of patients with gastrointestinal diseases. Auscultation, percussion, palpation of the abdomen.
12. Additional diagnostic methods, the main clinical syndromes in gastrointestinal diseases.
13. Examination of patients with kidney and urinary tract diseases.
14. Additional diagnostic methods, the main clinical syndromes in case of kidney and urinary tract diseases.
15. Examination of patients with hematologic diseases.

16. Examination of patients with diseases of the thyroid gland, pancreas (diabetes mellitus). Examination of patients with musculoskeletal system diseases.

17. Final lesson on the topics «Examination of patients with gastrointestinal diseases» and «Examination of patients with kidney and urinary tract diseases».

18. Final class on the topics «Examination of patients with hematologic diseases», «Examination of patients with diseases of the thyroid gland, pancreas (diabetes mellitus)», «Examination of patients with musculoskeletal system diseases».

6th semester

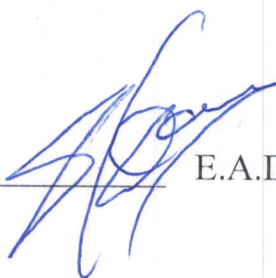
1. Bronchial asthma. Chronic obstructive pulmonary disease.
2. Pneumonia. Pleurisy.
3. Acute rheumatic fever. Infectious endocarditis.
4. Heart valve diseases.
5. Arterial hypertension. Atherosclerosis.
6. Ischemic heart disease. Angina pectoris. Myocardial infarction.
7. Acute and chronic heart failure. Cardiac arrhythmias and conduction disorders.
8. Diseases of the digestive system: gastritis, stomach ulcer and duodenal ulcer. Management of gastrointestinal bleeding.
9. Liver diseases: hepatitis, liver cirrhosis. The concept of the gallbladder and pancreas diseases.
10. Kidney diseases: glomerulonephritis, pyelonephritis, acute kidney injury, chronic kidney disease.
11. Hematologic diseases: anemia, hemoblastosis.
12. Thyroid diseases, diabetes mellitus. Management of hyperglycemic and hypoglycemic comas.
13. Diseases of the musculoskeletal system: arthritis in case of connective tissue diseases (rheumatoid arthritis), infectious arthritis, metabolic arthritis (osteoarthritis, gout).
14. Acute allergic diseases. Management of anaphylactic shock.
15. Presentation of the educational case history.
16. Final class on the section «Special propaedeutics».

**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 (date, protocol #)
1. Internal Diseases	1st Department of Internal Diseases	There are no offers	protocol # 1 of 30.08.2022
	2nd Department of Internal Diseases	There are no offers	protocol # 1 of 30.08.2022
	Department of Cardiology and Internal Diseases	There are no offers	protocol # 1 of 30.08.2022
2. Outpatient Therapy	Department of Outpatient Therapy	There are no offers	protocol # 1 of 30.08.2022


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

Dean of the Medical Faculty for International Students of the Educational Institution «Belarusian State Medical University»

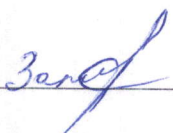
15.11.2022



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