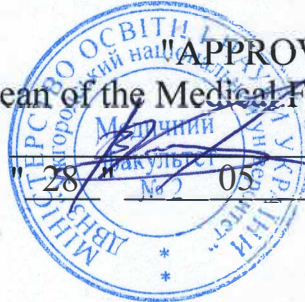


**STATE UNIVERSITY
"UZHHOROD NATIONAL UNIVERSITY"
MEDICAL FACULTY 2
Department of Internal Medicine**

"APPROVED"
Dean of the Medical Faculty 2
Vasyl KALIY
"28" 05 2025



SYLLABUS

CC 29. INTERNAL MEDICINE, INCLUDING ENDOCRINOLOGY, MEDICAL GENETICS

Educational level	Second (Master)
Subject area	22 "Health" / I "Health and Social Welfare"
Specialty	222 "Medicine" / I2 "Medicine"
Educational program	"General Medicine"
Discipline status	Compulsory
The language of instruction	English

"Internal medicine, including endocrinology, medical genetics" syllabus for higher education seekers of the subject area 22 "Health" / I "Health and Social Welfare", specialty 222 "Medicine"/ I2 "Medicine", educational program "General medicine".

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The syllabus was discussed and approved at the meeting of the Department *of Internal Medicine*

Minutes № 11 of " 28 " May 2025

Head of the Department  /Marianna TOVT-KORSHYNSKA/

Approved by the Scientific-Methodical Commission of the Medical Faculty 2

Minutes № 9 of " 28 " May 2025

Head of the Scientific-Methodical Commission  /Nataliia MALETS/

1. DESCRIPTION OF THE EDUCATIONAL SUBJECT

Name of indicators	Distribution of academic hours according to the curriculum	
	Full-time study	Extramural form of study
ECTS credits – 9,5	Year of training:	
Total number of hours – 285	4	-
Number of modules – 4	Semester:	
Weekly academic hours for full-time study: class-room academic hours – 5 student's self-study hours - 2,5	7,8	-
	Lectures:	
	40	-
	Practical classes (seminars):	
		-
Type of final control: exam	Laboratory classes:	
	150	-
Form of final control: complex	Self-study:	
	95	-

2. PURPOSE OF THE EDUCATIONAL SUBJECT

The purpose of studying the discipline CC 29 "**Internal medicine, including endocrinology, medical genetics**" is acquisition of knowledge, abilities, skills and other competences in internal medicine, medical genetics necessary in professional activity and the ability to apply them to solve typical tasks in the activity of a doctor in the field of health care, the scope of which is provided by the specified lists of syndromes and symptoms of diseases, emergency conditions, and diseases that require special patient management tactics; laboratory and instrumental research, medical manipulations.

According to the educational program, the study of the discipline contributes to the formation of the following competencies in higher education seekers:

General competencies (GC):

1. The ability to think abstractly, analyze and synthesize.
2. The ability to learn and master modern knowledge.
3. The ability to apply knowledge in practical situations.
4. Knowledge and understanding of the subject area and
5. understanding of professional activity.
6. The ability to adapt to and act in a new situation.
7. The ability to make reasoned decisions.
8. The ability to work in a team.
11. Information and communication technology skills.

Professional competencies of the specialty (PC):

1. The ability to collect medical information about the patient and analyze clinical data.
2. The ability to determine necessary panel of laboratory and instrumental research and to evaluate their results.
3. The ability to establish a preliminary and a clinical diagnosis of the disease.
4. The ability to determine the required mode of work and rest in the treatment of diseases.
5. The ability to determine therapeutic nutrition in the treatment of diseases.
6. The ability to determine the principles and nature of disease treatment and prevention.
7. The ability to diagnose emergencies.
8. The ability to determine the tactics of providing emergency care.
10. The ability to perform medical manipulations.
11. The ability to solve medical problems in new or unfamiliar environments having incomplete or limited information, taking into account aspects of social and ethical responsibility.
15. The ability to conduct a functional capacity evaluation.
16. The ability to maintain medical records, including those in electronic format.
21. The ability to clearly and unambiguously convey one's own knowledge, conclusions and arguments on health care issues as well as related issues to specialists and non-specialists, in particular to people who are studying.
22. The ability to manage healthcare workflows that are complex, unpredictable and require new strategic approaches.
23. The ability to develop and implement scientific and applied projects in the health care field.
24. To comply with ethical principles when working with patients and laboratory animals.
25. To observe professional and academic integrity, bear responsibility for the reliability of the obtained scientific results.

3. PREREQUISITES FOR STUDYING THE EDUCATIONAL SUBJECT

The prerequisites for studying the educational subject CC 29 "**Internal medicine, including endocrinology, medical genetics**" are mastering the following educational subjects (ES) of the educational program (EP):

CC 6	Medical biology
CC7	Medical and Biological Physics
CC8	Medicinal chemistry
CC 9	Bioorganic chemistry
CC 12	Physiology
CC 14	Biochemistry
CC 21	Pathophysiology
CC 22	Pharmacology
CC 23	Propaedeutics of internal medicine
CC 26	Medical psychology
CC 28	Radiology

4. EXPECTED LEARNING OUTCOMES

According to the educational program "General Medicine", the study of the educational subjects should ensure the achievement of the following program learning outcomes (PLO) by higher education seekers:

Program learning outcomes	PLO code
To have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that requires knowledge updating and integration. To be responsible for professional development as well as to be able to carry out further professional training with a high level of autonomy.	PLO1
To understand and possess a decent knowledge of fundamental and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.	PLO2
To have specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine as well as related interdisciplinary problems.	PLO3
To distinguish and identify leading clinical symptoms and syndromes (according to the list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the human, human's organs and systems, establish a preliminary clinical diagnosis of the disease (according to the list 2).	PLO4
To collect complaints, history of life and diseases, evaluate psychomotor and physical development of the patient, state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (according to the list 4), taking into account the age of the patient.	PLO5
To establish a final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of a clinical and follow-up examination, to carry out differential diagnosis, upholding relevant ethical and	PLO6

legal standards, under the control of the managing physician within the health care facility (according to the list 2).	
To assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to the list 4) of patients with diseases of organs and body systems for carrying out differential diagnosis of diseases (according to the list 2).	PLO7
To determine the main clinical syndrome or preconditions for the severity of the condition of the victim/the injured (according to the list 3) by making a reasoned decision and assessing the person's condition under any circumstances (within or outside a health care facility), both in conditions of emergency and hostilities as well as in field conditions, in conditions of lack of information and limited time.	PLO8
To determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to the list 2), taking into account the patient's age, within or outside a health care facility and at the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, upholding relevant ethical and legal standards, by making a reasoned decision according to existing algorithms and standard schemes; in case of the need to expand the standard scheme, be able to justify personalized recommendations under the control of the managing physician within a medical facility.	PLO9
To determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, upholding relevant ethical and legal standards by making a reasoned decision according to existing algorithms and standard schemes.	PLO10
To determine tactics and provide emergency medical care in emergency situations (according to the list 3) in limited time conditions according to existing clinical protocols and standards of treatment.	PLO14
To perform medical manipulations (according to the list 5) within a medical facility, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, upholding relevant ethical and legal standards.	PLO17
To determine the state of functioning and limitations of a person's vital activities and the duration of work incapacity with the preparation of relevant documents, within a health care facility, based on data about the disease and its history, peculiarities of the person's professional activity, etc. To maintain medical documentation regarding the patient and the contingent of the population on the basis of the regulatory documents.	PLO18

List 1 (syndromes and symptoms)

2. acromegaly
3. anemic syndrome
5. arterial hypertension
6. arterial hypotension
7. chest pain
8. abdominal pain
12. vomiting
13. broncho-obstructive syndrome
15. pleural effusion
17. fever
18. hemorrhagic syndrome
19. hypoglycemia
20. hyperglycemia
22. hepatomegaly and hepatolienal syndrome
23. headache
26. dyspepsia
27. dysphagia
28. diarrhea
29. jaundice
30. shortness of breath
32. constipation
36. cough
38. coma
40. internal bleeding
41. hemoptysis
43. lymphadenopathy
46. edematous syndrome
47. obesity (+ body weight)
55. portal hypertension
59. disorders of consciousness
60. itchy skin
64. indigestion syndrome
65. thirst
67. joint syndrome
69. weight loss
70. cyanosis
73. gastrointestinal bleeding

List 2 (diseases)

I) Diseases of the blood and hematopoietic organs, disorders involving the immune mechanism

1. anemia
3. hemophilia
4. leukemia
5. lymphomas
9. idiopathic thrombocytopenic purpura

V) Diseases of respiratory organs and mediastinum:

61. bronchial asthma
62. bronchitis
63. bronchiectatic disease
66. acute respiratory distress syndrome
67. respiratory failure
68. infectious and destructive lung diseases
69. pulmonary insufficiency
71. cystic fibrosis
72. lung and mediastinal neoplasms
73. pleurisy
75. pneumonia
76. pneumothorax
80. chronic obstructive pulmonary disease

VI) Diseases of digestive organs:

82. ulcer disease
 84. gastroesophageal reflux disease, esophagitis
 85. gastritis, duodenitis
 86. acute and chronic hepatitis
 89. acute and chronic pancreatitis
 90. benign diseases of the esophagus
 91. enteritis, colitis
 95. peptic ulcers of the stomach and duodenum
 98. liver failure
 99. malabsorption syndrome
 102. functional gastrointestinal disorders
 104. cholecystitis, cholangitis, gallstone disease, choledocholithiasis
 105. cirrhosis of the liver
 106. gastrointestinal bleeding
- #### X) Diseases of the endocrine system, nutritional disorders and metabolic disorders:
151. acromegaly and pituitary gigantism
 152. hypothyroidism
 153. hypotrophy, protein-energy deficiency
 154. hypopituitarism
 155. thyrotoxicosis
 156. endemic goiter

- 157. diabetes insipidus
- 158. nodular goiter, tumors of the thyroid gland
- 159. obesity
- 161. violation of calcium-phosphorus metabolism, vitamin D metabolism
- 163. thyroiditis
- 164. Cushing's disease and syndrome
- 165. chronic adrenal insufficiency

- 166. diabetes
- 167. hypoparathyroidism
- 168. hyperparathyroidism
- 169. tumors of the adrenal glands
- 174. hypogonadism

XI) Infectious and parasitic diseases:

- 182. viral hepatitis

List 3 (emergency conditions)

- 3. hypoglycemia (coma)
- 4. acute respiratory failure
- 22. impaired consciousness and comatose states
- 24. biliary colic

List 4 (laboratory and instrumental studies)

- 1. pleural fluid analysis
- 2. analysis of ascitic fluid
- 4. Zimnitskiy's test - urine analysis
- 5. Nechiporenko's test - urine analysis
- 6. alpha-amylase activity in blood and urine, fecal elastase 1
- 7. blood proteins and their fractions, C-reactive protein
- 8. blood glucose, glycosylated hemoglobin,
- 9. oral glucose tolerance test
- 11. blood hormones
- 12. ferritin, iron and copper levels in blood serum
- 13. creatinine, urea in blood and urine, glomerular filtration rate
- 15. blood aminotransferases
- 16. total blood bilirubin and its fractions
- 17. coagulogram
- 18. blood uric acid
- 19. blood alkaline phosphatase
- 26. study of the function of external breathing
- 28. endoscopic examination of bronchi
- 29. endoscopic examination of the digestive tract
- 30. echocardiography and dopplerography
- 31. stool test
- 32. general blood test
- 33. urinalysis
- 34. sugar and acetone in urine
- 37. general analysis of sputum
- 40. express tests for viral diseases
- 44. microbiological research of biological fluids and secretions
- 46. methods of instrumental visualization of the thyroid gland
- 48. methods of instrumental visualization of abdominal organs
- 49. methods of instrumental visualization of chest cavity organs
- 55. multi-moment fractional study of bile and pH-metry of the stomach and esophagus

