

**DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY**

**Department of Internal Medicine N 1**  
**Department of Internal Medicine N 2**



**Approved**

First Vice-Rector for scientific and pedagogical work

Assoc. prof. Iryna SOLONYNKO

“ 30 ” 08 2023

**WORK PROGRAMME OF THE EDUCATIONAL  
ELECTIVE DISCIPLINE**

**"Clinical toxicology"**

**SB 1.50**

**4 years of study**

**training of specialists of the second (master's) level of higher education**

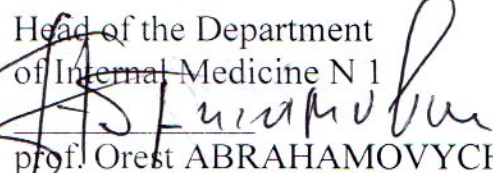
**Field of Knowledge 22 "Health care"**

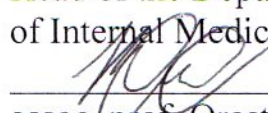
**specialties 222 "Medicine"**

Discussed and approved  
on the methodical meetings  
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protocol N 3 dated 04.05.2023

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## INTRODUCTION

The program of study of the elective discipline "Clinical toxicology" is compiled in accordance with the Educational and Professional Program (EPP) for the training of specialists of the second (master's) level of higher education

fields of knowledge 22 "Health care"  
specialty 222 "Medicine".

### Description of the academic discipline (abstract)

The organizing of the educational process is carried out according to the European Credit Transfer System of the Organization of the Educational Process (ECTS). The program of the optional discipline "Clinical toxicology", which is taught in the 4th year, provides for the improvement of knowledge on topical issues of theory and practice of the main human diseases that arise as a result of the toxic effect of substances of various groups, the main symptoms and syndromes in order to improve treatment, prevent poisoning and improve quality of life and health of the population.

The types of classes according to the curriculum are: a) practical classes, b) independent work of students.

Practical classes are held at the department's clinical facilities. The method of organizing practical classes in the discipline "Clinical toxicology" involves:

- 1) control of the initial level of knowledge with the help of test questions composed in the format of questions with 5 answer options, of which 1 is correct and checking workbooks;
- 2) situational problems and clinical cases on the topic of teaching or curation of patients followed by a discussion of the correctness of establishing a diagnosis, differential diagnosis and treatment measures using the principles of evidence-based medicine and in accordance with National and European guidelines and protocols;
- 3) the results of additional research methods (laboratory and instrumental) and parameters characterizing the functions of the human body, which are used during the diagnosis and differential diagnosis of diseases with toxic lesions by substances of different groups, the consideration of which is provided for by the topic of the practical session;
- 4) monitoring the acquisition of practical skills and medical manipulations.
- 5) control of the final level of knowledge on test tasks.

The independent and individual work of students is an integral part of the educational activity in the elective discipline "Clinical Toxicology" and is included in the ECTS credits of the discipline as a whole. It includes:

- preparation for practical classes;
- implementation and defense of ISRS (reporting of an abstract at a practical session; reporting at clinical conferences of department bases; writing theses, articles; review of scientific literature by topic);
- acquisition of practical skills;
- preparation for the final control;
- writing a workbook on the subject of the lesson.

The teachers of the department provide the opportunity to carry out independent work. During practical classes and final control, control and evaluation of its implementation is carried out.

The Department of Internal Medicine has the right to make changes to the curriculum up to 15.0%. The final control is made at the last practical session by the teacher of the department in accordance with the schedule approved at the educational and methodical meeting of the department. The evaluation of the student's success in the discipline is a rating and is presented on a multi-point scale, taking into account the grades for the entire cycle of the discipline.

For those students who want to improve their grade in a discipline, after completing the study of the discipline, the curriculum provides for a retake period.

If it is not possible to provide curation of patients with diseases according to the topic of the lesson, students consider clinical cases with diseases of the corresponding topic. Docents/assistants ensure that each student acquires the necessary competence in the following areas: questioning the patient, clinical examination, oral presentation, making diagnostic decisions and determining treatment tactics (critical thinking), filling out documentation.

Structure of the discipline	Number of credits, hour			Year of study semester	Type of control
	Total	Classroom			
		Lectures (hrs)	Practical classes (hrs)		
<b>Course title:</b> "Clinical toxicology"	2.0 credits ECTS 60 hrs	0	26	34	IV year credit

The subject of study of the educational discipline is etiopathogenesis, diagnosis, treatment and prevention, as well as emergency aid and the use of antidotes in case of poisoning of various origins.

**Interdisciplinary connections** are based on students' study of human anatomy, medical biology, histology, cytology and embryology, pathomorphology, physiology, pathophysiology, medical and biological physics, bioorganic and biological chemistry, microbiology, virology and immunology, pharmacology, radiology and radiation medicine, propaedeutics of internal medicine.

### 1. The purpose and tasks of the educational discipline

1. **The purpose** of teaching the educational discipline of choice "Clinical toxicology" is the formation of the ability to apply the acquired knowledge, abilities, skills and understanding to solve typical tasks of a doctor in the field of health care, the scope of which is provided by a defined list of syndromes and symptoms of diseases, emergency conditions, which require special patient management tactics; laboratory and instrumental research, medical manipulations; the ability to solve practical problems of expert assessment when conducting forensic toxicological research.

2. The main **tasks** of studying the discipline of choice "Clinical toxicology":

- know the subject and tasks of the discipline "Clinical toxicology";
- classify types of poisoning and distinguish their symptoms; determine the degree of lethality of a toxic dose;
- have an idea about xenobiotics of natural and anthropogenic origin, which pose a potential danger to humans;
- examine patients with toxic damage by substances of different groups; determine the main clinical symptoms and syndromes of poisoning;
  - draw up an examination plan and justify the appointment of the main invasive and non-invasive diagnostic methods; evaluate the results of additional research methods; carry out differential diagnosis;
  - interpret the results of chemical and toxicological analysis based on the totality of the results of various research methods;
  - correctly determine the methods of detoxification and first aid for poisoning of various origins;
  - draw correct conclusions in the case of combined poisoning; carry out an analysis of acute intoxications for the purpose of providing qualified medical assistance;
  - carry out differential diagnosis of acute poisoning;
  - know the general principles of complex detoxification of the human body after acute poisoning; know antidotes;
  - provide first aid in case of poisoning of various origins;
  - be able to provide urgent and emergency aid in case of acute poisoning by substances of various groups;
  - to document the conduct of forensic toxicological studies (keeping a work log, drawing up an act of forensic toxicological research), to document the conduct of expert and laboratory studies;
  - determine the tactics of preventive measures to prevent intoxication with toxic substances of various groups.

