

MINISTRY OF HEALTH OF UKRAINE  
KHARKIV NATIONAL MEDICAL UNIVERSITY

Department of Internal Medicine № 3 and Endocrinology  
Academic year 2021-2022

**SYLLABUS OF THE EDUCATIONAL COMPONENT**  
**"Internal medicine, including endocrinology"**

Normative educational component

The form of education is full-time

Area of Knowledge "22" Healthcare

Specialty "222" Medicine

Specialization (if available) \_\_\_\_\_


Educational and professional program of the second (master's) level of higher education

Course IV

The syllabus of the discipline was considered at the meeting of the Department of Internal Medicine № 3 and Endocrinology

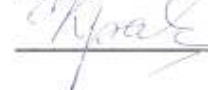
Protocol from  
"30" August 2021 № 14

Head of Department

 prof. L.V. Журавльова

Approved by the methodical commission of KhNMU on problems of therapeutic profile  
Protocol from  
"31" August 2021 № 1

Head

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Kharkiv – 2021

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15.00 <http://distance.knmu.edu.ua/mod/bigbluebuttonbn/view.php?id=11478>.

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**Website of the department: <http://vnmed3.kharkiv.ua/>.**

Class schedule: Monday, Tuesday, Wednesday, Thursday, Friday (845-1220 - first shift and 1225-1550 - second shift, according to the schedule).

Location: classrooms of the Department of Internal Medicine №3 and endocrinology on the basis of KNP CHOR "Regional Clinical Hospital" (Kharkiv, 13 Nezalezhnosti Ave.).

## INTRODUCTION

**The syllabus of the discipline** "Internal Medicine, including endocrinology" is compiled in accordance with the educational-professional program (hereinafter - OPP) "Medicine" and the Standard of Higher Education of Ukraine (hereinafter - the Standard), the second (master's) level, fields of knowledge 22 " Health care ”.

### **Description of the discipline (abstract).**

According to the curriculum, the training of doctors at the educational and qualification level "Master" of the study discipline "Internal Medicine (including endocrinology)" is carried out in the IV year (7-8 semesters).

The discipline is structured into five sections:

1. Basics of diagnosis, treatment and prevention of diseases of the endocrine system.
2. Basics of diagnosis, treatment and prevention of diseases of the digestive system.
3. Basics of diagnosis, treatment and prevention of respiratory diseases.
4. Basics of diagnosis, treatment and prevention of diseases of the blood and blood-forming organs.
5. General issues of internal medicine.

Types of classes according to the curriculum are:

- a) lectures;
- b) practical classes;
- c) independent work of students;
- d) consultations.

The subject of study of Internal Medicine as a discipline is the study of students of propaedeutics of internal medicine, propaedeutics of other clinical disciplines (pediatrics, general surgery), as well as other basic disciplines (medical biology, medical and biological physics, bioorganic and biological chemistry, histology, cytology, cytology, human anatomy, pathomorphology, physiology and pathophysiology, microbiology, virology and immunology, radiology) and integrates with these disciplines. It lays the foundations for students to acquire knowledge of specialized clinical professional and practical disciplines, as well as develops the ability to apply knowledge of pathology of internal organs in the process of further training and professional activity in accordance with the principles of evidence-based medicine.

### **Interdisciplinary connections**

Internal medicine as a discipline: a) is based directly on the study by students of propaedeutics of internal medicine, propaedeutics of other clinical disciplines (pediatrics, general surgery), as well as other basic disciplines (medical biology, medical and biological physics, bioorganic and biological chemistry, histology and embryology, human anatomy, pathomorphology, physiology and pathophysiology, microbiology, virology and immunology, radiology) and integrates with these disciplines;

b) lays the foundation for students to acquire knowledge in specialized clinical

professional and practical disciplines;

c) forms the ability to apply knowledge of pathology of internal organs in the process of further training and professional activity in accordance with the principles of evidence-based medicine.

**Prerequisites and co-requisites of the discipline.** Anatomy, physiology, histology, pathological anatomy, pathological physiology, propaedeutics of internal diseases; clinical pharmacology, surgery, pediatrics.

**Moodle page** <http://31.128.79.157:8083/course/index.php?categoryid=14>.

## **1. PURPOSE AND TASKS OF THE COURSE**

**1.1.** The purpose of studying the discipline "Internal Medicine, including endocrinology" is to acquire and deepen the knowledge, skills, abilities and other competencies in internal medicine required in professional activities, which are established on the basis of educational and professional program.

**1.2.** The main tasks of studying the discipline "Internal Medicine, including endocrinology" are the acquisition by students of competencies in accordance with the general and professional competencies of the educational-professional program "Medicine" of the second (master's) level of higher education in 222 Medicine. To master the qualification "Master of Medicine" is necessary: mastery of survey skills, the ability to determine the necessary list of laboratory and instrumental studies and evaluate their results, preliminary and clinical diagnosis of the disease, determining the necessary mode of work and rest, nutrition in the treatment of diseases, defining principles and the nature of disease treatment, medical manipulations, diagnosing emergencies and providing emergency care, medical records, the ability to apply knowledge in practical situations, understanding the subject area and professional activities, the ability to adapt and act in a new situation, making informed decisions, ability work in a team, act socially responsibly and consciously.