List 5 (medical manipulations)

- 8. install a nasogastric and orogastric tube
- 10. administer drugs (intravenous jet and drip, intraosseous), incl. in field conditions
- 12. measure blood pressure
- 29. palpate the thyroid gland

Expected learning outcomes (ELO) that should be achieved by students after mastering the discipline CC 29 "**Internal medicine, including endocrinology, medical genetics**":

ELO code	Expected learning outcomes of the discipline	PLO code
ELO 1 ELO 2	The ability to carry out professional activities that require updating and integration of knowledge. Carry out professional development and further professional training with a high level of autonomy. To be able to conduct a clinical examination of the patient - to demonstrate the "technology" of being a doctor. Know how to carry out the stages of examination: complaints of the patient; medical history; life history; objective examination of the patient: examination, palpation, percussion, auscultation, measurement of pulse and blood pressure. Grouping of symptoms into syndromes with the selection of the main one. Systematic, organic, sequence. Structure of clinical diagnosis. Principles of treatment of a sick person. Complexity. Individuality. Continuity. Heredity (staged). Ability to apply knowledge of basic and clinical biomedical sciences to solve the above problems.	PLO1 PLO2
ELO 3 ELO 4	Have clinical thinking when solving problems in the field of medicine and related interdisciplinary problems. At the same time, be able to distinguish and identify leading clinical symptoms and syndromes (from list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).	PLO3 PLO4
ELO 5	The ability to collect complaints, life and disease history, assess the patient's psychomotor and physical development, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (from list 4), taking into account the patient's age.	PLO5
ELO 6	The ability to establish a final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, carrying out differential diagnosis, observing the relevant ethical and legal norms, under the supervision of the head physician in the conditions of a health care institution (from list 2).	PLO 6
ELO 7	The ability to prescribe and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (from list 2).	PLO 7
ELO 8	The ability to determine the main clinical syndrome or what causes the severity of the victim/victim's condition (from question 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care institution, outside its borders), including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.	PLO 8
ELO 9	The ability to determine the nature and principles of treatment (conservative, operative) of patients with diseases (from list 2), taking into account the age of the patient, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, observing relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, to justify	PLO 9

	personalized recommendations under the control of the supervising physician in conditions of medical institutions.	
ELO 10	The ability to determine the necessary mode of work, rest and nutrition based on the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.	PLO 10
ELO 11	The ability to determine tactics and provide emergency medical care in emergency situations (according to the list 3) in limited time conditions according to existing clinical protocols and standards of treatment.	PLO 14
ELO 12	The ability to perform medical manipulations (from list 5) in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.	PLO 17
ELO 13	The ability to determine the state of functioning and limitations of a person's vital activities and the duration of incapacity with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, the peculiarities of a person's professional activity. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.	PLO 18

5. DIAGNOSTIC TOOLS AND EVALUATION CRITERIA OF LEARNING OUTCOMES

Means of assessment and methods of demonstrating learning outcomes

Means of assessment and methods of demonstrating learning outcomes in the discipline are:

ELO 1 – oral answer, solving test tasks (oral, written, computer)

ELO 2 – solving test tasks (oral, written, computer)

ELO 3 – solving test tasks (oral, written, computer)

ELO 4 – clinical examination of the patient (solving clinical tasks), test tasks, analysis of prescription lists and their correction, simulation scenario performance

ELO 5 – clinical analysis of the patient (solving clinical tasks), test tasks, evaluation of laboratory research results, analysis and evaluation of instrumental research results and parameters characterizing the functions of the human body, simulation scenario performance

ELO 6 – test tasks, solving situational cases, conducting laboratory studies and evaluating their results, analyzing and evaluating the results of instrumental studies and parameters characterizing the functions of the human body

ELO 7 – patient curation, solving tests, situational tasks, evaluating the results of laboratory tests, analyzing and evaluating the results of instrumental tests and parameters characterizing the functions of the human body, simulation scenario performance

ELO 8 – patient curation, solving tests, situational tasks, evaluating the results of laboratory tests, analyzing and evaluating the results of instrumental tests and parameters characterizing the functions of the human body, simulation scenario performance

ELO 9 – medical history, solving test tasks (oral, written), oral interview

ELO 10 – patient curation, solving tests, situational tasks, evaluating the results of laboratory tests, analyzing and evaluating the results of instrumental tests and parameters characterizing the functions of the human body, simulation scenario performance

ELO 11 – demonstration of practical skills in providing emergency medical care, oral answer

ELO 12 – demonstration of medical manipulation on a dummy in the simulation center, solving test tasks (oral, written), oral interview, simulation scenario performance

ELO 13 – curation of the patient, solving test tasks, situational tasks, evaluating the results of laboratory studies, analyzing and evaluating the results of instrumental studies and parameters characterizing the functions of the human body, the ability to find the necessary clinical protocols on the Internet

Forms of control and criteria for learning outcomes evaluation

The grade for the discipline is set as the average of the grades for the modules on which the academic discipline is structured (including the module that includes medical history and lecture attendance). The grade for the module is determined as the sum of the grades for the current educational activity (in points) and the grade for the final module control (in points), which is set when assessing theoretical knowledge and practical skills in accordance with the lists defined by the discipline program.

The maximum number of points that a student can score for each module is 200, including for the current educational activity, the individual work and the results of the final module control - 70 points.

Thus, the ratio between the results of the assessment of the current educational activity and the final module control is chosen as 60% to 40%.

Current educational activities of students are assessed in practical classes in accordance with specific goals.

Forms of current control: The following means of diagnosing the level of student training are recommended for use: test control, oral interviewing, solving situational problems, control of practical skills, in particular - the ability to correctly conduct the curation of a standardized patient, demonstrate medical manipulation on a dummy, prescribe and interpret the results of laboratory and instrumental examinations, substantiate the diagnosis based on the analysis of clinical and auxiliary examination methods.

Form of module control: conducting and evaluating the module control work (computer testing, written control work to assess theoretical knowledge and practical skills in accordance with the lists specified in the discipline program), summation with current performance scores and issuing the module assessment (points per module).

Final semester control form: exam.

Distribution of points received by higher education seekers (module 1)

Module 1 Gastroenterology

Current assessment and self-study													Module test	Sum	
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	Ind work			
9	9	9	9	9	9	9	9	9	9	9	9	9	13	70	200

T1, T1, T3... - topics

Module 2 Pulmonology and Hematology

Current assessment and self-study											Module test	Sum	
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11			Ind work
11	11	11	11	11	11	11	11	11	11	11	9	70	200

T1, T1, T3... - topics

Module 3 Endocrinology

Current assessment and self-study																Module test	Sum	
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	Ind work			
8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	10	70	200

T1, T1, T3... - topics

Module 4 Medical genetics

Current assessment and self-study							Module test	Sum	
T1	T2	T3	T4	T5	T6	Ind work			
20	20	20	20	20	20	20	10	70	200

T1, T1, T3... - topics

Evaluation of certain types of educational work in the discipline

Type of activity of the higher education seeker	Number	Maximum number of points (total)	Number	Maximum number of points (total)	Number	Maximum number of points (total)	Number	Maximum number of points (total)
	Module 1		Module 2		Module 3		Module 4	
Laboratory classes	13	120	11	120	15	120	6	120
solving test tasks (oral, written, computer) during thematic assessment	9	6	11	6	8	6	20	20
Simulation patients clinical examination (clinical cases solving)		3		5		2		
Individual work (presentations, case history, pedigree compilation, participation in conferences)		13		9		10		10
Attending lectures	7	7	5	5	5	5	3	3
Module test	1	70	1	70	1	70	1	70
Total		200		200		200		200

Evaluation criteria for module control work

Final module control:

The final module control work is carried out using computer and written testing. The form of conducting the final module control is standardized and includes control of theoretical and practical training.

The maximum number of points that a student can receive is 70 points: of which: 30 points for computer testing, 40 points - written control tasks, which include - 30 points clinical task, 5 points - clinical interpretation of the result of instrumental research, 3 points - clinical interpretation of the result of laboratory research, 2 points - writing a prescription for a drug. **The final module control is considered passed if the student has scored at least 45 points.**

The final module control score is calculated as the sum of the scores of the current educational activity (in points) and the score of the final module control work (in points), which is given when assessing theoretical knowledge and practical skills in accordance with the lists specified by the discipline program and for independent work.

Current control is carried out at each clinical lesson in accordance with specific goals for each topic.

Assessment of current educational activity:

The weight of each topic within one module should be the same, but may be different for different modules of one discipline and is determined by the number of topics in the module.

When mastering each topic of the module, the student is given grades on a 4-point traditional scale for the current educational activity, which are then converted into points depending on the number of topics in the module. The following system of converting the traditional grading system into points was applied in the program:

Criteria of current educational activity evaluation

Traditional mark	Conversion into points			
	<i>Module 1</i>	<i>Module 2</i>	<i>Module 3</i>	<i>Module 4</i>
"5"	9-8	11-10	8	16-20
"4"	6-7	9-8	6-7	12-16
"3"	4 - 5	7-6	4 - 5	8-11
"2"	0-3	0-5	0-3	0-7

The maximum number of points that a student can score when studying a module is 200. It is calculated by multiplying the number of points corresponding to the grade "5" by the number of topics in the module.

The minimum number of points that a student can score when studying a module is calculated by multiplying the number of points corresponding to the grade "3" by the number of topics in the module.

Assessment of the student's individual research work:

Individual student research work includes:

- a) various forms of participation in student scientific work - a workshop, speeches at a conference;
- b) high-quality preparation of individual tasks (abstracts, presentations, etc.) during the module.

Points for the student's individual research work are awarded to the student only upon their successful completion and defense. The number of points awarded for different types of individual tasks depends on their volume and significance and may be different for different modules of the same discipline.

In Module 1, this is 13 points, in Module 2 - 9 points, and in Modules 3 and 4, 10 points each. They are added to the total points scored by the student for current educational activities.

A separate module is considered a grade for writing and defending a case history and attending lectures, which can be a maximum of 200 points, of which: a medical history with defense - 120 points, and 80 points for 20 lectures per academic year (4 points for each lecture attended). To rework a missed lecture, you must prepare a notated personal missed lecture and answer specific questions posed by the teacher on the topic. If a student missed a lecture for a good reason (due to health reasons, participation in olympiads, sports competitions, conferences, etc.), then for each lecture completed, he can receive 20 points, and in case of absences without a good reason - 10 points, that is, half of the points for attending the lecture.

Criteria for evaluating case history

Case histories are accepted for review, which are based on the results of the patient's physical examination and the data of the original medical history, written neatly, in one's own handwriting, on A4 sheets, stitched into a single file. Histories written carelessly or in illegible handwriting, with incomplete or missing sections, are not accepted for review.

Score "**5 points**". All sections are written in full. The material is presented neatly, without errors. As an exception, minor errors in design are allowed.