**1.3. Competences and learning outcomes**, the formation of which is facilitated by the discipline (interrelationship with the normative content of the training of higher education applicants, formulated in terms of learning outcomes in the EPP). According to the requirements of the EPP, the discipline ensures that students acquire the following competencies:

- *integral*:

The ability to solve complex problems, while pursuing a research and innovative nature in the field of medicine. The ability to continue education with a high degree of autonomy.

- *general*:

- GC1. Ability to abstract thinking, analysis and synthesis.
- GC2. Ability to learn and master modern knowledge.
- GC3. Ability to apply knowledge in practical situations.
- GC4. Knowledge and understanding of the subject area and understanding of professional activity.
- GC5. Ability to adapt and act in a new situation.
- GC6. Ability to make informed decisions.
- GC7. Ability to work in a team.
- GC8. Interpersonal skills.
- GC9. Ability to communicate in the state language both orally and in writing.
- GC 11. Skills in the use of information and communication technologies.
- GC 12. Definiteness and perseverance in terms of tasks and responsibilities.
- GC 13. Awareness of equal opportunities and gender issues.
- GC 14. The ability to realize one's rights and responsibilities as a member of society, to realize the values of civil (free democratic) society and the need for its sustainable development, the supremacy of law, the rights and freedoms of people and citizens.
- GC 15. The ability to preserve and multiply the moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and the development of society, techniques and technologies, to use various types and forms of motor activity for active rest and leading a healthy lifestyle.

- *special (professional, subject)*:

- PC1. Ability to collect medical information of the patient and analyze clinical data.
- PC2. The ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
- PC 3. The ability to establish a preliminary and clinical diagnosis of the disease.
- PC 4. The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases.
- PC 5. The ability to determine the characteristics of nutrition in the treatment and prevention of diseases.
- PC 6. Ability to determine the principles and nature of treatment and prevention of diseases.
- PC 7. Ability to diagnose urgent conditions.

PC 8. Ability to determine the tactics of providing emergency medical aid.

PC 9. Ability to carry out medical evacuation measures.

PC 10. Ability to perform medical manipulations.

PC 11. The ability to solve medical problems in unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.

PC 16. The ability to provide medical documentation, including the use of electronic forms.

PC 21. It is clear and unambiguous to convey one's own knowledge, conclusions and arguments about health care problems and related issues to specialists and non-specialists, in particular to people who are studying.

PC 24. Adherence to ethical principles when working with patients and laboratory animals.

PC 25. Adherence to professional and academic integrity, bear responsibility for the reliability of the obtained scientific results

Detailing of competencies according to NQF descriptors in the form of "Competence Matrix".

### Competence Matrix

№	Classification of competencies by NQF	Knowledge	Skills	Communication	Autonomy and responsibility
1	2	3	4	5	6
<b>Integral competencies</b>					
Ability to solve typical and complex specialized and practical problems in a professional health care activity, or in a learning process that involves research and / or innovation and is characterized by the complexity and uncertainty of conditions and requirements					
<b>General competencies</b>					
1	Ability to abstract thinking, analysis and synthesis.	Know the methods of analysis, synthesis and further modern learning.	Be able to analyze information, make informed decisions, be able to acquire modern knowledge.	Establish appropriate connections to achieve goals.	Be responsible for the timely acquisition of modern knowledge.
2	Ability to learn and master modern knowledge.	Know the current trends in the industry and analyze them.	Be able to analyze professional information, make informed decisions, acquire modern knowledge.	Establish appropriate connections to achieve goals.	Be responsible for the timely acquisition of modern knowledge.
3	Ability to apply knowledge in practical situations.	Have specialized conceptual knowledge acquired in the learning process.	Be able to solve complex problems and problems that arise in professional activities..	Clear and unambiguous communication of their own conclusions, knowledge and explanations that substantiate them to specialists and non-specialists.	Responsible for making decisions in difficult conditions.
4	Knowledge and understanding of the subject area and understanding of professional activity.	Have a profound knowledge of the structure of professional activity.	Be able to carry out professional activities that require updating and integration of knowledge.	Ability to effectively form a communication strategy in professional activities.	Be responsible for professional development, ability to further professional training with a high level of autonomy.
5	Ability to adapt and act in a new situation. Know the types and methods of adaptation, principles of action in a new situation.		Be able to apply means of self-regulation, to be able to adapt to new situations (circumstances) of life and activity.	Establish appropriate connections to achieve results.	Be responsible for the timely use of self-regulatory methods.
6	Ability to make an informed decision.	Know the tactics and strategies of communication, laws and ways of communicative	Be able to make informed decisions, choose ways and strategies communication to	Use communication strategies and interpersonal skills..	Be responsible for the choice and tactics of communication