**1.3.** Competences and learning outcomes, the formation of which is facilitated by the discipline.

**1.3.1.** The study of the discipline provides students with the acquisition of competencies:

**integral:**

ability to solve typical and complex specialized tasks and practical problems in professional activities in the field of health care, or in the learning process, which involves research and / or innovation and is characterized by complexity and uncertainty of conditions and requirements;

**general:**

- ability to apply knowledge in practical situations;
- knowledge and understanding of the subject area and understanding of the profession;
- ability to exercise self-regulation and lead a healthy lifestyle;
- ability to adapt and act in a new situation;
- ability to choose a communication strategy;



- ability to work in a team;
- interpersonal skills;
- ability to communicate in the native language both orally and in writing;
- ability to communicate in another language;
- skills of using information and communication technologies;
- ability to abstract thinking, analysis and synthesis;
- ability to learn and be modernly trained;
- ability to apply knowledge in practical situations;
- ability to evaluate and ensure the quality of work performed;
- determination and persistence in terms of tasks and responsibilities;
- ability to act socially responsible and socially conscious;
- the desire to preserve the environment.

**special (professional, subject):**

- ability to establish a preliminary clinical diagnosis of the disease;
- skills of collecting information about the patient;
- ability to evaluate the results of laboratory and instrumental research;
- ability to determine the principles and nature of treatment of diseases;
- ability to diagnose emergencies;
- ability to carry out medical and evacuation measures;
- ability to determine the tactics of emergency medical care
- skills of providing emergency medical care
- skills of performing medical manipulations;
- ability to determine the required mode of work and rest in the treatment of diseases;
- ability to determine therapeutic nutrition in the treatment of diseases;
- ability to determine the tactics of contingent of persons subject to dispensary supervision;
- ability to conduct an examination of working capacity;
- ability to keep medical records;
- ability to process state, social, economic and medical information;
- ability to carry out measures for the organization and integration of medical care;
- ability to conduct epidemiological and medical-statistical studies of public health;
- ability to assess the impact of the environment on the health of the population (individual, family, population);
- ability to assess the impact of socio-economic and biological determinants on the health of the individual, family, population;
- ability to analyze the activities of a doctor, department, health care institution;
- ability to take measures to ensure the quality and safety of medical care;
- ability to take measures to improve the efficiency of resource use;
- ability to market medical services.

The study of the discipline provides students with the following program learning outcomes:

PRN 1. Possess general and special fundamental and professionally-oriented knowledge, skills, abilities, competencies necessary to perform typical professional tasks related to activities in the medical field in the relevant position.

PRN 2. To have knowledge about psychophysiological features of a person, human health, health support, disease prevention, human treatment, public health.

PRN 3. Apply the acquired knowledge, skills and understanding to solve typical problems of the doctor, the scope of which is provided by lists of syndromes and symptoms, diseases, emergencies, laboratory and instrumental studies, medical manipulations.

PRN 4. Collect information about the patient.

PRN 5. Evaluate the results of surveys, physical examinations, laboratory and instrumental research data.

PRN 6. Establish a preliminary clinical diagnosis of the disease.

PRN 7. To determine the nature, principles of treatment of diseases.

PRN 8. To determine the necessary diet, mode of work and rest in the treatment of diseases.

PRN 9. To determine the tactics of contingent of persons subject to dispensary supervision.

PRN 10. To diagnose emergencies, determine the tactics of emergency medical care.

PRN 15. Perform medical manipulations.

PRN 17. Be able to keep medical records, process state, social and medical information.

PRN 18. Assess and support human health, taking into account the impact of the environment and other health factors.

PRN 20. Apply the acquired knowledge about the existing health care system to optimize their own professional activities and participate in solving practical problems of the industry.

PRN 21. Adhere to the code of ethics of the doctor, which ensures the formation of a specialist with appropriate personal qualities.

**1.3.2.** The study of the discipline provides students with the following **social skills (Soft skills)**: stress resistance, the ability to adapt to the situation, sociability, the ability to work in a team, the desire to learn, critical thinking, the ability to plan.

## 2. INFORMATION SCOPE OF THE COURSE

Name of indicators	Field of knowledge, direction of training, educational and qualification level	Characteristics of the discipline	
		full-time education	evening form of education

Number of credits – 7	Branch of knowledge 22 "Health" (code and name of the field of knowledge)	Normative (optional)	
Total number of hours - 210	Specialty: 222 "Medicine" (code and name of the specialty)	<b>Year of preparation:</b>	
		4th	--
		<b>Semester</b>	
		7, 8th	--
Hours for day (or evening) form of study: classroom - 170 independent student work - 40	Education level: The second (master's) level	<b>Lectures</b>	
		40 hours	--
		<b>Practical, seminar</b>	
		130 hours	--
		<b>Laboratory</b>	
		-	-
		<b>Individual work</b>	
		40 hours	--
<b>Individual tasks: hours</b>			
Type of control: differential test			