Score "**4 points**" - in the 1st-3rd sections there are the following shortcomings that do not belong to gross errors, for example: - complaints are presented in full, but some of them are not detailed enough; - the history does not contain a description of a detail important for the diagnosis.

Score "**3 points**". Imperfections similar to those listed above are present in 4 or more sections; or no more than 2-3 sections have more serious shortcomings and errors, for example: - incomplete, without proper detailing of complaints; - incomplete, without main points of history; - incomplete or erroneous description of objective status; - incorrect formulation of preliminary or clinical diagnosis, non-specific, insufficient or erroneous substantiation thereof; - errors in the examination plan (no necessary studies);

Score "**2 points**". At least one section written for 3 points (for example, there is actually no history data). - At least one section does not correspond to a real patient (for example, complaints and history of another patient, fictional or another patient's data on additional studies or actual treatment).

In the case of a score of 2 points, sections that are practically not presented or with significant shortcomings are written anew and added to the corresponding unsatisfactory sections of the medical history. If the grade of "2 points" is received for the inconsistency of the section with the real patient, then in this case another patient is given for the supervision with the writing of a new case history.

Case history defense. In the last lesson, time is allocated for students to defend case histories written with positive grades. Before the lesson, each student must prepare a short report about the patient, lasting 1.5-2 minutes. At the beginning of the lesson, the teacher distributes verified case histories to students to familiarize themselves with the assessment, the teacher's comments and his review, after which he conducts an interview with each student. To defend a case history written with "5 points", you must give the correct answer to all practical questions and show

an excellent level of theoretical knowledge. To defend a case history written with "4 points", you must correctly answer his comments on the medical history, practical and theoretical questions during a conversation with the teacher. To defend a case history written for "3 points", it is necessary to avoid gross errors in the answers to practical questions, and to show knowledge in the answers to theoretical questions in a volume exceeding 60% of the volume of the curriculum.

If the level of the student's report and answers does not meet the requirements, the grade for the defense of the case history is set lower than the one for which it was written. In the case when the student is poorly oriented in the clinical picture of the patient, cannot give the correct answer to the main practical and theoretical questions, he is given "2 points" for the defense of the history, regardless of the grade for writing the history and the level of his theoretical knowledge in general, with a subsequent re-defense. The score for the defense of the case history is converted into the sum of the points of the final module control, and not for its writing.

Assessment of individual work:

The assessment of students' individual work, which is provided for in the topic along with classroom work, is carried out during the current control of the topic at the corresponding classroom lesson.

The assessment of topics that are assigned only for independent work and are not included in the topics of classroom lessons is controlled during the final module control.

Criteria for evaluating the final semester control

The grade for the educational subject CC 29 "**Internal medicine, including endocrinology, medical genetics**" is given only to students who have passed all modules in the discipline.

The grade for the discipline is given as the average of the grades for the modules on which the academic discipline is structured.

Conversion of the number of points for the discipline into grades on the ECTS and 4-point (traditional) scales:

The grade for the discipline F ("2") is given to students who have not passed at least one module in the discipline after completing its study.

The grade for the discipline FX ("2") is given to students who have not scored the minimum number of points for the current educational activity, or have not passed the module final control. They have the right to retake the final module control, no more than 2 times according to the established schedule.

Students who received a grade of F ("2") upon completion of the discipline (did not complete the curriculum in at least one module, or did not score the minimum number of points for the current learning activity in the module) must undergo re-study according to an individual curriculum.

Criteria of current educational activity evaluation

The grade "*excellent*" (180-200 points) is awarded to students who actively participated in the discussion of the most complicated issues on the studied topic, gave at least 90% correct answers to standardized test tasks, completed written tasks without errors, completed practical tasks and properly presented their results.

The grade "*good*" (148-179 points) is awarded to students who participated in the discussion of the most complicated issues on the studied topic, gave at least 74% correct answers to standardized test tasks, made some minor mistakes in answers to written tasks, completed practical tasks and properly presented their results.

The grade "*satisfactory*" (120-147 points) is awarded to students who participated in the discussion of the most complicated issues on the studied topic, gave at least 60% correct answers to standardized test tasks, made significant mistakes in answers to written tasks, completed practical tasks and properly presented their results.

The grade "*unsatisfactory*" (0-119 points) is awarded to students who did not participate in the discussion of the most complicated issues on the studied topic, gave less than 60% correct answers to standardized test tasks, made gross mistakes in answers to written tasks or did not answer them at all, did not complete practical tasks and did not properly present their results.

Criteria for module test evaluation

A module test is done by completing prepared tasks (test cards) with different cards having the same difficulty level. All students are allowed to complete the module test, regardless of the current assessment's results and the presence of unfulfilled missed practical classes. The period of 1.5 hours is given to complete the entire module test. It is forbidden to use any information sources while completing the module test.

The grade "*excellent*" (180-200 points) is awarded to students who gave at least 90% correct answers to standardized test tasks and completed written tasks without errors.

The grade "*good*" (148-179 points) is awarded to students who gave at least 74% of the correct answers to standardized test tasks and made some minor mistakes in the answers to written tasks.

A student who gave at least 60% of the correct answers to standardized test tasks and made significant mistakes in the answers to written tasks receives the grade "*satisfactory*" (120-147 points).

The grade "*unsatisfactory*" (0-119 points) is awarded to students who gave less than 60% correct answers to standardized test tasks, made gross errors in answers to written tasks, or did not provide answers to the designed written tasks.

Criteria for the final semester control evaluation

The final semester rating is calculated as the arithmetic average of four modules. According to the Regulation on the assessment of students' educational achievements according to the credit-module system, if the final module grade is at least 120 points, then with the consent of the student, it can be counted as the final (semester) grade for the academic discipline. Students who are not satisfied with the final positive grades given by the teacher based on the results of module tests, as well as those who received "*unsatisfactory*" grades and at the same time have no unfulfilled practical (laboratory) classes, have the right to take a credit (exam) in the discipline. Full-time students are admitted to the final (semester) control of a specific discipline in the form of a credit or exam if, based on the results of the module tests, they scored at least 35 per cent of the possible points. Based on the results of the answers given during the exam/credit, a grade is awarded according to a 200-point scale. Regardless of whether the student takes the exam (credit) because their final module grade is unsatisfactory (70-119 points) or to increase the positive grade, the teacher gives the student a grade based solely on the level of their knowledge, demonstrated during the exam (credit), that is, based on 200 points, but the final (semester) grade cannot be lower than the final module grade.

Criteria for the module final semester control evaluation

- the grade "*excellent*" (180-200 points, A) is awarded to students who: have comprehensive, systematic, and deep knowledge of educational and syllabus material; are able to independently perform the tasks prescribed by the syllabus, apply the acquired knowledge and skills in non-standard situations; learned the basic and familiarized themselves with the additional literature recommended by the program; mastered the interrelationship of the main concepts of the discipline and are aware of their importance for the profession they acquire; freely express their own opinions, independently evaluate various life phenomena and facts, revealing their personal position; independently determine the individual goals of their own educational activity, revealed creative

abilities and used them when studying the syllabus material, as well as demonstrated interest to scientific work.

- grade "*good*" (164-179 points, B) is awarded to students who: have comprehensive, systematic, and deep knowledge of educational and syllabus material, including applying it in practice, have sufficient systematic knowledge in accordance with the syllabus material, apply it reasonably in different situations; have the ability to independently search for information, as well as to analyze, set and solve professionally oriented problems; while answering the exam/credit questions they might have some inaccuracies, with correcting those themselves. The student should also be able to choose convincing arguments to confirm the studied material;
- the grade "*good*" (148-163 points, C) is awarded to students who: completed the work in general, but during the final control make a certain number of mistakes; are able to compare, generalize, systematize information under the guidance of a teacher, in general independently apply it in practice, control their own activities; learned the curriculum material, successfully completed the tasks prescribed by the program, familiarized themselves with the basic literature recommended by the program;
- the grade "*satisfactory*" (128-147 points, D) is awarded to students who: know the basic syllabus material to the extent necessary for further study and its use in the future profession; perform tasks well, but with a significant number of errors; familiarized themselves with the basic literature recommended by the syllabus; make mistakes when completing tasks during classes or exams but find ways to correct them under the guidance of the teacher.
- the grade "*satisfactory*" (120-127 points, E) to students who: have basic knowledge of educational and syllabus material in the amount necessary for further study and its application in the future profession, and the performance of tasks meets the minimal criteria. Knowledge is reproductive in nature.
- grade "*unsatisfactory*" (70-119 points, FX) is awarded to students who: revealed significant gaps in the knowledge of the main syllabus material and made fundamental mistakes during the completion of tasks provided by the syllabus.
- grade "*unsatisfactory*" (0-69 points, F) is awarded to students who learned the educational material only at the level of elementary recognition and reproduction of individual facts or did not learn it at all; made gross errors when completing the tasks provided by the syllabus; cannot continue their studies and are not ready for professional activity after graduating from the university without re-studying this discipline.

6. SYLLABUS

6.1. The content of the discipline

Module 1. FUNDAMENTALS OF DIAGNOSTIC, TREATMENT AND PREVENTION OF THE MAIN DISEASES OF THE DIGESTIVE ORGANS. GENERAL ISSUES OF INTERNAL MEDICINE

Content module 1: Basics of diagnosis, treatment and prevention of the main diseases of the digestive organs

Topic 1. The method of clinical analysis of the patient. Case history. Clinical diagnosis.

Examination stages: patient's complaints; history of the present disease; life history; objective examination of the patient: inspection, palpation, percussion, auscultation, measurement of pulse and blood pressure. Grouping of symptoms into syndromes with the selection of the main one. Systematicity, organicity, consistency. Structure of clinical diagnosis. Principles of treatment of a sick person. Complexity. Individuality. Continuity. Heredity (staged).

Main symptoms of digestive pathology. Research methods in gastroenterology. Principles of treatment and main groups of drugs in gastroenterology.

Main gastroenterological complaints. Determination of the main gastroenterological symptoms (pain, heartburn, dyspepsia, nausea, vomiting, bleeding, hepatomegaly, ascites, jaundice, diarrhea, constipation, etc.) and syndromes. General and alarming symptoms. Physical symptoms of gastroenterological pathology. Methods of physical examination of patients with gastroenterological pathology. Symptomatic treatment of digestive symptoms.

Endoscopic methods: diagnostic possibilities of esophagogastroduodenoscopy, colonoscopy, biopsy, indications, contraindications and limitations to their implementation, possible complications. Intra-gastric and intra-esophageal pH-metry, duodenal sounding - informativeness and clinical evaluation of results. X-ray and isotope methods for diagnosing diseases of the digestive tract and liver. Ultrasound examination of abdominal organs. Immunoenzymatic and biochemical research methods. Diagnosis of H.pylori infection and other infectious agents.

Topic 2. Dyspepsia: functional and organic.

Definition of dyspepsia. Etiology and pathogenesis. The role of H.pylori in the occurrence of gastroduodenal pathology. Classification. Unexamined and functional (gastric) dyspepsia. Diagnostic criteria. Differential diagnosis. Current approaches to the treatment of functional dyspepsia. Primary and secondary prevention. Prognosis and work capacity.

Topic 3. Gastroesophageal reflux disease.

Definition. Etiology, pathogenesis. The role of gastroesophageal reflux in the development of esophagitis and Barrett's esophagus. Classification. Nonerosive and erosive GERD. Clinical manifestations depending on the variant and stage. Diagnostic criteria, differential diagnosis. Complications. Differentiated therapy. Primary and secondary prevention.