		behavior.	ensure effective teamwork.		
7	Ability to work in a team.	Know the tactics and strategies of communication, laws and ways of communicative behavior	. Be able to choose ways and strategies of communication to ensure effective teamwork.	Use communication strategies	Be responsible for the choice and tactics of communication.
8	Interpersonal skills.	Know the laws and methods of interpersonal interaction.	Be able to choose ways and strategies of communication for interpersonal interaction.	Use interpersonal skills.	Be responsible for the choice and tactics of communication.
10	Skills in the use of information and communication technologies.	Have deep knowledge in the field of information and communication technologies used in professional activities.	Be able to use information and communication technologies in the professional field, which requires updating and integration of knowledge	Use information and communication technologies in professional activities.	. Be responsible for the development of professional knowledge and skills.
11	The ability to search, process and analyze information from various sources.	To know the places of search, methods of processing and analysis of information from various sources.	To be able to determine the priority areas of search, processing and analysis of information from various sources.	To use interpersonal interaction. different sources	To be responsible for a qualitative search, processing and analysis of information from various sources
12	Definiteness and perseverance in terms of tasks and responsibilities.	Know the responsibilities and ways to accomplish the tasks.	Be able to set goals and objectives to be persistent and conscientious in the performance of duties.	Establish interpersonal relationships to effectively perform tasks and responsibilities..	Responsible for the quality of the tasks
13	Awareness of equal opportunities and gender issues	Know and be aware of issues of equal opportunities and gender issues	Be able to evaluate rights and responsibilities regarding equal opportunities and gender issues	Establish interpersonal interaction based on equal opportunities and exclude gender issues	Be responsible for establishing equal opportunities and eliminating gender issues problems
14	The ability to realize one's rights and responsibilities as a member of society, to be aware of the values of civil society (free democratic) and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen of Ukraine.	To know one's social and public rights and responsibilities, to be aware of the values of civil society (free democratic) and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen of Ukraine.	To form one's civic consciousness, to be able to act in accordance with it. To be able to apply the values of civil society (free democratic) for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen of Ukraine.	The ability to convey one's civic and social position. To adhere to the values of civil society (free democratic) and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen of Ukraine.	To be responsible for one's civic position and activities for sustainable development, the rule of law, the rights and freedoms of a person and a citizen of Ukraine
15	The ability to preserve and increase the moral, cultural, scientific values and achievements of society based on an understanding of the	To know the moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns	To be able to preserve and multiply the moral, cultural, scientific values and achievements of society based on an	To adhere to moral, cultural, scientific values and achievements of society based on understanding the history and patterns	To be responsible for the observance of moral, cultural, scientific values and achievements of society on the basis of

	history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle.	of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, equipment and technologies, to know about different types and forms of motor activity for active recreation and maintaining a healthy lifestyle.	understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activity for active recreation and being able to keep a healthy lifestyle.	of development of the subject area, their place in the general system of knowledge about nature and society and in the development of society, equipment and technologies, to adhere to various types and forms of motor activity for active recreation and healthy lifestyle.	understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technology.
<b>Special (professional, subject) competencies</b>					
1	Ability to collect medical information about the patient and analyze clinical data	Have specialized knowledge about the person, his organs and systems, know the methods and standard schemes of questioning and physical examination of the patient.	Be able to conduct a conversation with the patient on the basis of algorithms and standards, using standard techniques to conduct a physical examination of the patient. Be able to assess the state of human health.	Effectively form a communication strategy when communicating with the patient. Enter information about the state of human health in the relevant medical records.	Be responsible for the quality collection of information obtained through interviews, surveys, examinations, palpation, percussion of organs and systems and for the timely assessment of the state: human health and for taking appropriate measures.
2	Ability to determine the required list of laboratory and instrumental studies and evaluate their results.	Have specialized knowledge about the person, his organs and systems, standard methods of laboratory and instrumental research (according to list 4).	Be able to analyze the results of laboratory and instrumental studies and on their basis to assess information about the patient's diagnosis (according to list 4).	Form and communicate to the patient and specialists the necessary conclusions list of laboratory and instrumental studies (according to list 4).	Be responsible for deciding on the evaluation of laboratory and instrumental research results
3	Ability to establish a preliminary and clinical diagnosis of the disease.	Know the algorithms of disease diagnosis; algorithms for selection of leading symptoms or syndromes (according to list 1); preliminary and clinical diagnoses (according to list 2); methods of laboratory and instrumental examination (according to list 4)	Be able to conduct a physical examination of the patient. Be able to make an informed decision regarding the selection of the leading clinical symptom or syndrome; be able to make a preliminary and clinical diagnosis of the disease (according to list 2); appoint a laboratory and instrumental examination of the patient (according to	Based on regulatory documents, maintain the patient's medical documentation (ambulatory/inpatient card, etc.)	Be responsible for making informed decisions and actions regarding the correctness of the established preliminary and clinical diagnosis of diseases

			list 4) by applying standard methods		
4	Ability to determine the required mode of work and rest in the treatment of diseases.	Have specialized knowledge about man, his organs and systems; ethical and legal norms; algorithms and standard schemes for determining the mode of work and rest during treatment, on the basis of preliminary and clinical diagnosis of the disease (according to list 2).	Be able to determine, on the basis of preliminary and clinical diagnosis, by making an informed decision the necessary mode of work and rest in the treatment of the disease (according to list 2).	Form and inform the patient and specialists about the necessary mode of work and rest in the treatment of the disease (according to list 2).	Be responsible for the validity of the appointment of work and rest in the treatment of the disease (according to list 2).
5	Ability to determine the nature of nutrition in the treatment of diseases.	Have specialized knowledge about man, his organs and systems; algorithms and standard schemes of nutrition in the treatment of diseases (according to list 2).	Be able to determine, on the basis of preliminary and clinical diagnosis, the nature of nutrition in the treatment of diseases (according to list 2).	To form and communicate to the patient, specialists conclusions about nutrition in the treatment of the disease (according to list 2).	Be responsible for the validity of the definition of nutrition in the treatment of the disease (according to list 2).
6	Ability to determine the principles and nature of disease treatment and prevention.	Have specialized knowledge of algorithms and standard schemes of treatment of diseases (according to list 2).	Be able to determine the principles and nature of treatment of the disease (according to list 2).	Form and communicate to the patient and specialists their own conclusions about the principles and nature of treatment (according to list 2).	Be responsible for deciding on the principles and nature of treatment of the disease (according to list 2).
7	Ability to diagnose emergencies.	Have specialized knowledge about the person, his organs and systems, standard methods of human examination (at home, on the street, in a health care facility) in the absence of information.	Be able, in the absence of information, using standard techniques, by making an informed decision to assess the human condition and make a diagnosis (according to list 3).	Under any circumstances, adhering to the relevant ethical and legal norms to make an informed decision on the assessment of the human condition, diagnosis and organization of the necessary medical measures depending on the human condition; fill in the relevant medical documents.	Be responsible for the timeliness and effectiveness of medical measures to diagnose emergencies.
8	Ability to determine the tactics of emergency medical care.	Know the legal framework for the provision of emergency medical care, in particular the law of Ukraine "On emergency medical care".	Have specialized knowledge about urgent human conditions; principles of emergency medical care. Be able to identify emergencies (according to list 3); principles and tactics of emergency medical care; to	Reasonable formulate and convey to the patient or his / her legal representative the need for emergency care and to obtain consent for medical intervention.	Be responsible for the correct determination of the emergency condition, its severity and tactics of emergency medical care.