## 2.1. Description of the discipline

### 2.2.1 Lectures

№	Topic	Amount of hours	Type of lecture
1	Gastroesophageal reflux disease	2	Online
2	Dyspepsia and chronic gastritis	2	Online
3	Peptic ulcer of the stomach and duodenum	2	Online
4	Inflammatory bowel disease. Irritable bowel syndrome	2	Online.
5	Gallstone disease, chronic cholecystitis and functional biliary disorders	2	Online
6	Chronic hepatitis	2	Online
7	Cirrhosis of the liver	2	Online
8	Chronic pancreatitis	2	Online
9	Diabetes. Modern classification, etiology, pathogenesis, clinic, diagnosis. Chronic complications of diabetes	2	Online
10	The latest methods of treatment of patients with diabetes. Oral hypoglycemic agents, modern insulin preparations and its analogues	2	Online
11	Thyroid disease. Diagnosis, differential diagnosis, prevention and treatment of goiter	2	Online
12	Diseases of the adrenal glands. Chronic adrenal insufficiency. Hormone-active tumors	2	Online
13	Diseases of the hypothalamic-pituitary system. Clinic, diagnosis, treatment.	2	Online

14	Anemia	2	Online
15	Acute and chronic leukemias	2	Online
16	Chronic obstructive pulmonary disease	2	Online
17	Bronchial asthma	2	Online.
18	Pneumonia	2	Online
19	Principles of evidence-based medicine	2	Online
20	Diagnosis and treatment of diseases of the internal organs in the elderly	2	Online
In general		40	

### 2.2.2 Seminars

№	Topic	Amount of hours	Methods of teaching	Forms of control
1				
2				
	Hours in general			

### 2.2.3 Practical training

№	Topic	Amount of hours	Methods of teaching	Forms of control
1	Consideration of the scheme of the medical history. Curation of patients. Gastroesophageal reflux disease.	5	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
2	Dyspepsia. Chronic gastritis.	5	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
3	Peptic ulcer of the stomach and duodenum.	5	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)

4	Celiac disease and other enteropathies.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
5	Inflammatory bowel disease. Irritable bowel syndrome.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
6	Gallstone disease, chronic cholecystitis and functional biliary disorders.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
7	Chronic hepatitis.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
8	Cirrhosis of the liver.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
9	Chronic pancreatitis.	5	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
10	Final class on gastroenterology.	4	Presentations, videos, guidelines for teachers and	Current control (survey, testing)



			students for full-time and distance learning	
11	Diabetes mellitus, classification, etiology, pathogenesis, clinical picture, diagnosis.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
12	Acute and chronic complications of diabetes. Features of the clinical course and treatment of diabetes mellitus in surgical patients and during pregnancy.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
13	Type 1 and type 2 diabetes mellitus, modern methods of treatment.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
14	Iodine deficiency diseases of the thyroid gland. Signs of endemic goiter according to the WHO. Clinical picture, diagnosis, prevention and treatment. Hypothyroidism and thyroiditis. Classification, diagnosis, clinical picture, treatment.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
15	Thyrotoxicosis. Clinical forms. Diagnosis, treatment. Thyroid cancer. Classification, clinical picture, diagnosis, treatment. Diseases of parathyroid glands.	5	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
16	Diseases of the adrenal glands. Chronic insufficiency of the adrenal cortex. Etiology, pathogenesis, clinical picture, diagnosis, prevention and	5	Presentations, videos, guidelines for teachers and students for full-time and	Current control (survey, testing)

	treatment. Hormonally active tumors of the adrenal glands		distance learning	
17	Diseases of the hypothalamic-pituitary system. Diseases of the gonads.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
18	Obesity and its consequences.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
19	Final class on endocrine diseases.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
20	Chronic obstructive pulmonary disease.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
21	Bronchial asthma.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
22	Pneumonia.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
23	Pleurisy.	4	Presentations, videos,	Current control

			guidelines for teachers and students for full-time and distance learning	(survey, testing)
24	Infectious and destructive lung diseases.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
25	Respiratory failure	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
26	Final class on respiratory diseases.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
27	Hemophilia and thrombocytopenic purpura.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
28	Anemia.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
29	Acute leukemia.	4	Presentations, videos, guidelines for teachers and students for full-time and	Current control (survey, testing)

			distance learning	
30	Chronic leukemia.	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
31	Final class on blood and hematopoietic diseases	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
Hours in general		130		

#### 2.2.4. Laboratory classes

№	Topic	Amount of hours	Methods of teaching	Forms of control
1				
2				
	Hours in general			

#### 2.2.5. Individual work

№	Topic	Amount of hours	Methods of teaching	Forms of control
1	- Preparation for a practical lesson on the topic №1 "Diabetes mellitus, classification, etiology, pathogenesis, clinical picture, diagnosis". - Mastering the skills to analyze the data of laboratory research methods (glucose tolerance test, glycemic profile, C-peptide, HbA1c, lipids).	3	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
2	- Preparation for a practical lesson on the topic №2 "Type 1 and type 2 diabetes, modern methods of therapy." - Mastering the skills of interpreting the glycemic profile, the level of glycosylated hemoglobin, prescribing basic	3	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)

