

DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY

Department of Internal Medicine N 1

Department of Internal Medicine N 2



First Vice-Rector for scientific and pedagogical work

Assoc. prof. Iryna SOLONYNKO

“ 30 ” “ 08 ” 2023

Approved

**WORK PROGRAMME OF THE EDUCATIONAL
DISCIPLINE**

"Occupational diseases"

OK 25.5

5 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
of the Departments of
Internal Medicine N 1
protocol N 9
dated 18.04.2023

Head of the Department
of Internal Medicine N 1

prof. Orest ABRAHAMOVYCH

Approved
by the Profile Methodical Council
on the therapeutic disciplines
protocol N 3 dated 04.05.2023

Head of the Profile Methodical Council
prof. Olena RADCHENKO

The program of study of the elective discipline «Occupational diseases» is made according to: the educational-professional program (OPP) of preparation of experts of the second (master's) level of higher education
Field of knowledge 22 "Health care"
specialty 222 "Medicine"

Description of the academic discipline (abstract)

The organization of the educational process is carried out according to the European Credit Transfer System of the Organization of the Educational Process (ECTS).

The program on "Occupational diseases" in the 5th year involves the study of the basics of occupational diseases, while the emphasis is on the study of etiology, pathogenesis, professional route, clinic, diagnosis, treatment and prevention of the main and most common occupational pathology.

Approximate duration of practical classes - 1.0-2.0 hours. Students participate in the diagnostic and treatment process of patients under the guidance of the department's teachers. Mastering/acquainting with the procedures most often used in the practice of internal medicine is also provided. Practical classes, clinical visits with assistants, associate professors and professors of the department are the main part of this course.

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

Thematic plans of lectures, practical classes and independent work reveal problematic issues of the relevant sections of internal medicine. The lecture course uses didactic tools as much as possible (multimedia presentations, slides, educational videos, demonstration of thematic patients). The lecture and practical stages of students' training are composed, mainly, in such a way that the lectures precede the relevant practical classes.

Practical classes are held at the department's clinical facilities. The method of organizing practical classes in internal medicine requires the following:

- to make the student a participant in the process of providing medical care to patients from the moment of their hospitalization, examination, diagnosis, treatment until discharge from the hospital;
- master professional practical skills; skills of working in a team of students, doctors, other participants in the process of providing medical care;
- to form in the student, as in the future specialist, an understanding of responsibility for the level of his training, its improvement during training and professional activity.

To implement the corresponding module specified in the first lesson, it is necessary to provide the student with a detailed plan of work in the clinic and ensure the conditions for its implementation. This plan should include:

- studies that the student should learn (or familiarize himself with)
- algorithms (protocols) of examinations, diagnosis, treatment, prevention in accordance with the standards of evidence-based medicine;
- curation of patients, which must be carried out by the student during the study of the discipline;
- reports of the patient's medical history in the study group, at clinical rounds, practical conferences.

Management of the patient involves:

- 1) clarifying the patient's complaints, medical history and life history, conducting a survey of organs and systems;
- 2) conducting a physical examination of the patient and determining the main symptoms/syndromes of the disease;
- 3) analysis of laboratory and instrumental research results;
- 4) establishing a diagnosis;
- 5) appointment of treatment;
- 6) determination of primary and secondary prevention measures;
- 7) report on the results of the examination of the patient by a team of students in the study group, analysis under the guidance of the teacher of the correctness of establishing the diagnosis, differential diagnosis, prescribed examination, treatment tactics, assessment of prognosis and work capacity, prevention.

It is recommended to conduct practical classes including:

- 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) management of 1-2 patients with diseases and conditions corresponding to the topic of the lesson, 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) consideration of the results of additional research methods (laboratory and instrumental), which are used during diagnosis and differential diagnosis, the consideration of which is provided for by the topic of the practical session;
- 4) control of the final level of knowledge on test tasks.

During the practical classes, students are recommended to keep protocols (patient card), in which it is necessary to enter brief information about the patients examined during the practical class, the diagnosis, the examination plan and the prescribed treatment.

The independent and individual work of students is an integral part of educational activities and is included in ECTS credits of each module and discipline as a whole. It includes:

- preparation for practical classes;
- implementation and presence 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);

- preparation and writing of medical history;
- 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%.

Mastering the topic (current control) is monitored in a practical session. It is recommended to use the following means of assessing the level of students' training: test tasks, solving situational problems, conducting laboratory studies and evaluating their results, analyzing and evaluating the results of instrumental studies and parameters characterizing the functions of the human body, monitoring the acquisition of practical skills and medical manipulations.

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 evaluations of the mastery of individual modules.

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.

Structure of the discipline	Number of credits, hour			IS (independent study)	Year of study (semester)	Type of control
	Total	Classroom				
		Lectures (hrs)	Practical classes (hrs)			
Discipline "Occupational diseases"	1,0 credit ECTS/ 30 hrs.	6	9	15	V yr (IX or X sem.)	credit

The subject of study of the academic discipline is diagnosis, treatment of occupational diseases and prevention of functional disorders in the process of work.