			carry out organizational and diagnostic measures aimed at saving and saving human life.		
9	Ability to conduct medical evacuation measures	Know the algorithms of medical evacuation measures	Be able to conduct medical evacuation measures	Explain the necessity and procedure of medical evacuation measures	Be responsible for the timeliness and quality of medical evacuation measures
10	Skills to perform medical manipulations.	Have specialized knowledge about man, his organs and systems; knowledge of algorithms for performing medical manipulations (according to list 5).	Be able to perform medical manipulations (according to list 5).	Reasonable form and bring to the patient, specialists conclusions about the need for medical manipulations (according to list 5)	Be responsible for the quality of medical manipulations (according to list 5).
11	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.	Know and navigate medical problems arising in new or unfamiliar environments in the presence of incomplete or limited information.	Have the skills to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information	Communicate to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information.	Take responsibility for solving medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility
16	Ability to maintain medical documentation	Know the system of official document flow in the professional work of a doctor, including modern computer information technologies.	Be able to determine the source and location of the required information depending on its type. Be able to process information and conduct analysis of received information	Receive necessary information from a specified source and, based on its analysis, form appropriate conclusions	Be responsible for the completeness and quality of information analysis and conclusions based on its analysis
21	To convey clear and unambiguous one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying	Know how to clearly and unambiguously convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.	. Possess the methods and skills for clearly and unambiguously conveying one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to students.	Formulate an opinion on the clear and unambiguous presentation of one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to students.	Be responsible for the validity of conclusions regarding one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to persons who are studying
24	Adhere to ethical principles when working with patients, laboratory animals	Know the ethical principles that apply when working with patients	Be able to apply ethical principles when working with patients	Adhere to ethical principles when communicating with patients	Be responsible for observing ethical principles when working with patients
25	Adherence to	Have specialized	Be able to organize	Communicate for	Be responsible for



professional and academic integrity, be responsible for the reliability of the obtained results	knowledge about the system of professional and academic integrity	one's own work in compliance with professional and academic integrity	compliance with professional and academic integrity	the reliability of the results obtained
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### Learning outcomes:

Integrative final program learning outcomes, the formation of which is facilitated by the educational discipline:

- conduct professional activities in social interaction based on humanistic and ethical principles; identify future professional activities as socially significant for human health;
- apply knowledge of general and professional disciplines in professional activities;
- comply with the norms of sanitary and hygienic regime and safety requirements during professional activities;
- use the results of independent search, analysis and synthesis of information from various sources to solve typical problems of professional activity;
  - argue information for decision-making, be responsible for them in standard and non-standard professional situations; adhere to the principles of deontology and ethics in professional activities;
  - to carry out professional communication in modern Ukrainian, to use skills of oral communication in a foreign language, analyzing texts of professional orientation and to translate foreign language information sources;
  - adhere to the norms of communication in professional interaction with colleagues, management, work effectively in a team;
  - analyze the information obtained as a result of scientific research, summarize, systematize and use it in professional activities.

### Program learning outcomes (PLO) for discipline

№	Program learning outcomes	Abbreviation	Correspondence to competencies
1.	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.	PLO – 1	GC 1-15; PC 1-25
2.	Understanding and knowledge of fundamental and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.	PLO – 2	GC 4, 6, 10, 11, 12; PC 1-15, 17, 19, 20,24
3.	Specialized conceptual knowledge that 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 and related interdisciplinary problems.	PLO – 3	GC 1-3, 6, 7, 9-12; PC 1-3, 11, 18-26
4.	Identify and identify leading clinical symptoms and syndromes (according to 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).	PLO – 4	GC 3-4; PC 12, 16, 22, 24
5.	Collect complaints, anamnesis of life and diseases, assess the psychomotor and physical development of the patient, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (according to list 4), taking into account the age of the patient.	PLO – 5	GC 1-3, 6, 7; PC 1-3, 7, 8, 11, 12, 16, 24
6.	To establish the 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 control of the head physician in the conditions of the health care institution (according to the list 2)	PLO – 6	GC 1-3, 6-8; PC 1-3, 7, 8, 11, 12, 16, 24
7.	Assign 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 (according to list 2).	PLO – 7	GC 8; PC 1-2, 16, 24
8.	To determine the main clinical syndrome or what causes the severity of the victim/victim's condition (according to list 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care facility, outside its borders), including in the conditions of an emergency and hostilities, in field conditions, in conditions of lack of information and limited time.	PLO – 8	GC 3-4; PC 5-12, 24

9.	Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to 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 the 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, be able to justify personalized recommendations under the control of the head physician in the conditions of a medical institution.	PLO – 9	PC 1, 2, 6-8, 10, 12
10.	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	GC 4; PC 4, 5, 24
11.	Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time conditions according to existing clinical protocols and standards of treatment.	PLO – 14	GC 5, 7, 8; PC 1, 7, 11, 17, 19, 23
12.	Form rational medical routes for patients; to organize interaction with colleagues in their own and other institutions, organizations and institutions; to apply tools for the promotion of medical services in the market, based on the analysis of the needs of the population, in the conditions of the functioning of the health care institution, its division, in a competitive environment.	PLO – 16	PC 3, 7, 10, 11
13.	Perform medical manipulations (according to 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	GC 14, 15; PC 7, 11, 17
14.	To determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of a person's professional activity, etc. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.	PLO – 18	PC 13, 14, 17, 20
15.	Plan and implement a system of anti-epidemic and preventive measures regarding the occurrence and spread of diseases among the population.	PLO – 19	PC 14
16.	PLO21. Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.	PLO – 21	GC 2, 9, 10
17.	Apply modern digital technologies, specialized software, and statistical data analysis methods to solve complex healthcare problems.	PLO – 22	GC 5, PC 13-17
18.	To convey clearly and unambiguous one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists.	PLO – 25	GC 5, 6, PC 11, 17, 21
19.	Manage work processes in the field of health care, which are complex, unpredictable and require new strategic approaches, organize the work and professional development of personnel taking into account the acquired skills of effective teamwork, leadership positions, appropriate quality, accessibility and fairness, ensuring the provision of integrated medical help	PLO – 26	GC 2, 8
20.	Communicate freely in the national and English languages, both orally and in writing to discuss professional activities, research and projects.	PLO – 27	GC 5-8, 15; PC 11, 18, 21-22
21.	Make effective decisions about health care problems, assess the necessary resources, take into account social, economic and ethical consequences.	PLO – 28	GC 14, 15; PC 14, 20