	hypoglycemic drugs.			
3	<p>- Preparation for a practical lesson on the topic №3 "Acute and chronic complications of diabetes. Features of the course and treatment of diabetes mellitus in surgical patients during pregnancy.</p> <p>- Mastering the skills of providing medical care to patients with ketoacidosis, diabetic ketoacidotic and hypoglycemic insects.</p>	3	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
4	<p>- Preparation for a practical lesson on the topic №4 "Iodine deficiency diseases of the thyroid gland. Signs of endemic terrain according to the WHO. Clinic, diagnosis, prevention and treatment. Hypothyroidism and thyroiditis. Classification, diagnosis, clinic, treatment".</p> <p>- Mastering the skills of interpreting the data of hormonal examination of the thyroid gland (TSH, T3, T4, ATPO).</p>	2	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
5	<p>- Preparation for a practical lesson on the topic №5 "Thyrotoxicosis. Clinical forms. Diagnosis, treatment. Thyroid cancer. Classification, clinic, diagnosis, treatment. Diseases of the thyroid gland.</p> <p>-Mastering the skills of interpreting the data of hormonal examination of the thyroid gland (TSH, T3, T4, calcitonin, ATPO, antibodies to TSH receptors, thyroglobulin).</p>	2	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
6	<p>- Preparation for a practical lesson on the topic №6 "Diseases of the adrenal glands. Chronic insufficiency of the adrenal cortex. Etiology, pathogenesis, clinic, diagnosis, prevention and treatment. Hormonally active tumors of the adrenal glands.</p> <p>-Mastering the skills of interpreting the data of hormonal examination of the adrenal glands (ACTH, cortisol, aldosterone, renin, blood electrolytes and metanephrines in the urine).</p>	2	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
7	<p>-Preparation for a practical lesson on the topic №7 "Diseases of the hypothalamic-pituitary system. Adiposity. Diseases of the gonads.</p> <p>-Mastering the skills of determining the degree of obesity by BMI.</p> <p>-Mastering the skills of interpretation of hormonal examination data (STG, IGF-1, prolactin, gonadotropins, vasopressin) and urine analysis according to Zymnytsky.</p>	2	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
8	<p>- Preparation for a practical lesson on the topic №18 "Gastroesophageal reflux</p>	1	Presentations, videos, guidelines	Current control



	<p>disease".</p> <ul style="list-style-type: none"> <li>-Mastering the skills of interpretation of 24-hour esophageal pH monitoring data on the topic.</li> <li>-Mastering the skills of interpreting the endoscopic picture of the esophagus on the topic.</li> </ul>		for teachers and students for full-time and distance learning	(survey, testing)
9	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №19 "Dyspepsia. Chronic gastritis".</li> <li>- Mastering the skills of interpreting the results of respiratory tests with a stable isotope (<sup>13</sup>C-urea).</li> <li>- Mastering the skills of interpretation of the study of acid production (intra-gastric topographic express pH-metry).</li> <li>- Mastering the skills of interpreting the results of esophagogastroduodenoscopy with a biopsy on the topic.</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
10	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №20 "Peptic ulcer of the stomach and duodenum."</li> <li>- Mastering the skills of interpreting the endoscopic picture of the stomach and duodenum on the topic.</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
11	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №21 "Celiac disease and other enteropathies".</li> <li>- Mastering the skills of interpreting the results of the coprocytogram.</li> <li>- Mastering the skills of interpretation of the results of enzyme-linked immunosorbent assay of antibodies to tissue transglutaminase and gliadin peptides in celiac disease (ELISA method), hydrogen tests.</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
12	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №22 "Inflammatory bowel disease. Irritable bowel syndrome.</li> <li>- Mastering the skills of interpreting the endoscopic picture of the colon on the topic.</li> <li>- Mastering the skills of interpreting the results of fecal calprotectin.</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
13	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №23 "Gallstone disease, chronic cholecystitis and functional disorders of the biliary tract."</li> <li>- Mastering the skills of interpreting ultrasound data of the liver, bile ducts and gallbladder on the topic.</li> <li>- Mastering the skills of interpretation of microscopic and biochemical data of bile obtained by multi-moment duodenal</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)

	sounding.			
14	<ul style="list-style-type: none"> <li>- - Preparation for a practical lesson on the topic №24 "Chronic hepatitis".</li> <li>- - Mastering the skills of interpreting data of general and biochemical analysis of blood (total protein, protein fractions, bilirubin and its fractions, activity of ALT, AST, alkaline phosphatase).</li> <li>- Mastering the skills of evaluating the results of serological blood tests (serum markers of viral and autoimmune hepatitis; polymerase chain reaction, qualitative and quantitative analysis; genotyping of the virus).</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
15	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №25 "Cirrhosis of the liver".</li> <li>- Mastering the skills of interpreting the results of biochemical analysis (ALT, AST, GGTP, LF, bilirubin and its fractions, proteins and protein fractions, glucose, coagulogram).</li> <li>- Mastering the skills of interpretation of ultrasound data of the liver, gallbladder, pancreas, spleen and vessels of the portal system (Doppler) on the topic.</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
16	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №26 "Chronic pancreatitis".</li> <li>- Mastering the skills of interpreting the data of general analysis of blood, urine (<math>\alpha</math>-amylase), biochemical analysis of blood (elastase 1, <math>\alpha</math>-amylase), fecal analysis for fecal elastase 1.</li> <li>- Mastering the skills of evaluating the results of the study of carbohydrate metabolism (glucose, insulin, C-peptide, pancreatic polypeptide, blood glucagon; test with sugar load, galactose, D-xylose).</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
17	<ul style="list-style-type: none"> <li>- - Preparation for a practical lesson on the topic №12 "Chronic obstructive pulmonary disease".</li> <li>- Mastering the skills of interpretation of sputum analysis (microscopic, bacteriological, bacterioscopic examination), determination of sensitivity to antibiotics.</li> <li>- Mastering the skills of interpreting the indicators of the function of external respiration on the topic.</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
18	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №13 "Bronchial asthma".</li> <li>- Mastering the skills of interpretation of sputum analysis (microscopic,</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-	Current control (survey, testing)