Interdisciplinary links: the academic discipline "Occupational diseases" is based on the study of medical chemistry, biological and bioorganic chemistry, medical and biological physics, pathophysiology, pathomorphology, pharmacology, hygiene and ecology, social medicine, organization and economics of health care, propaedeutics of internal medicine, internal medicine, phthisiology, dermatology, venereology, psychiatry, narcology, otorhinolaryngology, obstetrics and gynecology, neurology, traumatology and orthopedics, and integrates with these disciplines.

Interdisciplinary links:

Discipline	Know
Normal anatomy	Features of the anatomical structure of hematopoietic organs, cardiovascular system, respiratory, digestive, urinary organs, central and peripheral nervous system, musculoskeletal system, adrenal glands, thyroid gland, ear structure
Normal physiology	Functions of bronchi, lungs; functions of external respiration. Blood morphology and functions are normal. Reflex, sensitive and neurohumoral functions of the nervous system. Functions of the cardiovascular system, stomach, liver, kidneys. Functions of erythrocytes, hemoglobin. Functions of the musculoskeletal system, adrenal glands, thyroid gland, auditory analyzer, blood gas composition
Histology	The structure of the lungs and bronchi. The structure of the bone marrow, the scheme of hematopoiesis. Morphology of liver cells, gastric mucosa, kidney cells
Pathological anatomy	Pathological and anatomical changes in various diseases. Pathological changes of lung tissue in various types of pneumoconiosis. Changes in the bronchial mucosa during the inflammatory and atrophic process
Pathological physiology	Pathogenesis of diseases of respiratory organs, gastrointestinal tract, hematopoietic organs, urinary system. Pathogenetic mechanisms of impaired function of external breathing according to the obstructive and restrictive type. Mechanisms of blood changes under toxic effects, disturbances of sensory and motor functions of the nervous system. Changes in the blood, liver and nervous system in case of intoxication and hypoxemia. Changes in the structure of the liver, kidneys, and nervous system in case of intoxication with manganese, mercury, tetraethyl lead, and carbon disulfide. Pathogenetic mechanisms of changes in the cardiovascular, nervous, reproductive systems, auditory analyzer, musculoskeletal system, adrenal glands, thyroid gland due to the influence of vibration, industrial noise, reduced and increased atmospheric pressure
Biochemistry	Synthesis of hemoglobin and porphyrins, metabolism of acetylcholine. Biosynthesis of proteins, exchange of proteins, fats, carbohydrates

Pharmacology	Classification and mechanisms of action of bronchodilators, cholinolytics, expectorants, etc. Classifications and mechanisms of action of anti-anemic drugs, vitamins, biogenic stimulants, hepatoprotectors. Classifications and mechanisms of action of respiratory analeptics, methylene blue, hepatoprotectors, diuretics. Classifications and mechanisms of action of antidotes, antiparkinsonian drugs, hepatoprotectors. Mechanisms of action of atropine, dipiroxime, sodium thiosulfate, succimer, D-penicillamine, corticosteroids. Mechanisms of action of drugs that contribute to the restoration of the function of the auditory analyzer, metabolic drugs, ganglioblockers, vasodilators
Propaedeutics of internal diseases	Methods of examination of patients with pulmonary pathology. Methods of examination of patients with blood pathology. Laboratory methods of blood and bone punctate research. Methods of examination of patients with pathology of the cardiovascular system, stomach, liver, peripheral and central nervous system. Laboratory methods of research in patients with liver and kidney pathology
Internal medicine	Clinical features and treatment of chronic bronchitis and COPD of dust etiology, bronchial asthma, diffuse fibrosing alveolitis, heart failure. Clinical signs, diagnosis and treatment of anemia, hemorrhagic syndromes. Clinical signs and treatment of hepatitis, liver cirrhosis. Clinical signs, diagnosis and treatment of the cardiovascular system, liver, kidneys, peripheral and central nervous system. Symptoms of toxic tracheitis, bronchitis, myocarditis, hepatitis, toxic kidney. Differential diagnosis of diseases with similar clinical symptoms
Phthisiatry	Diagnosis, clinical signs and treatment of disseminated pulmonary tuberculosis
Endocrinology	Disorders of the functions of the adrenal glands, thyroid gland, reproductive system in their various pathological conditions
Traumatology and orthopedics	The main diseases of the musculoskeletal system
Vascular surgery	The main diseases of the vessels of the limbs and vertebrobasilar arteries
General hygiene, occupational hygiene	The main environmental factors and occupational hazards, their importance in clinical medicine. Normative acts, sanitary and hygienic aspects of prevention of hearing loss, sensorineural deafness, altitude and caisson diseases
History of medicine	The history of the development of the doctrine of occupational pathology in the world
Neurology	Methods of examination of patients with central and peripheral nervous system pathology. Reflex, sensitive and neurohumoral functions of the nervous system. Symptoms of polyneuritis, encephalopathies, paralysis
Reanimatology	Principles of providing emergency care in case of acute toxic damage to respiratory organs, cardiovascular system, liver, kidneys
Biophysics	Physical parameters of vibration, parameters of atmospheric pressure

1. The purpose and objectives of the discipline

1.1. **The purpose** of teaching the discipline «Occupational diseases» is to form the ability to apply the acquired knowledge, skills, abilities and understanding to solve typical problems of the doctor in the field of health care, the scope of which is provided by certain lists of syndromes and symptoms of diseases, emergencies and diseases. require special tactics of patient management; laboratory and instrumental research, medical manipulations.