#### Learning outcomes for the discipline

Learning outcome code	The content of the learning outcome	References to the code of the competence matrix
<b>Category:</b> Kn - knowledge Ab - ability Co– competence AR - autonomy and responsibility	Learning outcomes determine that the student must know, understand and be able to perform, after completing the discipline. Learning outcomes follow from the set learning goals. To enroll in the discipline, it is necessary to confirm the achievement of each	Symbol of the Program Learning Outcome (PLO) code in the High

		Education Standard
Kn-1	Have thorough knowledge of the structure of professional activity.	PLO-1
Ab-1	Able to carry out professional activities that require updating and integration of knowledge.	
Co-1	Skills of further professional training	
AR-1	To bear responsibility for professional development, the ability for further professional training with a high level of autonomy	
Kn-2	Have knowledge of fundamental and clinical biomedical sciences, equally sufficient for solving professional tasks in the field of health care.	PLO-2
Ab-2	To be able to analyze the problems of fundamental and clinical biomedical sciences	
CO-2	Ability to determine the necessary list of problems of fundamental and clinical biomedical sciences	
AR-2	To be responsible for making a decision regarding the evaluation of tasks of fundamental and clinical biomedical sciences	
Kn-3	Have specialized conceptual knowledge, including scientific achievements in the field of health care and the basis for conducting research	PLO-3
Ab-3	To be able to critically analyze problems in the field of medicine and related interdisciplinary problems.	
CO-3	The ability to analyze problems in the field of medicine and related interdisciplinary problems.	
AR-3	Be responsible for making informed decisions and actions regarding the correctness of coverage of the problem in the field of medicine and interdisciplinary problems related to it.	
Kn-4	Know the leading clinical symptoms and syndromes; standard diagnostic methods.	PLO-4
Ab-4	To be able to distinguish and identify the leading clinical symptoms and syndromes; by standard methods, using the patient's anamnesis data, the patient's examination data, knowledge about the person, his organs and systems.	
CO-4	The ability to establish a preliminary clinical diagnosis of the disease	
AR-4	Be responsible for establishing a preliminary clinical diagnosis of the disease	
Kn-5	Know the algorithms of working with the patient	PLO-5
Ab-5	To be able to collect complaints, anamnesis and diseases, evaluate the psychomotor and physical development of the patient, the state of the organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information related to the diagnosis, taking into account the age of the patient.	
CO-5	Ability to evaluate the results of laboratory and instrumental research	
AR-5	Be responsible for the completeness of collected information about the patient.	
Kn-6	Know the principles of establishing a final clinical diagnosis.	PLO-6
Ab-6	Be able to establish a final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, conducting differential diagnosis, observing the relevant ethical and legal norms, under the supervision of the head physician in the conditions of the health care institution.	
CO-6	The ability to establish an algorithm for formulating a final clinical diagnosis	
AR-6	Be responsible for formulating the final clinical diagnosis	
Kn-7	Know the standard methods of conducting laboratory and instrumental research	PLO-7
Ab-7	Be able to analyze the results of laboratory and instrumental studies and, based on them, evaluate information about the patient's diagnosis	
CO-7	Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results	
AR-7	To be responsible for making a decision regarding the evaluation of the results of laboratory and instrumental studies	
Kn-8	To know the main clinical syndromes and the severity of the condition of the victim/injured (under the conditions of the health care institution, outside its boundaries), including in the conditions of emergency situations and combat operations, in field conditions, in conditions of lack of information and limited time.	PLO-8
Ab-8	To be able to determine the main clinical syndrome or the severity of the victim's	

	condition caused by making a reasoned decision and assessing the condition of a person under any circumstances (in the conditions of a health care institution, outside its borders), including in the conditions of emergency situations and combat operations, in field conditions, in conditions of lack of information and limited time.	
CO-8	To have interaction skills, regarding the determination of the main clinical syndrome or the cause of the severity of the victim's/victim's condition, making a reasoned decision and evaluating a person under any circumstances (in terms of a health care institution, outside its boundaries), including in the conditions of emergency situations and combat operations, in field conditions, in conditions of lack of information and limited time.	
AR-8	To be responsible for the timely determination of the main clinical syndrome or the cause of the severity of the victim's/victim's condition by making a reasoned decision and assessing the state of a person under any circumstances (in terms of a health care institution, outside its boundaries), including in the conditions of emergency situations and combat operations, in field conditions, in conditions of lack of information and limited time.	
Kn-9	Know the principles of treatment of patients (conservative, operative) with diseases, taking into account the age of the patient, the conditions of the health care facility, its limits and stages of medical evacuation, including in field conditions.	PLO-9
Ab-9	Be able to determine the nature and principles of treatment of patients (conservative, operative) with diseases, taking into account the age of the patient, the conditions of the health care facility, its limits and the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, following the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, and when it is necessary to expand the standard scheme, and to be able to substantiate personalized recommendations under the control of the head physician in the conditions of the medical institution.	
CO-9	The ability to communicate about the nature and principles of treatment of patients (conservative, operative) with diseases, taking into account the age of the patient, the conditions of the health care facility, its limits and the stages of medical evacuation, including in field conditions, on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes	
AR-9	To be responsible for the quality of the prescribed treatment (conservative, operative) of patients with diseases, taking into account the age of the patient, the conditions of the health care facility, its limits and the stage of medical evacuation, including in field conditions	
Kn-10	Know the necessary mode of work, rest and nutrition based on the final clinical diagnosis, existing algorithms and standard schemes.	PLO-10
Ab-10	Be able to determine the necessary regime of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a well-founded decision with existing algorithms and standard schemes.	
CO-10	The ability to determine the mode of work, rest and the nature of nutrition during the treatment of diseases	
AR-10	To be responsible for the reasonableness of determining the mode of work, rest and the nature of nutrition during the treatment of diseases	
Kn-11	To know the tactics of providing emergency medical aid in emergency situations in limited time in accordance with existing clinical protocols and treatment standards.	PLO-14
Ab-11	Able to provide emergency medical assistance in emergency situations in limited time in accordance with existing clinical protocols and treatment standards.	
CO-11	The ability to determine the tactics of providing emergency medical aid in emergency situations in limited time in accordance with existing clinical protocols and treatment standards.	
AR-11	To be responsible for the provision of emergency medical aid in emergency situations in a time-limited manner in accordance with existing clinical protocols and treatment standards.	
Kn-12	Know the rational medical routes of patients.	PLO-16