Topic 4. Chronic gastritis, duodenitis.

Definition, etiology and pathogenesis of chronic gastritis. H.pylori role in causing chronic gastritis. Classification. Nonatrophic and atrophic gastritis. The value of endoscopic (with morphology) examination to establish diagnosis. Current approaches to treat various types of chronic gastritis. Chronic gastroduodenitis. Treatment of Hp associated diseases according to Maastricht V and VI. Primary and secondary prevention. Prognosis and work ability.

Topic 5. Peptic ulcer disease.

Definition. Role H.pylori, acid-peptic factor and medicines in the development of peptic ulcers and their recurrence. Peculiarities of Hp-positive and Hp-negative ulcers. Complications (perforation, penetration, bleeding, impaired evacuatory function). Value of instrumental and laboratory diagnostic methods. Methods of diagnosis of Hp infections. Modern clinical management of patients with ulcer. Eradication therapy. Control of eradication. Drug therapy of Hp-negative ulcers.

Gastrointestinal bleeding, malignant tumors of the stomach. Indications for surgical treatment. Primary and secondary prevention. Prognosis and work ability.

Topic 6. Functional biliary disorders (dysfunction of the gallbladder and sphincter of Oddi), chronic non-calculous cholecystitis, cholangitis. Gallstone disease.

Definition. Etiology, pathogenesis. Value of infection, motility disorders in the development of chronic non-calculous cholecystitis, cholangitis and gallstone disease. Features of clinical course. The role of instrumental methods in diagnosis. Differential diagnosis. Complications. Differentiated treatment based on clinical variation and the presence of complications. Indications for surgical treatment. Primary and secondary prevention. Prognosis and work ability.

Topic 7. Chronic hepatitis of non-infectious origin. Chronic viral hepatitis. Diagnosis of the degree of liver fibrosis. Treatment of chronic hepatitis. Antiviral therapy. Primary and secondary prevention.

Definition. The importance of viral infection, nutritional factors, alcohol, other toxic substances, genetically determined metabolic defects and immune disorders in the genesis of the disease. Classification. Autoimmune hepatitis, chronic viral, drug-induced hepatitis. Alcoholic liver disease. Basic clinical and biochemical syndromes. Peculiarities of the clinical course and diagnosis of various variants of the disease. Methods of diagnosis of viral infection. Differential diagnosis. Diagnosis of the degree of liver fibrosis. Differential diagnosis. Treatment of chronic hepatitis. Antiviral therapy. Primary and secondary prevention. Prognosis and work ability.

Topic 8. Liver cirrhosis. Portal hypertension. Diagnosis and treatment.

Definition. Importance of viral infection, alcohol, toxic substances and immune disorders. Classification. Peculiarities of clinical manifestations and diagnosis of various types. Differential diagnosis. Liver failure and other complications. Differentiated therapy. Emergency treatment of complications. Primary and secondary prevention. Prognosis and work ability.

Topic 9. Metabolically associated fatty liver disease (non-alcoholic fatty liver disease or steatotic liver).

Features of the clinical course, diagnosis and differential diagnosis depending on the degree of liver steatosis. The significance of clinical manifestations and data from additional research methods. Instrumental and modern laboratory examination methods. Modern treatment standards. Primary and secondary prevention. Prognosis and work ability.

Topic 10. Small bowel diseases: chronic enteritis, celiac disease and non-celiac gluten intolerance.

Definition. Etiology, pathogenesis. The role of food component intolerance, enzymopathies (intolerance of lactose, fructose, galactose, etc.) and immune factors. Syndromes of malabsorption and maldigestion. Diagnostic criteria, differential diagnosis. Complication. Differentiated therapy. Primary and secondary prevention. Prognosis and work ability.

Topic 11. Functional bowel diseases: Irritable bowel syndrome.

Irritable bowel syndrome (IBS), definition, Rome IV diagnostic criteria. Etiology and pathogenesis. Classification. Clinical manifestations of different options. Diagnostic criteria and criteria for excluding the diagnosis. Differential diagnosis. Treatment of various forms. Primary and secondary prevention.

Chronic (non-ulcerative) colitis: definition, etiology and pathogenesis. Classification. Features of the clinical course depending on the degree of activity, severity and phase of the course. Diagnostic criteria. Differential diagnosis. Principles of treatment and prevention. Prognosis and work ability.

Topic 12. Inflammatory bowel diseases of non-infectious origin: ulcerative colitis and Crohn's disease.

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. Diagnostic criteria, differential diagnosis. Intestinal and extraintestinal complications and diseases associated with inflammatory bowel diseases (toxic dilatation, perforation, sclerosing cholangitis, spondylitis, arthritis, dermatoses, uveitis, etc.). Treatment. Primary and secondary prevention. Prognosis and work ability.

Topic 13. Chronic pancreatitis.

Definition. The importance of various etiological factors. Classification. Features of the clinical course, diagnosis and differential diagnosis depending on the form and localization of the pathological process. Complication. Research methods in the diagnosis of pancreatitis. Differentiated treatment. Primary and secondary prevention. Prognosis and work ability.

Topic 14. Gastroenterological emergencies: gastrointestinal bleeding, acute liver failure, biliary colic. Features of the clinical course, diagnosis and differential diagnosis and management.

Topic 15. Individual student research work (Presentation of the results of individual work and their defense).

Consultation on the evaluation of laboratory and instrumental diagnostic methods in gastroenterological patients as preparation for the content module control 1. Principles of pharmacotherapy for diseases of the digestive system.

Module control 1.

Final module control in gastroenterology.

MODULE 2. FUNDAMENTALS OF DIAGNOSTIC, TREATMENT AND PREVENTION OF THE MAIN RESPIRATORY DISEASES. FUNDAMENTALS OF DIAGNOSTIC, TREATMENT AND PREVENTION OF THE MAIN DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS**Content module 1: Basics of diagnosis, treatment and prevention of the main respiratory diseases**

Topic 1. Examination methods in pulmonology. Respiratory failure. Main groups of drugs in pulmonology.

Determination of the main symptoms of respiratory diseases (shortness of breath, wheezing, cough, chest pain, etc.). General and specific symptoms. Physical symptoms of pulmonary pathology. Methods of physical examination of patients with pulmonary pathology. X-ray examination of the lungs, computed tomography, diagnostic possibilities of bronchoscopy. Functional methods of external breathing research, microbiological research of sputum.

Acute and chronic respiratory failure.

Definition. Classification. Causes. Features of the clinical course of various forms. Diagnosis, study the role of lung function. Differential diagnosis. Treatment tactics. Primary and secondary prevention. Prognosis and work ability.

Topic 2,3. Pneumonia.

Community-acquired pneumonia. Nosocomial pneumonia. Definition. The most common etiological factors. Classification. Clinical manifestations and their features in community-acquired, nosocomial, aspiration pneumonia and pneumonia in individuals with severe immune deficiencies. Changes in instrumental and laboratory research methods. Differential diagnosis. Complications (multiorgan damage syndrome, respiratory distress syndrome and respiratory failure). Differentiated treatment. Primary and secondary prevention. Prognosis and work ability.

Topic 4. Pleurisy.

Clinical analysis of patients. Pleural effusion: definition, types. Pleurisy: definition. Etiological factors. Classification. Clinical manifestations, changes in instrumental and laboratory data and their features depending on the form (dry, exudative) and etiology. Differential diagnosis. Complications. Indications for pleural puncture and drainage of the pleural cavity. Treatment. Primary and secondary prevention. Prognosis and work ability.

Topic 5. Infectious-destructive diseases of the bronchopulmonary system: lung abscess and gangrene, bronchiectasis.

Definition. Factors contributing to development. Clinical features, diagnosis of various variants. The value of radiological and endoscopic examination. Differential diagnosis. Complications. Treatment. Indications for surgical treatment. Primary and secondary prevention. Prognosis and work ability.

Topic 6. Chronic (non-obstructive) bronchitis. Chronic obstructive pulmonary disease.

Definition. Value of smoking, environmental, occupational factors and infection in the development of chronic bronchitis. Classification. Clinical manifestations of the changes at additional instrumental methods depending on the stage (severity). Differential diagnosis. Complication. Treatment depending on the severity. Primary and secondary prevention. Prognosis and work ability.

Topic 7. Bronchial asthma.

Definition. Etiology, pathogenesis, features. Classification. Clinical manifestations and changes at instrumental methods depending on the severity. Differential diagnosis. Complication. Treatment depending on the severity. The role of peak flowmetry. Emergency care in asthma attack. Primary and secondary prevention. Prognosis and work ability.

Topic 8. Emergency care for an attack of bronchial asthma. Asthmatic status: tactics of patient management.

Content module 2: Basics of diagnosis, treatment and prevention of the main diseases of the blood and blood-forming organs

Topic 9. Anemias (iron-deficient, B12-deficient, folic-deficient, hemolytic, hypoplastic, posthemorrhagic).

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. Transfusion of blood components and blood. Primary and secondary prevention. Prognosis and work ability.

Topic 10. Acute and chronic leukemias. Leukemoid reactions.

Definition. Modern views on etiology and pathogenesis. Classification. Main clinical and hematological syndromes. Clinical manifestations. Diagnosis criteria. Differential diagnosis. Complication. Principles of treatment. Bone marrow transplantation Supportive therapy. Primary and secondary prevention. Prognosis and work ability.

Topic 11. Lymphomas and myeloma disease. Thrombocytopenic purpura. Hemophilia.

Definition and classification. Hodgkin's and non-Hodgkin's lymphomas. Clinical manifestations and their features in different variants of the course. Diagnosis criteria. Differential diagnosis. Complication. Principles of treatment. Prevention. Prognosis and work ability. **Thrombocytopenic purpura and hemophilia.** Definition. Etiology and pathogenesis, main clinical syndromes. Diagnosis criteria. Differential diagnosis. Treatment. Therapy of various hemophilias. Prevention of bleeding. Primary and secondary prevention. Prognosis and work ability.

Topic 12. Individual student research work (Presentation of the results of individual work and their defense).

Module control 2.

Final module control in pulmonology and hematology.

Curation of patients for writing a course case history.

Defense of the course case history.

Summarizing the results of training in the discipline.

MODULE 3. THE BASICS OF DIAGNOSIS, TREATMENT AND PROPHYLAXIS OF MAJOR ENDOCRINE DISEASES

Content module 1: Diabetes Mellitus

Topic 1. Diabetes mellitus, epidemiology, etiology, pathogenesis, diagnosis, clinic, classification, differential diagnosis.

Definition of diabetes mellitus (DM). Epidemiology of diabetes, morbidity forecast, prevalence of diabetes in different age groups. Etiological classification of diabetes (WHO, 1999). Etiology and pathogenesis of diabetes. Diabetes mellitus type 1. The role of viral infection and autoimmune processes, genetic predisposition. Diabetes mellitus type 2. The role of genetic predisposition, obesity, external factors. Insulin resistance and impaired insulin secretion. Laboratory diagnosis of diabetes. Indications and rules for the glucose tolerance test. Diagnostic value of determination of glycated hemoglobin, fructosamine, C-peptide, glucosuria, ketonuria.

Clinical and laboratory characteristics of different types of diabetes, their differential diagnosis. Classification of glycemic disorders (WHO, 1999). Criteria for diagnosing diabetes and prediabetes (ADA 2020 recommendations). Criteria for compensation of carbohydrate metabolism in patients with diabetes mellitus.