	<p>bacteriological, bacterioscopic examination).</p> <ul style="list-style-type: none"> <li>- Mastering the skills of interpreting the data of the function of external respiration on the topic.</li> </ul>		time and distance learning	
19	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №14 "Pneumonia".</li> <li>- Mastering the skills of interpretation of sputum analysis (microscopic, bacteriological, bacterioscopic examination), determination of sensitivity to antibiotics.</li> <li>- Mastering the skills of interpreting the data of sonography and radiography of the thoracic cavity in two projections on the topic.</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
20	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №15 "Pleurisy".</li> <li>- Mastering the skills of interpreting the data of sonography and radiography of the thoracic cavity on the topic.</li> <li>- Mastering the skills of interpreting the analysis of pleural fluid (microscopic, bacteriological and bacterioscopic examination).</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
21	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №16 "Infectious and destructive lung diseases".</li> <li>- Mastering the skills of interpreting radiographic data of the thoracic cavity on the topic.</li> <li>- Mastering the skills of interpretation of general blood tests, sputum analysis (bacteriological, microscopic, determination of sensitivity to antibiotics).</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
22	<ul style="list-style-type: none"> <li>- Preparation for a practical lesson on the topic №8 "Hemophilia and thrombocytopenic purpura".</li> <li>- Mastering the skills of interpreting a general blood test.</li> <li>- Mastering the method of determining blood type.</li> <li>- Mastering the skills of interpretation of the coagulogram in hemophilia.</li> </ul>	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)

23	- - Preparation for a practical lesson on the topic №9 "Anemia". - - Mastering the skills of interpreting a general blood test. - - Mastering the skills of interpreting the results of iron metabolism studies (serum iron, total serum iron binding capacity, iron transferrin saturation, ferritin level). - - Mastering the skills of evaluating bone marrow punctate data.	2	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
24	- - Preparation for a practical lesson on the topic №10 "Acute leukemia". - - Mastering the skills of interpreting the general analysis of blood and myelogram. - - Mastering the method of transfusion of blood components and blood substitutes. - - Evaluation of cytochemical data.	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
25	- - Preparation for a practical lesson on the topic №11 "Chronic leukemias". - - Mastering the skills of interpreting the general analysis of blood and myelogram. - - Mastering the skills of interpreting the data of X-ray examination of bones on the topic.	1	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
26	Preparation and writing of medical history (2)	4	Presentations, videos, guidelines for teachers and students for full-time and distance learning	Current control (survey, testing)
	Together	40		

### 3. EVALUATION CRITERIA

**3.1.** Evaluation of educational success of students is carried out on the basis of the current "Instructions for evaluating the educational activities of students of KhNMU".

It is recommended to conduct practical classes with the inclusion of:

- 1) control of the initial level of knowledge by means of the tests made in a format of a question with 5 options of the answer, from which 1 is correct;
- 2) examination of students on the topic of the lesson;
- 3) management of 1-2 patients with diseases and conditions corresponding to the subject of the lesson, followed by discussion of the correctness of diagnosis, differential diagnosis and treatment with the use of evidence-based medicine and in accordance with National and European guidelines and protocols;
- 4) consideration of the results of additional research methods (laboratory and instrumental) used in the diagnosis and differential diagnosis, consideration of which is provided by the topic of practical training;
- 5) control of the final level of knowledge on the test tasks made in the format of KROK-2.

Assimilation of the topic (current control) is controlled in a practical lesson in accordance with specific goals, assimilation of semantic sections - in practical final lessons. It is recommended to use the following tools to assess the level of preparation of students: computer tests, solving situational problems, conducting laboratory research and interpretation and evaluation of their results, analysis and evaluation of instrumental research and parameters characterizing human body functions, control of practical skills.

**Current control (CC)** is conducted by the teacher of the academic group at the last lesson and provides for the consideration of current activity. Assimilation of the topic (current control) is controlled in a practical lesson in accordance with specific goals. The following tools are used to assess the level of preparation of students: computer tests, solving situational problems, interpretation and evaluation of laboratory results, analysis and evaluation of instrumental research results and parameters that characterize the functions of the human body, control the acquisition of practical skills. The final lesson (FL) must be conducted in accordance with the program of the discipline during the semester on schedule, during classes. Acceptance of software is carried out by the teacher of the academic group. Assessment is carried out according to the traditional 4-point system: "excellent", "good", "satisfactory" and "unsatisfactory". The conversion of the average grade for current educational activities into a multi-point scale is carried out in accordance with the "Instructions for assessing the educational activities of students..." or the average grade (to the nearest hundredth) for current activity teacher automatically receives using the electronic journal. The minimum number of points that a student must score for the current activity during the study of the section is 70 points, the maximum number of points - 120 points.

**Assessment of students' independent work.** Independent work of students, which is provided by the topic of the lesson along with classroom work, is assessed during the current control of the topic in the relevant lesson.

Assessment of individual student tasks is carried out under the conditions of the teacher's tasks (report of the abstract in a practical lesson, report with a presentation in a practical lesson, report at scientific and practical conferences of the department, university, writing abstracts, articles, participation in the All-Ukrainian Olympiad). Points (not more than 10) are added as incentives. The total amount of points for current educational activities may not exceed 120 points.