Ab-12	To be able to form rational medical routes for patients.	
CO-12	The ability to communicate with colleagues in order to form rational medical routes for patients	
AR-12	To be responsible for the validity of decisions regarding the formation of rational medical routes for patients	
Kn-13	Know the principles of performing medical manipulations in the conditions of a medical institution, at home or at work	PLO-17
Ab-13	Be able to perform medical manipulations 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	
CO-13	Ability to communicate regarding medical manipulations in the conditions of a medical institution, at home or at work	
AR-13	To be responsible for carrying out medical manipulations in the conditions of a medical institution, at home or at work	
Kn-14	To know what limitations of a person's life activity and the duration of incapacity for work require 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, etc.	PLO-18
Ab-14	Be able to determine the state of functioning and limitations of a person's vital activity 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, etc.	
CO-14	The ability to assess the limitation of a person's vital activity and the duration of his disability	
AR-14	Be responsible for assessing the limitation of a person's life activity and the duration of his/her incapacity	
Kn-15	Know anti-epidemic and preventive measures for the occurrence and spread of diseases among the population.	PLO-19
Ab-15	To be able to carry out anti-epidemic and preventive measures regarding the occurrence and spread of diseases among the population.	
Ab-16	Be able to find the necessary information in professional literature and databases of other sources, analyze, evaluate and apply this information.	PLO-21
Ab-17	Be able to apply modern digital technologies, specialized software, and statistical methods of data analysis to solve complex healthcare problems.	PLO-22
AR-15	Be responsible for the clear and unambiguous presentation of one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and specialists To	PLO-25
AR-16	be responsible for ensuring the provision of integrated medical care.	PLO-26
Ab-18	Be able to communicate freely in the state language and in English, both orally and in writing to discuss professional activities, research and projects.	PLO-27
CO-15	To comply with the requirements of ethics, bioethics and deontology in their professional activities	PLO-28
AR - 17	To be responsible for compliance with the requirements of ethics, bioethics and deontology in one's professional activity.	

## 2. Information volume of the discipline of choice "Clinical toxicology"

In the 4th year, 2.0 credits are allocated for studying the optional course "Clinical Toxicology", of which 26 hours. – practical classes and 34 hours - independent work of students.

### The structure of the discipline

Topic	Lectures	Practical (seminar) classes	Indep. work	Individual work
1. The global pandemic of COVID-19. Diagnosis of SARS-CoV-2. Clinical manifestations, prevention and treatment. Introduction to clinical toxicology		2	2	
2. General issues of toxicology		2	2	
3. Factors affecting the human body by toxic substances		2	2	
4. Acid poisoning		2	3	
5. Alkali poisoning		2	3	

6. Poisoning by heavy metal compounds and arsenic		2	3	
7. Poisoning with hypnotics and psychotropic substances		2	3	
8. Poisoning by organophosphorus compounds		2	3	
9. Poisoning by chlorinated hydrocarbons and blood poisons		2	2	
10. Poisoning with some poisons of biological origin		2	2	
11. General principles of poisoning diagnosis		2	3	
12. General principles of treatment of poisoning by substances of different groups		2	3	
13. Emergency medical assistance in case of acute poisoning by substances of various groups		2	3	
Together according to content module 1		<b>26</b>	<b>34</b>	
A total of _60_/__2__ ECTS credit hours	<b>0</b>	<b>26</b>	<b>34</b>	<b>60</b>
<b>Final control</b>				Credit

**4. Thematic plan of lectures** in accordance with order N 881- dated 15.03.2022 "On the implementation of the curriculum for the training of applicants of the second (master's) level of higher education in the specialty 222 "Medicine" lectures are not provided.

**5. Thematic plan of practical classes elective disciplines "Clinical toxicology"**

№	Topics	Hrs
1.	The global pandemic of COVID-19. Diagnosis of SARS-CoV-2. Clinical manifestations, prevention and treatment. Introduction to clinical toxicology	2
2.	General issues of toxicology	2
3.	Factors affecting the human body by toxic substances	2
4.	Acid poisoning	2
5.	Alkali poisoning	2
6.	Poisoning by heavy metal compounds and arsenic	2
7.	Poisoning with hypnotics and psychotropic substances	2
8.	Poisoning by organophosphorus compounds	2
9.	Poisoning by chlorinated hydrocarbons and blood poisons	2
10.	. Poisoning with some poisons of biological origin	2
11.	General principles of poisoning diagnosis	2
12.	General principles of treatment of poisoning by substances of different groups	2
13.	Emergency medical assistance in case of acute poisoning by substances of various groups	2
<b>Total hours</b>		<b>26</b>

**6. Thematic plan of independent work of the discipline of choice "Clinical toxicology"**

№	Topics	Hrs
1.	Preparation for a practical lesson on the topic: "The global pandemic of COVID-19. Diagnosis of SARS-CoV-2. Clinical manifestations, prevention and treatment. Introduction to clinical toxicology."	2
2.	Preparation for a practical lesson on the topic: "General questions of toxicology".	2
3.	Preparation for a practical lesson on the topic: "Factors of influence of toxic substances on the human body."	2
4.	Preparation for a practical lesson on the topic: "Acid poisoning".	3
5.	Preparation for a practical lesson on the topic: "Poisoning with alkalis."	3
6.	Preparation for a practical lesson on the topic: "Poisoning with heavy metal compounds and arsenic."	3
7.	Preparation for a practical lesson on the topic: "Poisoning with hypnotics and psychotropic substances."	3
8.	Preparation for a practical lesson on the topic: "Poisoning with organophosphorus compounds."	3