Topic 2. Chronic complications of diabetes mellitus. Peculiarities of the course of accompanying pathology in patients with diabetes mellitus.

Diabetic angiopathy. Etiopathogenesis, classification. Diabetic nephropathy, diagnosis, differential diagnosis, treatment and prevention. Diabetic retinopathy: diagnosis, prevention and treatment. Diabetic foot: classification, diagnosis, treatment. Diabetic neuropathy, classification, diagnosis and treatment. Diabetic dermatopathy, osteoarthropathy, cataract: etiopathogenesis, diagnosis, clinic. The concept of dispensation of patients with diabetes.

Management of patients with diabetes and hypertension, coronary heart disease (target blood pressure indicators, drugs of choice for treatment, concepts of cardiovascular risk), dyslipidemia (target levels of lipid profile indicators, drugs for correction).

Formulation of the diagnosis of diabetes (determination of type, degree of severity, state of compensation, complications).

Topic 3. Non-pharmacological treatment of diabetes mellitus. Non-insulin glucose-lowering treatment of diabetes mellitus.

Diet therapy for type 1 diabetes (principles of calculating bread units). Lifestyle modification in patients with prediabetes and type 2 diabetes (patient counseling on healthy eating, physical activity, and smoking cessation).

Sanatorium-resort treatment. Oral hypoglycemic drugs: sulfonylurea derivatives, nonsulfonylurea insulin secretogens, biguanides, glitazones, alphaglucosidase inhibitors, DPP-4 inhibitors, sodium glucose cotransporter type 2 inhibitors.

Parenteral hypoglycemic drugs: amylin analogs, GLP-1 receptor agonists. Characteristics of drugs, their mechanism of action, side effects, indications and contraindications. ADA and EASD guidelines for the management of type 2 diabetes mellitus (2020 revision).

Topic 4. Insulin therapy of diabetes mellitus.

Insulin therapy. Characteristics of the main insulin preparations. Indications, contraindications. Classification of insulin preparations, ultra-short-, short-, medium- and long-acting preparations, insulin analogs. Calculation of the daily need for insulin. Correction of the dose of insulin with the help of bread units. Regime of insulin therapy: traditional and intensified insulin therapy. Complications of insulin therapy: hypoglycemic states, insulin allergy, post-injection lipodystrophy, insulin resistance, chronic insulin overdose (Somoji syndrome), insulin edema.

Principles of treatment of pregnant women with diabetes. Peculiarities of urgent and planned surgical interventions in patients with diabetes.

Topic 5. Gestational diabetes. Features of the course of diabetes in children and the elderly.

Diabetes and pregnancy.

Diabetes and pregnancy. Features of the course of diabetes in children and the elderly. Differential diagnosis of diabetes syndrome: other types of hyperglycemia, glucosuria and polyuria, polydipsia. Medicines that affect the level of glycemia. Differential diagnosis of diabetes syndrome: other types of hyperglycemia, glucosuria and polyuria, polydipsia.

Topic 6. Acute complications of diabetes mellitus.

Etiopathogenesis, classification, clinical manifestations, diagnosis, differential diagnosis, intensive care of diabetic ketoacidosis (coma), hyperglycaemic hyperosmolar state (coma), lactic acidosis (coma), hypoglycaemic state (coma).

Content module 2: Diseases of the thyroid gland and parathyroid glands.

Topic 7. Diseases of the thyroid gland. Classification. Diagnostic methods. Iodine deficiency diseases of the thyroid gland.

Definition of the concept of "iodine deficiency states". Epidemiology of iodine deficiency in Ukraine and the world. Manifestations of iodine deficiency. Determination of iodine-deficient areas according to the prevalence of goiter in different age groups and ioduria data. Classification of goiter (WHO, 1994). The definition of "goiter". The concept of endemic non-toxic and nodular forms of goiter. The influence of exogenous environmental factors and man-made disasters at nuclear energy facilities on the state of the thyroid gland and the prevalence of its pathology. Iodine prevention: mass, group, individual. The importance of using iodized salt in the prevention of iodine deficiency diseases. Restrictions on the use of preparations based on potassium iodide.

Topic 8. Thyrotoxicosis. Treatment of patients with thyrotoxicosis.

Diseases accompanied by thyrotoxicosis. Diffuse toxic goiter: etiology, pathogenesis, clinical manifestations. Thyrotoxic and endocrine ophthalmopathy. Age characteristics of the course of toxic goiter in children and the elderly. Clinical differences of nodular toxic goiter (toxic adenoma). Justification of the diagnosis of thyrotoxicosis. Nodular forms of goiter. Monitoring of patients with thyroid nodules. Pathomorphological classification of tumors of the thyroid gland. Justification of the diagnosis of thyroid cancer. The role of the accident at the Chernobyl nuclear plant in the increase in the incidence of thyroid cancer. Modern scheme of treatment, rehabilitation and dispensary observation of thyroid cancer patients.

Pharmacological and surgical treatment of toxic goiter, use of ¹³¹I-iodine for therapeutic purposes. Complications: thyrotoxic crisis (etiopathogenesis, clinic, emergency therapy, prevention). Medical and social examination of patients with toxic goiter.

Topic 9. Hypothyroidism. Thyroiditis. Classification, diagnosis, clinical picture, treatment.

Hypothyroidism, etiology, pathogenesis and clinical signs. Justification of the diagnosis. Primary, central, peripheral, subclinical, transient hypothyroidism. Timely diagnosis of congenital hypothyroidism. Age characteristics of the course of hypothyroidism. Hypothyroidism on the background of autoimmune polyendocrinopathies. Subclinical hypothyroidism. Treatment of hypothyroidism. Pregnancy and hypothyroidism. Medical and social examination of patients with hypothyroidism.

Thyroiditis, classification, etiology, clinical course, diagnosis, treatment. Differential diagnosis of thyroiditis with acute and subacute clinical course. Chronic thyroiditis. Justification of the diagnosis of autoimmune thyroiditis.

Topic 10. Diseases of parathyroid glands.

Hyperparathyroidism. Etiology. Pathogenesis. Classification. Clinic, clinical forms of hyperparathyroidism. Diagnostics. Differential diagnosis. Treatment. Indications for surgical treatment. Postoperative period and rehabilitation of patients. Drug therapy. Hypoparathyroidism. Etiology. Pathogenesis. Classification. Clinic. Diagnosis, differential diagnosis. Prognosis. Prevention. Treatment. Clinical forms.

Content module 3: Diseases of the hypothalamic-pituitary system, adrenal glands, reproductive system.

Topic 11. Hypocorticism. Chronic adrenal insufficiency (Addison's disease): etiopathogenesis, clinical features, diagnostics, treatment. Acute adrenal insufficiency.

Chronic adrenal insufficiency (Addison's disease). Etiology, pathogenesis, clinical features, diagnostics, prevention and treatment. Acute adrenal insufficiency. Chronic adrenal insufficiency (Addison's disease). Etiology, pathogenesis, clinical features, diagnostics, prevention and treatment. Acute adrenal insufficiency. Etiology, pathogenesis, clinical features, diagnostics, prevention and treatment.

Topic 12. Hypercorticism. Cushing's disease and syndrome. Adreno-genital syndrome. Itsenko-Cushing's disease. Etiology and pathogenesis. Classification. Clinic. Diagnosis and differential diagnosis. Treatment. Corticosteroma (glucosteroma). Clinic, diagnosis and differential diagnosis, treatment. Androsteroma. Clinic, diagnosis and differential diagnosis, treatment. Definition of congenital adrenal hyperplasia. Clinical forms, diagnosis, treatment.

Topic 13. Hormonally active tumors of the adrenal glands. Pheochromocytoma, Kohn's syndrome (primary hyperaldosteronism): clinic, diagnosis, differential diagnosis, treatment.

Classification of tumors of the adrenal glands. Primary hyperaldosteronism (Kohn's syndrome). Clinic, diagnosis and differential diagnosis, treatment. Pheochromocytoma. Clinic, diagnosis and differential diagnosis, treatment.

Topic 14. Disorders of hypothalamus and pituitary gland: hypopituitarism, growth failure, diabetes insipidus.

Endocrine and non-endocrine obesity: clinic, diagnosis, treatment. Classification of hypothalamic-pituitary diseases. Acromegaly and gigantism. Etiology and pathogenesis. Clinic. Diagnosis and differential diagnosis. Treatment. Hyperprolactinemia. Classification. Etiology and pathogenesis. Clinic. Diagnosis, differential diagnosis. Treatment. Hypopituitarism. Etiology and pathogenesis. Clinic. Diagnosis and differential diagnosis. Treatment. Diabetes insipidus. Etiology and pathogenesis. Clinic. Diagnosis and differential diagnosis. Treatment. Somatotrophic insufficiency. Classification. Etiology and pathogenesis. Clinic. Diagnosis and differential diagnosis. Treatment. Obesity. Etiology and pathogenesis. Classification. Clinic. Diagnostics. Treatment. Obesity in children and adolescents. Metabolic syndrome.

Topic 15. Reproductive system disorders: pathological climax, hypogonadism, premature puberty. Sex hormones. Congenital disorders of sexual differentiation. Gonad agenesis. Shereshevsky-Turner syndrome. Hermaphroditism syndrome. Cryptorchidism. Mono- and anorchidism syndrome. Klinefelter syndrome. Disorders of sexual development in boys and girls. Climax in women and men.

Individual student research work (Presentation of the results of individual work and their defense).

Final module control in endocrinology

MODULE 4. MEDICAL GENETICS

Content module 1: Basics of diagnosis, treatment and prevention of major hereditary diseases

Topic 1. INTRODUCTION TO MEDICAL GENETICS. PEDIGREE COMPILATION. Phenotype description. Minor developmental anomalies. Genetic glossary. Own pedigree. Pedigree compilation with monogenic diseases.

Topic 2. FUNDAMENTALS OF GENETICS. MENDEL'S LAWS. MINOR DEVELOPMENTAL ANOMALIES. PHENOTYPE CHANGES. The subject and tasks of medical genetics. The role of heredity in human pathology. General genetics. Mendel's laws. Dysmorphic child.

Topic 3. MONOGENEIC DISEASES. HEREDITARY DISORDERS OF EXCHANGE. ORPHAN DISEASES. Common monogenic pathology. Registers of orphan diseases.

Topic 4 CHROMOSOMAL BASIS OF HEREDITY. CHROMOSOMAL SYNDROMES. General characteristics of chromosomal diseases. Clinical picture of the main forms of chromosomal diseases.

Topic 5 CONGENITAL DEFECTS. Classification, diagnosis, treatment, prevention.

Topic 6 PREVENTION OF CONGENITAL AND HEREDITARY PATHOLOGY. Levels and ways of prevention of hereditary diseases. Medical and genetic counseling. Prenatal diagnosis. Screening programs. Neonatal screening.

Topic 7 UNTRADITIONAL TYPES OF INHERITANCE. General characteristics of mitochondrial pathology. Clinic, diagnosis, treatment.

Topic 8. Multifactorial pathology.

Topic 9. Molecular genetics. Molecular and genetic diagnosis of hereditary diseases.

Individual student research work (Presentation of the results of individual work and their defense).

Final module control in medical genetics.