The test for the discipline in the autumn semester is conducted by the teacher of the academic group at the last lesson. According to the results of the semester, the teacher automatically receives the average grade (to the nearest hundredth) for the current activity with the help of the electronic journal and translates it into points with the help of (Table 1). The grade is determined in points from 70 to 120 and marked - "worked out", "not worked out".

**Organization of final control** - differentiated offset. Admission to the differentiated test is determined in points of current educational activity, namely: min - 70, max - 120 points. Differentiated credit is made by the teacher of the academic group or on commission in case of disagreement of the student with the results of certification. If the exam is not passed, the dates of rescheduling during



the holidays are set, until the beginning of the next semester. Directly differentiated credit is estimated from - 50 to - 80 points.

**Conducting a differentiated test:**

1. Solving a package of test tasks, which includes basic test tasks of "KROK -2" in the amount of 30 tests. Evaluation criterion - 95-100% of correctly solved tasks, "passed - failed".

2. Assessment of the acquisition of practical skills (assessment criteria - "performed" or "failed").

3. Assessment of theoretical knowledge on the tickets drawn up at the department, which contain five theoretical questions from the sections of the discipline, which were studied during the academic year, the criteria for assessing theoretical knowledge according to table 1.

**Table 1. Assessment of theoretical knowledge**

Number of questions	«5»	«4»	«3»	Oral answer for questions, which include the theoretical part of the discipline	For each answer the student receives from 10 to 16 points, which corresponds to: "5" - 16 points; "4" - 13 points; "3" - 10 points.
1	16	13	10		
2	16	13	10		
3	16	13	10		
4	16	13	10		
5	16	13	10		
	80	65	50		

**Grade from the discipline**

The grade in the discipline is defined as the sum of points: the arithmetic mean of points for 2 semesters, during which the discipline was studied, which are translated into a 120-point scale ECTS (Table 2) in the autumn and spring semesters. Then the number of points that the student received during the differentiated test is added to them.

The maximum number of points that a student can score for studying the discipline - 200 points, including the maximum number of points for current educational activities - 120 points. The minimum number of points is 120.

**Table 2. Correspondence of estimates on a 200-point scale, four-point (national) scale and ECTS scale**

Rating on a 200-point scale	Assessment on the ECTS scale	Score for four-point (national) scale
180–200	A	Excellent
160–179	B	Very good
150–159	C	Good
130–149	D	Satisfactory
120–129	E	Sufficient
Less than 120	F, Fx	Fail

After completing the discipline, the person responsible for the organization of educational and methodical work at the department or the teacher gives the student the number of points and the corresponding grade in the record book and fill in the progress of students in the discipline form U-5.03B - differentiated test.

Grades "unsatisfactory" are given to students who were admitted to the differentiated test, but did not pass it and who were not admitted to the test.

### **3.2. Test questions:**

- Diabetes mellitus, classification, etiology, pathogenesis, clinic, diagnosis: algorithms and diagnostic protocols.
- Type 1 and type 2 diabetes mellitus, modern methods of therapy: algorithms and treatment protocols.
- Acute and chronic complications of diabetes. Features of the course and treatment of diabetes mellitus in surgical patients during pregnancy: algorithms and protocols for the treatment of hypoglycemic coma, diabetic ketoacidotic coma, diabetic neuropathy, diabetic nephropathy, retinopathy, diabetic foot syndrome.
- Iodine deficiency diseases of the thyroid gland. Signs of endemic terrain according to the WHO. Clinic, diagnosis, prevention and treatment. Hypothyroidism and thyroiditis. Classification, diagnosis, clinic, treatment: algorithms for diagnosis and treatment of iodine deficiency diseases, hypothyroidism, thyroiditis.
- Thyrotoxicosis. Clinical forms. Diagnosis, treatment. Thyroid cancer. Classification, clinic, diagnosis, treatment.
- Diseases of the hypothalamic-pituitary system. Obesity. Diseases of the gonads: algorithms for the diagnosis and treatment of somatotropic insufficiency, Itsenko-Cushing's disease, acromegaly, hyperprolactinemia, diabetes mellitus, hypopituitarism, obesity, gonadal diseases.
- Hemophilia and thrombocytopenic purpura. Definition. Etiology and pathogenesis, main clinical syndromes. Criteria for diagnosis. Differential diagnosis. Treatment. Prevention of bleeding. Primary and secondary prevention. Forecast and efficiency.
- Anemia (posthemorrhagic, iron deficiency, B12-deficient, folate-deficient, aplastic, hemolytic).
- Definition. Etiological factors and pathogenesis. Mechanisms of intravascular and intracellular hemolysis. Features of clinic and laboratory diagnostics of various forms. Differential diagnosis. Complication. Treatment of various forms of anemia. Transfusion of blood components and blood substitutes. Primary and secondary prevention. Prognosis and efficiency.
- Acute leukemia. Definition. Modern views on the etiology and pathogenesis. Classification. The main clinical and hematological syndromes. Clinical manifestations. Criteria for diagnosis. Differential diagnosis. Complication. Principles of treatment. Supportive therapy. Bone marrow transplantation. Primary and secondary prevention. Prognosis and efficiency.
- Chronic leukemia. Definition of chronic myeloid leukemia, chronic lymphoid leukemia, myeloma, true polycythemia. Modern views on the etiology and pathogenesis. Classification. The main clinical manifestations and clinical and

hematological syndromes. Criteria for diagnosis. Differential diagnosis. Complication. Principles of treatment. Bone marrow transplantation. Primary and secondary prevention. Prognosis and efficiency.