9.	Preparation for a practical lesson on the topic: "Poisoning with chlorinated hydrocarbons and blood poisons."	2
10.	Preparation for a practical lesson on the topic: "Poisoning with some poisons of biological origin."	2
11.	Preparation for a practical lesson on the topic: "General principles of poisoning diagnosis"	3
12.	Preparation for a practical lesson on the topic: "General principles of treatment of poisoning by substances of different groups."	3
13.	Preparation for a practical lesson on the topic: "Emergency medical aid in case of acute poisoning by substances of various groups."	3
<b>Total hours</b>		<b>34</b>

### 7. Independent and individual work

- Essay presentation at a practical session
- Report at clinical conferences of department bases
- Presentation of medical history at a practical session
- Writing theses, articles
- Mastering practical skills
- Review of scientific literature by topic
- Writing a workbook on the subject of the lesson

Individual assignments are a mandatory part of students' work. It is divided into current (mandatory part is home self-preparation for practical classes and filling out a thematic patient card) and individual educational and research tasks. Mandatory individual work of students is an integral part of studying almost every topic. The quality of performance of mandatory individual work is taken into account during the assessment of success in the topic of the lesson. Individual work is evaluated with additional points and has different levels of difficulty.

- Individual tasks from the discipline "Clinical toxicology" are completed by students in writing (in the form of a thematic patient card), the implementation control is carried out constantly during the semester in the relevant practical classes. Verification of the material learned by the topic of the work is carried out at the final control.
- In practical classes, home self-preparation of individual work, which is provided for the relevant topic of the practical class, is checked, evaluated during the current control of the class topic.
- Evaluation of mastery of topics, which are left for independent study by students and are not included in the topics of practical classes, is carried out during the final control with the help of tests and situational problems.

The organization of the educational process should ensure the participation of students in the management of at least 2/3 of inpatients. If it is not possible to provide curation of patients with diseases according to the topic of the lesson, students fill out charts of patients with diseases of the corresponding topic.

Daily patient examination protocols by students are provided to the associate professor/assistant for review. Docents/assistants ensure that each student acquires the necessary competence in the following areas: questioning the patient, clinical examination, oral presentation, making diagnostic decisions and determining treatment tactics (critical thinking), filling out documentation.

### 8. Teaching methods:

#### **Practical, visual, verbal, work with a book, video method.**

During classes, such methods of interactive learning as business games, role-playing games, cases, etc. are used.

### 9. Control methods:

oral, written, test, programmed, practical control, self-control.

#### **9.1 Types of control:** current and final.

#### **9.2 Form of final control of study success:** credit

#### **9.3 Evaluation criteria** Control measures include current and final semester control and certification of graduates.

### 10. Current control:

Current control is carried out during training sessions and is aimed at checking the students' assimilation of the educational material.

During the practical session, the student examines the patient, analyzes the received data, formulates and substantiates the preliminary diagnosis; prepares a plan for additional research methods, documents the patient's examination in the form of a brief medical history; analyzes the results of additional research methods, compares data from several patients, formulates and substantiates a clinical diagnosis; learns the basic principles of disease treatment in the clinic of internal medicine, solves clinical situational problems, makes a short report on the completed independent work.

Conducting current control during training sessions should be based on test control, solving situational problems, current survey, examination of the patient, filling out the patient card and independent work, after which the student is assigned a comprehensive assessment. The student must receive a grade in each topic.

Forms of assessment of current educational activities should be standardized and include control of theoretical and practical training. The final grade for the current educational activity is given on a 4-point (national) scale

#### Criteria for assessing the practical lesson

- Knowledge of theoretical material has significant errors, no homework, initial test control of knowledge written less than 60%, unsatisfactory examination of the patient (unsatisfactory assessment of practical skills), the main test on the topic written on unsatisfactory assessment, the student makes mistakes that can lead until the death of the patient - **unsatisfactory**;
- Knowledge of theoretical material has errors, which, however, can not cause the death of the patient, the initial test control is written at 60-74%, a satisfactory grade for practical skills, test on the topic written on a satisfactory grade, the student makes mistakes that lead to prolong the diagnostic search, but do not threaten the life of the patient - **satisfactory**;
- Knowledge of theoretical material without errors, corresponds to the program, the initial test control is written by 75-89%, the grade "good" for the practical skills, the test on the studied topic is written on the grade "good", the student does not make mistakes - **good**.
- Knowledge of theoretical material without errors, corresponds to the program, from basic disciplines excellent knowledge which the student can use in therapy, initial test control is written on 90% and more, an estimation "excellent" for the executed practical skills, control work on the studied theme is written on an estimation "excellent", the student does not make mistakes, is able to examine the patient, interpret the results of examinations and prescribe modern, individual, with a dosage of treatment - **excellent**.

### 11. Forms of final control of study effectiveness

Final control		
General evaluation system	Participation in work during the semester (credit) on a 200-point scale	
Rating scales	traditional 4-point scale, multi-point (200-point) scale, ECTS rating scale	
Conditions of admission to the final control	The student attended all practical classes and received at least 120 points for the current performance	
Type of final control	Methodology of final control	Enrollment criteria.
Credit	All topics submitted for current control must be included. Grades from a 4-point scale are converted into points on a multi-point (200-point) scale in accordance with the Regulation "Criteria, rules and procedures for evaluating the results of students' educational activities"	The maximum number of points is 200. The minimum number of points is 120.

### 12. Scheme of calculation and distribution of points received by students

**Assessment** is one of the final stages of learning activities and determining learning success.

**The calculation of points** is based on the grades obtained by the student on the traditional scale during the study of the discipline during the semester, by calculating the arithmetic mean (AM), rounded to two decimal places. The resulting value is converted into points on a multi-point scale as follows:

$$200/5 \cdot x = CA$$

For convenience, the table of recalculation on a 200-point scale is given:

Recalculation of the average grade for current activities in a multi-point scale for disciplines that end with a credit

4-point scale	200-point scale
5	200
4.97	199
4.95	198
4.92	197
4.9	196
4.87	195
4.85	194
4.82	193
4.8	192
4.77	191
4.75	190
4.72	189
4.7	188

4-point scale	200-point scale
4.45	178
4.42	177
4.4	176
4.37	175
4.35	174
4.32	173
4.3	172
4.27	171
4.24	170
4.22	169
4.19	168
4.17	167
4.14	166

4-point scale	200-point scale
3.92	157
3.89	156
3.87	155
3.84	154
3.82	153
3.79	152
3.77	151
3.74	150
3.72	149
3.7	148
3.67	147
3.65	146
3.62	145

4-point scale	200-point scale
3.37	135
3.35	134
3.32	133
3.3	132
3.27	131
3.25	130
3.22	129
3.2	128
3.17	127
3.15	126
3.12	125
3.1	124
3.07	123



4.67	187
4.65	186
4.62	185
4.6	184
4.57	183
4.52	181
4.5	180
4.47	179

4.12	165
4.09	164
4.07	163
4.04	162
4.02	161
3.99	160
3.97	159
3.94	158

3.57	143
3.55	142
3.52	141
3.5	140
3.47	139
3.45	138
3.42	137
3.4	136

3.02	121
3	120
Less 3	not enough

Scores from the discipline are independently converted into both the ECTS scale and the 4-point scale. ECTS scale scores are not converted to a 4-point scale and vice versa.