6.2. The structure of the discipline

Titles of content modules and topics	Number of hours			
	Form of study: daytime			
	Total	including		
lectures		laboratory classes	Individual work	
MODULE 1				
FUNDAMENTALS OF DIAGNOSTIC, TREATMENT AND PREVENTION OF THE MAIN DISEASES OF THE DIGESTIVE ORGANS. GENERAL ISSUES OF INTERNAL MEDICINE				
Content module 1: Basics of diagnosis, treatment and prevention of the main diseases of the digestive organs				
Topic 1. Introduction to internal medicine. Method of clinical examination of the patient. Research methods in gastroenterology. Main groups of drugs in gastroenterology.	4	1	2	1
Topic 2. Dyspepsia: functional and organic. Diagnostic criteria. Differential diagnosis. Modern approaches to the treatment of functional dyspepsia.	3		2	1
Topic 3. Gastroesophageal reflux disease. Erosive and non-erosive GERD. Barrett's esophagus.	7	1	4	2
Topic 4. Chronic gastritis, gastroduodenitis. Treatment of Hp associated diseases according to Maastricht V and VI.	7	1	4	2
Topic 5. Peptic ulcer disease (peptic ulcer and other ulcers of the stomach and duodenum). Gastrointestinal bleeding, malignant tumors of the stomach.	7	1	4	2
Topic 6. Functional biliary disorders (dysfunction of the gallbladder and sphincter of Oddi), chronic non-calculous cholecystitis, cholangitis. Gallstone disease.	8	2	4	2
Topic 7. Chronic hepatitis of non-infectious origin. Chronic viral hepatitis. Diagnosis of the degree of liver fibrosis. Treatment. Antiviral therapy. Primary and secondary prevention.	7	1	4	2
Topic 8. Liver cirrhosis Portal hypertension. Diagnosis and treatment.	8	1	4	3
Topic 9. Metabolically associated fatty liver disease (non-alcoholic fatty liver disease or steatotic liver).	8	2	4	2
Topic 10. Small bowel diseases: chronic enteritis, celiac disease	7	1	4	2

and non-celiac gluten intolerance.				
Topic 11. Functional bowel diseases: Irritable bowel syndrome (IBS). Rome criteria IV. Chronic colon diseases: non-ulcerative colitis. Diagnostic criteria. Differential diagnosis.	7	1	4	2
Topic 12 Inflammatory bowel diseases of non-infectious origin: ulcerative colitis and Crohn's disease.	6		4	2
Topic 13. Chronic pancreatitis. Diagnosis. Complications. Treatment.	6	2	2	2
Topic 14. Gastroenterological emergencies: gastrointestinal bleeding, acute liver failure, biliary colic.	4		2	2
Presentation of the results of individual work and their defense.	6		4	2
Module control work 1.	6		4	2
Final module control in gastroenterology.				
Total for CM 1	101	14	56	31
Total for Module 1	104	14	56	31
MODULE 2. FUNDAMENTALS OF DIAGNOSTIC, TREATMENT AND PREVENTION OF THE MAIN RESPIRATORY DISEASES. FUNDAMENTALS OF DIAGNOSTIC, TREATMENT AND PREVENTION OF THE MAIN DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS				
Content module 1: Basics of diagnosis, treatment and prevention of the main respiratory diseases				
Topic 1. Examination methods in pulmonology. Respiratory failure. Main groups of drugs in pulmonology.	6		4	2
Topic 2. Pneumonia. Community-acquired pneumonia.	8	2	4	2
Topic 3. Pneumonia. Hospital-acquired (nosocomial) pneumonia	4		2	2
Topic 4. Pleurisy. Clinical analysis of patients.	6		4	2
Topic 5. Infectious-destructive diseases of the bronchopulmonary system: lung abscess and gangrene, bronchiectasis.	8		4	4
Topic 6. Chronic non-obstructive bronchitis. Chronic obstructive pulmonary disease (COPD).	8	2	4	2
Topic 7. Bronchial asthma.	10	2	4	4
Topic 8. Emergency care for an attack of bronchial asthma. Asthmatic status: tactics of patient management.	4		2	2
Total for CM 1	54	6	28	20
Content module 2: Basics of diagnosis, treatment and prevention of the main diseases of the blood and hematopoietic organs				
Topic 9. Anemias.	6	2	2	2
Topic 9. Acute and chronic leukemias. Leukemoid reactions.	8	1	4	3
Topic 10. Lymphomas and myeloma disease. Thrombocytopenic purpura. Hemophilia.	8	1	4	3
Presentation of the results of individual work and their defense.	6		4	2
Module control work 2.	4		2	2
Final module control in pulmonology and hematology.				
Total for CM 2	32	4	16	12
Total for Module 2	86	10	44	32
Curation of patients for writing a case history.	4		2	2
Course case history defense.	2		2	
Summarizing the results of training in the discipline	2		2	
Total	8		6	2
TOTAL for Module 1 and 2	195	24	106	65
MODULE 3. THE BASICS OF DIAGNOSIS, TREATMENT AND PREVENTION OF MAJOR ENDOCRINE DISEASES				
Content module 1: Diabetes Mellitus				
Topic 1. Diabetes mellitus, epidemiology, etiology, pathogenesis, diagnosis, clinic, classification, differential	5	2	2	1

diagnosis.				
Topic 2. Chronic complications of diabetes mellitus. Features of the course of comorbidities in patients with diabetes.	4		2	2
Topic 3. Non-pharmacological treatment of diabetes mellitus. Non-insulin glucose-lowering treatment of diabetes mellitus.	3		2	1
Topic 4. Insulin therapy of diabetes mellitus.	4		2	2
Topic 5. Gestational diabetes. Features of the course of diabetes in children and the elderly. Diabetes and pregnancy.	5	2	2	1
Topic 6. Acute complications of diabetes mellitus. Comatose states in diabetes. Control test for content module 1.	3		2	1
Total for CM 1	24	4	12	8
Content module 2: Thyroid and parathyroid gland diseases				
Topic 7. Diseases of the thyroid gland. Classification. Diagnostic methods. Iodine deficiency diseases of the thyroid gland.	6	2	2	2
Topic 8. Thyrotoxicosis. Treatment of patients with thyrotoxicosis.	2		2	
Topic 9. Hypothyroidism. Thyroiditis. Classification, diagnosis, clinic, treatment.	4		2	2
Topic 10. Parathyroid gland diseases. Control test for content module 1.	4		2	2
Total for CM 2	16	2	8	6
Content module 3: Diseases of the hypothalamic-pituitary system, adrenal glands, reproductive system.				
Topic 11. Hypocorticism. Chronic adrenal insufficiency (Addison's disease): etiopathogenesis, clinic, diagnosis, treatment. Acute adrenal insufficiency.	5	2	2	1
Topic 12. Hypercorticism. Cushing's disease and syndrome. Adrenogenital syndrome.	3		2	1
Topic 13. Hormonally active tumors of the adrenal glands. Pheochromocytoma, Kohn's syndrome (primary hyperaldosteronism): clinic, diagnosis, differential diagnosis, treatment.	3		2	1
Topic 14. Diseases of the hypothalamic-pituitary system: hypopituitarism, growth disorders, diabetes insipidus. Endocrine and non-endocrine obesity: clinic, diagnosis, treatment.	4	2	1	1
Topic 15. Diseases of gonads: pathological climax, hypogonadism, premature puberty. Control test for content module 3	1		1	
Case history defense. Presentation of the results of individual work and their defense. Final module control.	4		2	2
Total for CM 3	20	4	10	6
Total for Module 3	60	10	30	20
MODULE 4. MEDICAL GENETICS				
Content module 1: The basics of diagnosis, treatment and prevention of major hereditary diseases				
Topic 1. Introduction to medical genetics. Compilation of pedigrees	2		2	
Topic 2. Fundamentals of genetics. Mendel's laws. Small anomalies of development. Phenotype changes.	2		2	2
Topic 3. Monogenic diseases. Hereditary metabolic disorders. Orphan diseases.	4	2	2	
Topic 4. Chromosomal bases of heredity. Chromosomal syndromes.	4	2	2	

Topic 5. Congenital malformations.	4		2	2
Topic 6. Prevention of congenital and hereditary pathology.	4	2	2	
Topic 7. Non-traditional types of inheritance.	2			2
Topic 8. Multifactorial pathology.	2			2
Topic 9. Molecular genetics. Molecular and genetic diagnosis of hereditary diseases.	2			2
Final module control in medical genetics.			2	
Total for CM 1	30	6	14	10
Total for Module 4	30	6	14	10
TOTAL	285	40	150	95

6.3. Lecture topics

№	Topic title	Number of hours,
1.	Introduction to internal medicine. Method of clinical examination of the patient. Gastroesophageal reflux disease. Erosive and non-erosive GERD.	2
2.	Dyspepsia: functional and organic. Chronic gastritis, gastroduodenitis. Peptic ulcer disease (peptic ulcer and other ulcers of the stomach and duodenum). Treatment of Hp associated diseases according to Maastricht V and VI.	2
3.	Functional biliary disorders, chronic non-calculous cholecystitis. Gallstone disease.	2
4.	Chronic hepatitis. Treatment. Antiviral therapy. Liver cirrhosis. Portal hypertension. Diagnosis and treatment.	2
5.	Metabolically associated fatty liver disease (non-alcoholic fatty liver disease).	2
6.	Small bowel diseases: chronic enteritis, celiac disease. Functional bowel diseases: Irritable bowel syndrome (IBS). Rome criteria IV.	2
7.	Chronic pancreatitis. Complications..	2
8.	Pneumonia. Community-acquired pneumonia. Hospital-acquired pneumonia.	2
9.	Chronic non-obstructive bronchitis. Chronic obstructive pulmonary disease (COPD).	2
10.	Bronchial asthma.	2
11.	Anemias.	2
12.	Acute and chronic leukemias. Leukemoid reactions.	2
	Total	24 hours