- Chronic bronchitis. Definition. The importance of smoking, environmental, occupational factors and infection in the development of chronic obstructive pulmonary disease. Classification. Clinical manifestations, data of laboratory and instrumental research methods depending on the stage (severity). Differential diagnosis. Complication. Treatment. Primary and secondary prevention. Prognosis and efficiency.

- Bronchial asthma. Definition. Etiology, features of pathogenesis. Classification. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis. Complication. Treatment. Emergency care for asthma attacks. Primary and secondary prevention. Prognosis and efficiency.

- Pneumonia. Definition. Etiology. Classification. Clinical manifestations and features of the course depending on the pathogen. Data of laboratory and instrumental research methods. Differential diagnosis. Complications (acute respiratory distress syndrome, destruction of lung tissue, acute respiratory failure and others). Differentiated treatment. Primary and secondary prevention. Prognosis and efficiency.

- Pleurisy. Definition. Etiological factors. Classification. Clinical manifestations, data of laboratory and instrumental research methods. Differential diagnosis. Complication. Indications for pleural puncture and drainage of the pleural cavity. Treatment. Primary and secondary prevention. Prognosis and efficiency.

- Gastroesophageal reflux disease. Definition. Etiology, pathogenesis. Classification. Erosive and non-erosive GERD. Clinical manifestations depending on the variant and stage. Data of laboratory and instrumental research methods. Diagnosis criteria, differential diagnosis. Complication. Differentiated therapy. Primary and secondary prevention.

- Dyspepsia. Determination of dyspepsia. Etiology and pathogenesis. The role of H.pylori in the occurrence of gastroduodenal pathology. Classification. Unexplored and functional dyspepsia. Criteria for diagnosis. Differential diagnosis. Modern approaches to the treatment of functional dyspepsia. Primary and secondary prevention. Prognosis and efficiency.

- Chronic gastritis Definition, etiology and pathogenesis of chronic gastritis. The role of H.pylori in the occurrence of chronic gastritis. Classification. Clinical manifestations, data of laboratory and instrumental research methods. The value of endoscopic (with morphology) research. Modern approaches to the treatment of various types of chronic gastritis. Primary and secondary prevention. Prognosis and efficiency.

- Peptic ulcer of the stomach and duodenum. Definition. The main causes of peptic ulcers (H. pylori, drugs, etc.). Classification. Clinical manifestations. Complications (perforation, penetration, bleeding, stenosis, malignancy). The value of instrumental and laboratory diagnostic methods. Methods of diagnosis of Hp infection. Tactics of patient management. Eradication therapy, control of eradication

efficiency. Drug therapy of Hp-negative ulcers. Indications for surgical treatment. Primary and secondary prevention. Prognosis and efficiency.

- Celiac disease and other enteropathies. Definition. Etiology, pathogenesis. The role of intolerance to food components, immune factors and enzymopathies (lactose intolerance, fructose, galactose, etc.). Malabsorption and maldigestion syndromes. Diagnosis criteria, differential diagnosis. Complication. Differentiated therapy. Primary and secondary prevention. Prognosis and efficiency.

- Inflammatory bowel disease. Nonspecific ulcerative colitis and Crohn's disease: definition, etiology and pathogenesis. Classification. Features of the clinical course depending on the degree of activity, severity and phase of the course. Laboratory and instrumental diagnostics. Diagnosis criteria, differential diagnosis. Intestinal and extraintestinal complications and diseases associated with inflammatory bowel disease (toxic dilatation, perforation, sclerosing cholangitis, spondylitis, arthritis, dermatoses, uveitis, etc.). Treatment. Primary and secondary prevention. Prognosis and efficiency.

- Irritable bowel syndrome, definition. Etiology and pathogenesis. Classification. Clinical manifestations of different variants. Rome diagnostic criteria. Differential diagnosis. Treatment of various forms. Primary and secondary prevention. Prognosis and efficiency.

- Chronic hepatitis. Definition. Classification. The role of persistence of the virus, toxic and medicinal agents, immune disorders and alcohol. Methods of diagnosis of viral infection. Autoimmune hepatitis, chronic viral, toxic (drug) hepatitis. Alcoholic liver disease. Basic clinical and biochemical syndromes. Features of the clinical course and diagnosis of individual forms. Differential diagnosis. Complication. Features of treatment of various forms. Primary and secondary prevention. Prognosis and efficiency.

- Cirrhosis of the liver. Definition. Significance of viral infection, nutritional factors, alcohol, toxic substances and immune disorders. Classification. Features of clinical manifestations and diagnosis of different options. Differential diagnosis. Liver failure and other complications. Differentiated therapy. Urgent therapy for complications. Primary and secondary prevention. Prognosis and efficiency.

- Obesity and its consequences. The urgency of the problem. Methods of calculating overweight (body mass index) and determining obesity. Classification of obesity. The main medical consequences of obesity are metabolic syndrome, diabetes, cardiovascular diseases and diseases of the gastrointestinal tract. Modern approaches to medical and non-medical treatment.