The scores of students studying in one specialty, taking into account the number of scores scored in the discipline, are ranked on the ECTS scale as follows:

ECTS assessment	Statistical indicator
"A"	The best 10% of students
"B"	The next 25% of students
"C"	The next 30% of students
"D"	The next 25% of students
"E"	The last 10% of students

Discipline points for students who have successfully completed the program are converted to a traditional 4-point scale according to the absolute criteria, which are shown in the table below:

Score on a multi-point (200) scale	Score on a four-point scale
From 170 to 200 points "5"	
From 140 to 169 points "4"	
From 139 to the minimum number of points that must be scored by student "3"	
Below the minimum number of points that must be scored by student "2"	
From 170 to 200 points	«5»
From 140 to 169 points	«4»
From 139 to the minimum number of points that must be scored by student	
Below the minimum number of points that must be scored by student "2"	«3»
Below the minimum number of points that must be scored by student	«2»

The EKTS score is not converted to a traditional scale, since the EKTS scale and the four-point scale are independent. The objectivity of the assessment of students' educational activity is checked by statistical methods (correlation coefficient between the ECTS assessment and the assessment on the national scale).

#### Methodical support

- 1) plans of practical lessons
- 2) tasks for independent work
- 3) methodological instructions/recommendations for students and teachers
- 4) algorithms of treatment and provision of emergency care (according to the standards of evidence-based medicine)
- 5) algorithms for performing practical skills, medical manipulations, video films
- 6) results of laboratory and instrumental research methods
- 7) dummies, phantoms, etc
- 8) simulators, electronic guides, computers with appropriate information support
- 9) questions, problems, tasks or cases for current and final control

#### LIST OF EDUCATIONAL MATERIALS

1. Cheifetz A., Brown A., Curry M. Oxford American Handbook of Gastroenterology and Hepatology ; Oxford University Press; 2012. 488 p.
2. Fauci A., Dennis A., L. Dan K, LLongo L., HARRISON'S Gastroenterology and Hepatology McGraw-Hill 17-thy edition 2650 p.
3. Flynn J. AMC handbook of clinica assessment. 2007: Australian Medical Council: 894 p.
4. Lieber J., Noto F. 20187: Kaplan Medical's USMLE Step 2 CK Lecture Notes.Kaplan Publishing. 1356 p.
5. Gamal Abdul Hamid, 2012:, Clinnical hematology1 st edition; 251 p.
6. Harrison's Pulmonary and Critical Care Medicine, 3 dition 2017. Loscalzo J., McGraw-Hill Education 644p.

7. Hawkey C. J., Bosch J., Richter J Textbook of Clinical Gastroenterology and Hepatology. Second edition. 2012.. Wiley-Blackwell, 1274 p.
8. Hayes P.2016: Guidelines for preventive activities in general practice, 9th edition
9. The Royal Australian College of General Practitioners, 173 p.  
Hoffman R., Edward J., Benz Jr. et al 2017 7th edition. Hematology. Basic principles and practice. ELSEVIER, 2650 p..
10. Lynn S. Bickley. I 2016: Bates' Guide to Physical Examination and History Taking, 10th Edition. 1010p.
11. Murtagh J., Rosenblatt J., Coleman J., Murtagh C. General Practice, 2019:7th edition, McGraw-Hill Education (Australia) Pty Ltd, 6541 p.
12. Wearne S. 2016: Clinical cases for general practice exams / Susan Wearne. Edition: 3rd ed. 374 p.

#### **Additional:**

1. Harrison's Principles of Internal Medicine edited by Dan L. Longo, Anthony S. Fauci, Joseph Loscalzo, Stephen L. Hauser. 18 th ed. New York, McGraw-Hill Professional, 2011.
2. Bloomfield CD, Herzig Gp. - Advances in the management of acute leukemia. - Hematol, Oncol. Clin. North Am. 7:1, 1993.
3. Khouri I et al., Chronic myeloid leukemia. - Clinical oncology. - New York Churchill Livingstone. 1995.-pp. 2035-2051.
4. Copelan EA, McGuire EA, The biology end treatment of acute lymphoblastic leukemia in adults. – Blood, 1995, Vol. 85, p. 1151
5. Kelley's Textbook of Internal Medicine, 4<sup>th</sup> ed., H. David Humes (Editor), Herbert L. Dupont (Editor) 2000 Lippincott Williams & Wilkins.
6. Aspinall RL, Simon DTR Gastroenterology and Liver Disease, Mosby Int, Lim 2002 -P 374.
7. Kirsner JB, Shorter RG (eds) Inflammatory Bowel Disease, 4<sup>th</sup> ed. Philadelphia. Lea and Febiger 1995
8. Schwattz SI et al. Principles of Surgery. 1994 6th ed. New York, McGraw Hill.
9. Yamada T. et al. Textbook of Gastroenterology. 1995 2d ed. Philadelphia, Lippincott

#### **Information resources**

- <https://www.aasld.org/>
- <https://www.diabetes.org/>
- <http://www.eagen.org/>
- <http://www.ers-education.org/guidelines.aspx>
- <http://www.esmo.org/Guidelines/Haematological-Malignancies>
- <https://ehaweb.org/organization/committees/swg-unit/scientific-working-groups/structure-and-guidelines/>
- <http://www.gastro.org/guidelines>
- [www.ginasthma.org](http://www.ginasthma.org)