6.4. Topics of practical classes

№	Topic title	Number of hours	
		Full-time study	Extra mural form of study
MODULE 1 FUNDAMENTALS OF DIAGNOSTIC, TREATMENT AND PREVENTION OF MAIN DISEASES OF THE DIGESTIVE ORGANS. GENERAL ISSUES OF INTERNAL MEDICINE			
Content module 1: Basics of diagnosis, treatment and prevention of the main diseases of the digestive organs			
1	Topic 1. Introduction to internal medicine. Method of clinical examination of the patient. Research methods in gastroenterology. Main groups of drugs in gastroenterology.	2	
2	Topic 2. Dyspepsia: functional and organic. Diagnostic criteria. Differential diagnosis. Modern approaches to the treatment of functional dyspepsia.	2	
3	Topic 3. Gastroesophageal reflux disease. Erosive and non-erosive GERD. Barrett's esophagus. (simulation training).	4	
4	Topic 4. Chronic gastritis, gastroduodenitis. Treatment of Hp associated diseases according to Maastricht V and VI. (simulation training).	4	
5	Topic 5. Peptic ulcer disease (peptic ulcer and other ulcers of the stomach and duodenum). Gastrointestinal bleeding, malignant tumors of the stomach. (simulation training)	4	
6	Topic 6. Functional biliary disorders (dysfunction of the gallbladder and sphincter of Oddi), chronic non-calculous cholecystitis, cholangitis. Gallstone disease. (simulation training)	4	
7	Topic 7. Chronic hepatitis of non-infectious origin. Chronic viral hepatitis. Diagnosis of the degree of liver fibrosis. Treatment. Antiviral therapy. Primary and secondary prevention. (simulation training)	4	
8	Topic 8. Liver cirrhosis Portal hypertension. Diagnosis and treatment. (simulation training)	4	
9	Topic 9. Metabolically associated fatty liver disease (non-alcoholic fatty liver disease or steatotic liver). (simulation training)	4	
10	Topic 10. Small bowel diseases: chronic enteritis, celiac disease and non-celiac gluten intolerance. (simulation training)	4	
11	Topic 11. Functional bowel diseases: Irritable bowel syndrome (IBS). Rome criteria IV. Chronic colon diseases: non-ulcerative colitis. Diagnostic criteria. Differential diagnosis. (simulation training)	4	
12	Topic 12 Inflammatory bowel diseases of non-infectious origin: ulcerative colitis and Crohn's disease. (simulation training)	4	
13	Topic 13. Chronic pancreatitis. Diagnosis. Complications. Treatment.	2	
14	Topic 14. Gastroenterological emergencies: gastrointestinal bleeding, acute liver failure, biliary colic.	2	
15	Presentation of the results of individual work and their defense	4	
	Module control work 1. Final module control in gastroenterology.	4	
Total for CM 1		56	
TOTAL for Module 1		56	
Including simulation training (Module 1)		20	
MODULE 2 FUNDAMENTALS OF DIAGNOSTIC, TREATMENT AND PREVENTION OF THE MAIN RESPIRATORY DISEASES. FUNDAMENTALS OF DIAGNOSTIC, TREATMENT AND PREVENTION OF THE MAIN DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS			
Content module 1: Basics of diagnosis, treatment and prevention of the main respiratory diseases			
1	Topic 1. Examination methods in pulmonology. Respiratory failure. Main groups of drugs in pulmonology.	4	

2	Topic 2. Pneumonia. Community-acquired pneumonia. (simulation training)	4	
3	Topic 3. Pneumonia. Hospital-acquired (nosocomial) pneumonia	2	
4	Topic 4. Pleurisy. Clinical analysis of patients.	4	
5	Topic 5. Infectious-destructive diseases of the bronchopulmonary system: lung abscess and gangrene, bronchiectasis.	4	
6	Topic 6. Chronic non-obstructive bronchitis. Chronic obstructive pulmonary disease (COPD). (simulation training)	4	
7	Topic 7. Bronchial asthma. (simulation training)	4	
8	Topic 8. Emergency care for an attack of bronchial asthma. Asthmatic status: tactics of patient management.	2	
	Total for CM 1	28	
	Content module 2: Basics of diagnosis, treatment and prevention of the main diseases of the blood and hematopoietic organs		
8	Topic 8. Anemias. (simulation training).	2	
9	Topic 9. Acute and chronic leukemias. Leukemoid reactions. (simulation training).	4	
10	Topic 10. Lymphomas and myeloma disease. Thrombocytopenic purpura. Hemophilia.	4	
11	Presentation of the results of individual work and their defense	4	
12	Module control work 2. Final module control in pulmonology and hematology.	2	
	Total for CM 2	16	
13	Curation of patients for writing a case history.	2	
14	Defense of course medical history.	2	
15	Summarizing the results of training in the discipline.	2	
	TOTAL for Module 2	44	
	Including simulation training (Module 2)	10	
	Including simulation training (Modules 1 and 2)	30 of 104	28,8%
MODULE 3 The basics of diagnosis, treatment and prevention of major endocrine diseases			
	Content module 1: Diabetes Mellitus		
1	Diabetes mellitus, epidemiology, etiology, pathogenesis, diagnosis, clinic, classification, differential diagnosis.	2	
2	Chronic complications of diabetes mellitus. Features of the course of comorbidities in patients with diabetes. (simulation training).	2	
3	Non-pharmacological treatment of diabetes mellitus. Non-insulin glucose-lowering treatment of diabetes mellitus.	2	
4	Insulin therapy of diabetes mellitus (simulation training).	2	
5	Gestational diabetes. Features of the course of diabetes in children and the elderly. Diabetes and pregnancy.	2	
6	Acute complications of diabetes mellitus. Comatose states in diabetes. Control work for content module 1	2	
	Content module 2: Thyroid and parathyroid gland diseases		
7	Diseases of the thyroid gland (thyroid). Classification. Diagnostic methods. Iodine deficiency diseases of the thyroid gland.	2	
8	Thyrotoxicosis. Treatment of patients with thyrotoxicosis (simulation training).	2	
9	Hypothyroidism. Thyroiditis. Classification, diagnosis, clinic, treatment (simulation training).	2	
10	Parathyroid gland diseases. Control work for content module 2.	2	
	Content module 3: Diseases of the hypothalamic-pituitary system, adrenal glands, reproductive system.		
11	Hypocorticism. Chronic adrenal insufficiency (Addison's disease): etiopathogenesis, clinic, diagnosis, treatment. Acute adrenal insufficiency (simulation training).	2	
12	Hypercorticism. Cushing's disease and syndrome. Adrenogenital syndrome.	2	

13	Hormonally active tumors of the adrenal glands. Pheochromocytoma, Kohn's syndrome (primary hyperaldosteronism): clinic, diagnosis, differential diagnosis, treatment.	2	
14	Diseases of the hypothalamic-pituitary system: hypopituitarism, growth disorders, diabetes insipidus. Endocrine and non-endocrine obesity: clinic, diagnosis, treatment.	1	
15	Diseases of the gonads: pathological climax, hypogonadism, premature puberty. Control work for content module 3	1	
16	Case history defense. Presentation of the results of individual work and their defense. Final module control in Module 3	2	
	TOTAL for Module 3	30	-
	Including simulation training (Module 3)	9	30%
MODULE 4 Medical genetics			
	Content module 1: The basics of diagnosis, treatment and prevention of major hereditary diseases		
1	Introduction to medical genetics. Compilation of pedigrees	2	
2	Fundamentals of genetics. Mendel's laws. Small anomalies of development. Phenotype changes.	2	
3	Monogenic diseases. Hereditary metabolic disorders. Orphan diseases (simulation training).	2	
4	Chromosomal bases of heredity. Chromosomal syndromes (simulation training).	2	
5	Birth defects. Congenital malformations.	2	
6	Prevention of congenital and hereditary pathology.	2	
7	Final module control in medical genetics	2	
	TOTAL for Module 4	14	
	Including simulation training (Module 4)	4	28.5%
	TOTAL	150	-
	Including simulation training (CC29)	43	28.6%

6.5. Self-study

Module 1. Gastroenterology

№	Topic title	Number hours	
		Full-time study	Extramural form of study
1	Introduction to internal medicine. The method of clinical examination of the patient. Medical case history. Clinical diagnosis.	2	
2	Main symptoms of digestive pathology. Research methods in gastroenterology. Principles of treatment and main groups of drugs in gastroenterology.	2	
3	Gastroesophageal reflux disease. Functional dyspepsia.	2	
4	Chronic gastritis, duodenitis.	2	
5	Peptic ulcer disease (peptic ulcer and other ulcers of the stomach and duodenum).	2	
6	Functional biliary and sphincter of Oddi disorders. Chronic acalculous cholecystitis, gallstone disease.	2	
7	Chronic hepatitis.	2	
8	Liver cirrhosis Curation of patients.	2	
9	Chronic pancreatitis.	2	

10	Chronic enteropathies: enteritis, celiac disease and others enteropathies	2	
11	Chronic bowel diseases: irritable bowel syndrome, non-ulcerative colitis.	2	
12	Immunoinflammatory bowel diseases: ulcerative colitis and Crohn's disease.	2	
13	Obesity and its general medical and social consequences. Metabolic syndrome is a multi-organ, interdisciplinary problem. Methods for calculating excess weight (body mass index).	1	
14	Metabolic-associated diseases in gastroenterology. Metabolic-associated fatty liver disease (non-alcoholic fatty liver disease).	1	
15	Principles of evidence-based medicine. Diagnosis and treatment of diseases of internal organs in the elderly.	1	
16	Curation of gastroenterological patients.	1	
17	Module control work 1. Final module control in gastroenterology	2	
	Total	30	

Module 2. Pulmonology and hematology

№	Topic title	Number hours	
		Full-time study	Extramural form of study
1	The main symptoms of pulmonary pathology and examination methods in pulmonology. Principles of treatment of the main symptoms of respiratory pathology	1	
2	Pneumonia.	1	
3	Chronic (non-obstructive) bronchitis. Chronic obstructive pulmonary disease.	2	
4	Bronchial asthma.	4	
5	Pleurisy. Pleural effusion.	4	
6	Infectious-destructive diseases of the bronchopulmonary system: bronchiectasis, lung abscess and gangrene	4	
7	Acute and chronic respiratory failure. Curation of the patients.	4	
8	Anemias.	2	
9	Acute and chronic leukemias.	3	
10	Lymphomas. Myeloma disease. Thrombocytopenic purpura. Hemophilia.	4	
11	Defense of abstracts in pulmonology and hematology. Curation of patients for writing case history.	4	
12	Module control work 2. Final module control in pulmonology and hematology.	2	
	Total	35	

Module 3. Endocrinology

№	Topic title	Number hours	
		Full-time study	Extramural form of study
1	Mastering the skills to analyze the data of laboratory research methods in patients with diabetes (glucose tolerance test, glycemic and glucosuric profile, C-peptide, H _v A1c)	2	
2	Mastering the skills of determining the degree of goiter	2	
3	Mastering the skills of interpreting the data of radioisotope, ultrasound examination and dopplerography of the thyroid gland	2	
4	Mastering the skills of interpreting the results of ECG and reflexometry to characterize the function of the thyroid gland	2	
5	Mastering the skills of interpretation of hormonal examination data, ultrasound examination, arteriography of adrenal glands	2	
6	Mastering the skills of interpretation of computer tomography data, MRI of adrenal glands; interpretation of craniogram data, CT data, and MRI of the skull	2	
7	Mastering the skills of determining the degree of obesity by BMI	2	
8	Mastering the skills of assessing physical and sexual development; interpretation of "bone age" according to X-ray data.	2	
	Individual work:		
9	Curation of the patient with writing the case history	2	
10	Presentation of the abstract at the practical session	2	
	Total	20	

Module 4. Medical genetics

№	Topic title	Number hours	
		Full-time study	Extramural form of study
1	Fundamentals of genetics. Mendel's laws. Minor developmental anomalies. Phenotype changes.	2	
2	Congenital malformations. Birth defects	2	
3	Non-traditional types of inheritance.	2	
4	Multifactorial pathology	2	
5	Molecular genetics. Molecular genetic diagnostics of hereditary diseases.	2	
	Total	10	

6.6. Individual tasks

Curation of one patient with writing a case history, preparing presentation on the topics of Modules 1, 2 and 3.

Curation of the patient involves:

- clarifying the patient's complaints, history of present illness and life, conducting a survey for organs and systems;
- conducting a physical examination of the patient and determining the main symptoms of disease;
- data analysis of laboratory and instrumental examination of the patient;
- establishing a diagnosis, differential diagnosis;
- prescription of treatment tactics;
- assessment of prognosis and work capacity;
- determination of primary and secondary prevention measures.

Scheme of the Case History is downloaded on e-learn.

Individual task for module 4 – Making Own Pedigree (Family Chart). PDF document on e-learn “Pedigree Symbols and Instruction in Making Pedigree Chart” and video instruction.