#### **4. DISCIPLINE POLICY**

To achieve the goals of training and successfully complete the course, it is necessary to: join the work from the first day; attend lectures regularly; read the material before its consideration in a practical lesson; not to be late and not to miss classes; come to the department dressed in a medical gown, have changeable shoes, have a phonendoscope, notebook, pen; perform all necessary tasks and work every

day; be able to work with a partner or in a group; ask for help and get it when you need it.

Academic mobility, interchangeability of credit credits (volume of 1 credit 30 hours) is provided. Students can discuss different tasks, but their performance is strictly individual. You are not allowed to write off, use any kind of software, tips, use a mobile phone, tablet or other electronic gadgets during the lesson. Students are not allowed to be late for practical classes. Omissions of practical classes are worked out hour by hour to the teacher of group or the next teacher. Reception of tests and consultations are held daily from 08.00 to 17.00, on Saturdays in accordance with the "Regulations on the procedure for students to study" from 07.12.2015 № 415.

Students with special needs should meet with the teacher or warn him before the start of classes, at the request of the student it can be done by the head of the group. If you have any questions, please contact the teacher.

## **5. ACADEMIC INTEGRITY**

At the Department of Internal Medicine № 3 and Endocrinology, adherence to academic integrity as a mandatory component of the internal quality assurance system of the educational program is necessary. Observance of academic integrity takes place according to the current legislation:

- Regulation №305 of 27.08.19 on the organization of the educational process in KhNMU.
- Code of Academic Integrity of KhNMU.
- Order №165 of 02.07.2020 on measures to develop the system of academic integrity in KhNMU.
- Regulations on academic integrity.
- Regulations on the Commission on Academic Integrity, Ethics and Conflict Management of KhNMU.
- Recommendations of the National Agency for Quality Assurance in Higher Education.
- Law of Ukraine "On Education", Article 42.

## **6. RECOMMENDED LITERATURE**

### **Basic**

- 1) Gastroenterology. Textbook: In 2 T. -Vol.2 / ed. Prof. NV Kharchenko., O.Ya. Babaka. -Kirovograd: Polyum, 2017. - 432 p.
- 2) Endocrinology: a textbook (PM Bodnar, GP Mikhalchyshyn, YI Komisarenko, etc.), ed. Professor P.M. Bodnara, - Type. 4, reworked. and ext. - Vinnytsia: Nova Kniga, 2017. - 456 p.
- 3) Order of the Ministry of Health of Ukraine dated 21.06.2016 №613 "On approval and implementation of medical and technological documents for the standardization of medical care for viral hepatitis B". Unified clinical protocol of primary, secondary (specialized) medical, tertiary (highly specialized) care "Viral hepatitis B in adults".

4) Order of the Ministry of Health of Ukraine dated 18.07.2016 №729 "On approval and implementation of medical and technological documents for the standardization of medical care for viral hepatitis C". Unified clinical protocol of primary, secondary (specialized) medical, tertiary (highly specialized) care "Viral hepatitis C in adults".

5) Unified protocol for providing medical care to adult patients with community-acquired pneumonia. Nosocomial pneumonia in adults: etiology, pathogenesis, classification, diagnosis, antibacterial therapy and prevention - Kyiv, National Academy of Medical Sciences of Ukraine - 2016.

6) Davidson's Principles and Practice of Medicine 23rd Edition. Editors: Stuart Ralston, Ian Penman, Mark Strachan Richard Hobson. Elsevier. - 2018. - 1440p.

7) Endocrinology: textbook / Ed. by prof. Petro M. Bodnar.- 4th ed. updated - Vinnitsa: Nova Knyha, 2017. - 328 p.

8) USMLE Step 2 CK Lecture Notes 2017: Internal Medicine (Kaplan Test Prep). - 2016. - Published by Kaplan Medical. - 474 pages.

#### **Additional literature:**

1. Standards for providing medical care to patients with pathological conditions of the thyroid and parathyroid glands under the influence of negative environmental factors (third edition, extended) / Ed. O.B. Kaminsky. - Kharkiv: Uright, 2017. - 312p.

2. Harrison's Endocrinology. Ed. by J. Larry Jameson, Mc Graw - Hill., New York, Chicago, Toronto. ea 4rd edition, 2016. - 608 p.

## **7. INFORMATION RESOURCES**

Moodle page <http://31.128.79.157:8083/course/index.php?categoryid=14>.

1. <https://www.aasld.org/>
2. <http://www.acc.org/guidelines#sort=%40foriginalz32xpostedz32xdate86069%20descending>
3. <https://www.asn-online.org/education/training/fellows/educational-resources.aspx#Guidelines>
4. <https://ehaweb.org/organization/committees/swg-unit/scientific-working-groups/structure-and-guidelines/>
5. <http://www.gastro.org/guidelines>
6. [www.ginasthma.org](http://www.ginasthma.org)
7. <http://goldcopd.org>
8. <http://inephrology.kiev.ua/>
9. [http://www.ifp.kiev.ua/index\\_ukr.htm](http://www.ifp.kiev.ua/index_ukr.htm)
10. <http://kdigo.org/home/guidelines/>
11. <http://mtd.dec.gov.ua/index.php/uk/>
12. <https://www.thyroid.org>
13. <https://www.ueg.eu/guidelines/>
14. <http://ukrgastro.com.ua/>

15. Website of the Center for Public Health of the Ministry of Health of Ukraine:<http://phc.org.ua/>

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