7. TOOLS, EQUIPMENT AND SOFTWARE THE USE OF WHICH IS PROVIDED FOR THE EDUCATIONAL SUBJECT

(if necessary)

Educational discipline CC 29 "**Internal medicine, including endocrinology, medical genetics**" provides for the curation of patients.

Devices for measuring blood pressure, phonendoscopes, glucometers RIGHTEST BIONIME GM550 with test strips ELSA/GS550, (2019), electrocardiograph, spiograph, peak flowmeters, computer spirometry, pulse oximeters, thermometers, rapid test systems, mannequins are used for the educational process.

Students also get to know the operation of the endoscopy room and functional diagnostics room, where there is a gastrointestinal videoscope Olympus GIF-XP170N, Olympus GIF-H170 (2018) and a video colonoscope CF-H170L/I (2018), ultrasound system CX50, Philips Ultrasound, Inc, Label PN 453561952821 , (2022) (in joint use with the Uzhhorod Central City Clinical Hospital) and a biodensitometer for determining body components (in joint use with the Department of Physiology).

In addition, didactic materials are used:

- plans of practical classes
- tasks for individual work
- methodological instructions/recommendations for students and teachers
- algorithms for treatment and emergency care (according to the standards of evidence-based medicine)
- algorithms for performing practical skills, medical manipulations, video films
- results of laboratory and instrumental research methods
- dummies, phantoms
- questions, situational tasks, assignments or cases for current and final control.
- electronic bank of test tasks, situational tasks.
- laptop (type #1) Lenovo V15-ADA
- stationary personal computer No. 2 FC 210;
- UzhNU e-learning website: <https://e-learn.uzhnu.edu.ua>

8. RECOMMENDED SOURCES OF INFORMATION

Basic sources

1. Davidson's Principles and Practice of Medicine / Edited by Stuart H Ralston, Ian D Penman, Mark WJ Strachan, Richard P Hobson, 23 edition. – Elsevier, 2018. – 1440 p.
2. Harrison's Endocrinology / 4nd Edition, by J.L. Jameson. — The McGraw-Hill Companies, Inc, 2016. — 608 p.
3. Harrison's Principles of Internal Medicine 20/E (Vol. 1 & vol. 2) (ebook) 20 th edition / Dennis L. Kasper , Anthony S. Fauci , Stephen L. Hauser , Dan L. Longo, J. Larry Jameson, Joseph Loscalzo. – McGraw Hill Professional, 2018. – 4048 p, 3528 p
4. Medical Genetics 6th Edition by Lynn B. Jorde, John C. Carey, Michael J. Bamshad. - Elsevier, 2019. – 352 p.
5. Principles of internal medicine (endocrinology, gastroenterology, hematology, pulmonary diseases). Study guide for 4th course students / Edited by prof Svitlana Smiyan. – 2021. – 474 p.

Additional sources

1. Erika Patskun. Methodological Development in Medical Genetics. Minor Anomalies, Phenotypic changes. Uzhhorod: TOB «PIK-Y», 2021. 11 p.;
2. Erika Patskun. Methodological Development in Medical Genetics. The Basis of Genetics. Mendel's Laws. Uzhhorod: TOB «PIK-Y», 2021. 11 p.
3. Erika Patskun. Methodological Development in Medical Genetics. Single Gene Disorders. Uzhhorod: TOB «PIK-Y», 2021. 15 p.;
4. Erika Patskun. Methodological Development in Medical Genetics. Inborn Errors of Metabolism. Rare Diseases. Uzhhorod: TOB «PIK-Y», 2021. 11 p.;
5. Erika Patskun. Methodological Development in Medical Genetics. The Chromosomal Basis of Heredity. Chromosome Syndromes. Uzhhorod: TOB «PIK-Y», 2021. 15 p.;
6. Erika Patskun. Methodological Development in Medical Genetics. Birth Defects. Uzhhorod: TOB «PIK-Y», 2021. 31 p.;
7. Erika Patskun. Methodological Development in Medical Genetics. The Prevention of Birth Defects and Hereditary Pathology. Uzhhorod: TOB «PIK-Y», 2021. 15 p.;
8. Erika Patskun. Methodological Development in Medical Genetics. Non-Traditional Types of Inheritance. Mitochondrial Diseases. Uzhhorod: TOB «PIK-Y», 2021. 15 p.
9. Gastroenterology Essentials / T.M. Hanych, M.I. Tovt-Korshynska, M.V. Rostoka-Reznikova. – Uzhhorod, 2019. – 127 p.
10. Hemoptysis: differential diagnosis / Tovt-Korshynska, M.V. Rostoka-Reznikova. – Uzhhorod, 2019. – 40 p.
11. Ivachevska V. V., Shushman I. V., Rostoka-Reznikova M. V. Endocrine disorders. Part I. Uzhhorod: UzhNU; 2021.- 24 p. URL: <https://dspace.uzhnu.edu.ua/jspui/handle/lib/65477>
12. Shushman I.V., Tovt-Korshynska M.I.. Asthma: manual for students (according to GINA recommendations).– Uzhhorod, 2018.- 24 p.
13. Shushman I. V., Tovt-Korshynska M. I. Pocket Guide of Type 2 Diabetes Mellitus (the 2 nd edition, updated). Uzhhorod: UzhNU; 2021.- 24 p.
URL: <https://dspace.uzhnu.edu.ua/jspui/handle/lib/65028>
14. Shushman I. V., Tovt-Korshynska M. I. Type 2 Diabetes Mellitus. Uzhhorod: UzhNU; 2024. - 25 p. URL: <https://dspace.uzhnu.edu.ua/jspui/handle/lib/65476>
15. Бейсюк Г.В., Ігнатко О.І., Ігнатко Л.В., Ігнатко Я.Я., Лізанець Н.В. Management of patients with hemophilia: методичні рекомендації - Ужгород, 2024. - 40 с.
<https://dspace.uzhnu.edu.ua/jspui/handle/lib/63112>
16. Лізанець Н.В., Ігнатко О.І., Гаджега В.М., Ігнатко Л.В., Бейсюк Г.В. Management of patients with anemia : методичні рекомендації - Ужгород, 2024. - 64 с.
<https://dspace.uzhnu.edu.ua/jspui/handle/lib/63110>

Information Internet resources

1. <https://decisionpoint.medscape.com/> - Clinical Guidelines, Expert Perspectives
2. <https://www.medscape.com/public/about> - the leading online global destination for physicians and healthcare professionals worldwide, offering the latest medical news and expert perspectives; essential point-of-care drug and disease information; and relevant professional education and CME.
3. <https://www.medscape.com/gastroenterology> Gastroenterology Basic Information
4. <https://ehaweb.org/> European Hematology Association
5. <https://ginasthma.org/gina-reports/> GINA Report, Global Strategy for Asthma Management and Prevention.
6. <https://goldcopd.org/2022-gold-reports-2/> GLOBAL STRATEGY FOR PREVENTION, DIAGNOSIS AND MANAGEMENT OF COPD: 2022 Report
7. <https://www.pulmonolrespirjournal.com/> Journal of Pulmonology

8. <https://ueg.eu/about/who-we-are> United European Gastroenterology (UEG) organization
9. <https://www.journal-of-hepatology.eu/> Journal of Hepatology
10. <https://professional.diabetes.org> Education program. Podcasts. News about DM.
11. <http://guidelines.diabetes.ca/cpg> International guidelines for DM
12. <https://www.thyroid.org/professionals/ata-professional-guidelines/> International guidelines for diseases of Thyroid gland
13. <http://press.endocrine.org/journal/endo> Medical Journal about endocrine system.
14. <https://www.omim.org/> OMIM: Online Mendelian Inheritance in Man. An Online Catalog of Human Genes and Genetic Disorders. OMIM is a comprehensive, authoritative compendium of human genes and genetic phenotypes that is freely available and updated daily. The full-text, referenced overviews in OMIM contain information on all known mendelian disorders and over 16,000 genes. OMIM focuses on the relationship between phenotype and genotype. It is updated daily, and the entries contain copious links to other genetics resources.
15. <http://ceo.medword.net/> **CLINICAL EYE OPENERS (CEO)** is a veritable **clinical gallery** of images and videos illustrating clinical signs interpreted as signals to accelerate the recognition of potential causes (etiology), mechanisms (pathogenesis), natural history (patterns of past, present and prospective symptoms and clinical prognosis) – **CEO is NOT** a source of information to formulate diagnoses or therapies
16. [International Birth Defects Information System \(I.B.I.S.\) – IBIS is a multi-lingual website dedicated to promoting better care and prevention of birth defects through information sharing \(ibis-birthdefects.org\)](http://ibis-birthdefects.org) International Birth Defects Information System (I.B.I.S.). IBIS is a multi-lingual website dedicated to promoting better care and prevention of birth defects through information sharing
17. <https://www.marchofdimes.org/> March of Dimes. March of Dimes, the nation’s leader in mom and baby health. March of Dimes acquires and analyzes maternal and infant health data and program data to show the current state of the health crisis to inform research and policy change.
18. <https://www.cdc.gov/ncbddd/birthdefects/surveillancemanual/index.html> CDC Centers for Disease Control and Prevention. CDC is the nation’s leading science-based, data-driven, service organization that protects the public’s health. For more than 70 years, we’ve put science into action to help children stay healthy so they can grow and learn; to help families, businesses, and communities fight disease and stay strong; and to protect the public’s health.
19. <https://rarechromo.org/> Unique. Understanding Rare Chromosome and Gene Disorders. An international group, supporting, informing and networking with anyone affected by a rare chromosome disorder or an autosomal dominant single gene disorder and with any interested professionals).
20. <https://www.orpha.net/consor/cgi-bin/index.php> ORPHANET. The portal for rare diseases and orphan drugs. Orphanet is a unique resource, gathering and improving knowledge on rare diseases so as to improve the diagnosis, care and treatment of patients with rare diseases. Orphanet aims to provide high-quality information on rare diseases, and ensure equal access to knowledge for all stakeholders. Orphanet also maintains the Orphanet rare disease nomenclature (ORPHAcode), essential in improving the visibility of rare diseases in health and research information systems.
21. https://rarediseases.org/?s=A&post_type=rare-diseases NORD (National Organization for Rare Disorders), a 501(c)(3) organization, is a patient advocacy organization dedicated to individuals with rare diseases and the organizations that serve them. NORD, along with its more than 300 patient organization members, is committed to the identification, treatment, and cure of rare disorders through programs of education, advocacy, research, and patient services.

**Results of the further review of
the syllabus**

The syllabus was re-approved on 20__ / 20__ academic year unchanged; with changes
(Appendix__).

(underline the correct variant)

Minutes № ____ of " ____ " _____ 20 ____ Head of the Department _____

(Signature) (Surname, initials)

The syllabus was re-approved on 20__ / 20__ academic year unchanged; with changes
(Appendix ____).

(underline the correct variant)

Minutes № ____ of " ____ " _____ 20 ____ Head of the Department _____

(Signature) (Surname, initials)

The syllabus was re-approved on 20__ / 20__ academic year unchanged; with changes
(Appendix ____).

(underline the correct variant)

Minutes № ____ of " ____ " _____ 20 ____ Head of the Department _____

(Signature) (Surname, initials)

The syllabus was re-approved on 20__ / 20__ academic year unchanged; with changes
(Appendix__).

(underline the correct variant)

Minutes № ____ of " ____ " _____ 20 ____ Head of the Department _____

(Signature) (Surname, initials)