1.2. The main tasks of studying the discipline «Occupational diseases» in the 5 course

- conduct surveys and clinical examinations of patients with major diseases of the digestive, respiratory, blood and hematopoietic organs and analyze their results;
- determine the etiological and pathogenetic factors of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- analyze the typical clinical picture, identify clinical variants and complications of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- establish a preliminary diagnosis of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- prescribe laboratory and instrumental examination of patients with the most common diseases of the digestive, respiratory, blood and hematopoietic organs and their complications;
- on the basis of evaluation of the results of laboratory and instrumental examination, to make a differential diagnosis, substantiate and establish a clinical diagnosis of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- determine the necessary mode of work and rest in the treatment of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- determine the necessary medical nutrition in the treatment of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;

- determine the principles and nature of treatment in the treatment of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- prescribe treatment, including prognostic-modifying, of the most common diseases of the digestive, respiratory, blood and hematopoietic organs and their complications;
- determine the tactics of emergency medical care on the basis of a diagnosis of emergency;
- provide emergency medical care on the basis of an emergency diagnosis;
- carry out primary and secondary prevention of the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- assess the prognosis and efficiency of patients with the most common diseases of the digestive, respiratory, blood and hematopoietic organs;
- perform medical manipulations;
- keep medical records;
- adhere to the requirements of ethics, bioethics and deontology in their professional activities.

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	Knowledge	Skills	Communication	Autonomy and
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competencies by NQF					responsibility
1	2	3	4	5	6
Integral competencies					
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					
General competencies					
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 behavior.	Be able to make informed decisions, choose ways and strategies communication to ensure effective teamwork.	Use communication strategies and interpersonal skills..	Be responsible for the choice and tactics of communication
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	Have deep knowledge in the	Be able to use information and	Use information and communication	. Be responsible for the

	communication technologies.	field of information and communication technologies used in professional activities.	communication technologies in the professional field, which requires updating and integration of knowledge	technologies in professional activities.	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 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.	To know 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 in the development of society, equipment and technologies, to know about different types and forms of motor activity for active recreation and maintaining a	To be able 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 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.	To adhere to moral, cultural, scientific values and achievements of society based on understanding the history and patterns 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.	To be responsible for the observance of moral, cultural, scientific values and achievements of society on the basis of 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.

		healthy lifestyle.			
Special (professional, subject) competencies					
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 list 4) by applying standard methods	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
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	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).

		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 carry out organizational and diagnostic measures aimed at saving and saving human life.	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.
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 professional and academic integrity, be responsible for the reliability of the obtained results	Have specialized knowledge about the system of professional and academic integrity	Be able to organize one's own work in compliance with professional and academic integrity	Communicate for compliance with professional and academic integrity	

Learning outcomes:

The discipline «Occupational diseases» contributes to the formation of integrative final program learning outcomes, for which students must:

- 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	PLO – 16	PC 3, 7, 10, 11

	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.		
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
Category: 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	PLO-3

	field of health care and the basis for conducting research	
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	PLO-9

	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.	
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	PLO-18

	peculiarities of a person's professional activity, etc.	
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 cross-cutting discipline "Occupational medicine"

1.0 ECTS credit (30 hours) is assigned to study the educational discipline "Occupational diseases" in the 5th year.

The program of the study discipline "Occupational diseases" for students of the 5th year is structured into 2 content modules. Content module 1. General issues of occupational pathology. Occupational diseases caused by exposure to industrial aerosols and physical factors. Content module 2. Occupational diseases caused by the influence of chemical and physical factors.

3. The structure of the academic discipline

Topic	Lecture	Practical (seminar) classes	IW (ind. work)
Content section 1. General issues of occupational pathology. Occupational diseases caused by exposure to industrial aerosols and physical factors			
The global pandemic of COVID-19. Diagnosis of SARS-CoV-2. Clinical manifestations, prevention and treatment. General issues of occupational pathology.		1	2
Pneumoconiosis, chronic bronchitis and COPD of dust etiology	2	2	3
Vibration disease and sensorineural deafness. Altitude and caisson sickness.	2	2	4
Content section 2. Occupational diseases caused by exposure to chemical factors			
Occupational intoxication with substances with a predominant effect on the blood system.	2	2	3
Occupational neurotoxicosis. Professional intoxication with pesticides		2	3
Total of 30 / 1,0 ECTS credits	6	9	15
Final control form		credit	

4. Thematic plan of lectures on the discipline "Occupational diseases"

№	Topic	Hrs
Content section 1. General issues of occupational pathology. Occupational diseases caused by exposure to industrial aerosols and physical factors		
1.	Pneumoconiosis. Silicosis. Silicatosis	2
2.	Vibration disease and sensorineural deafness	2

	Total	4
Content section 2. Occupational diseases caused by exposure to chemical factors		
1.	Lead intoxication	2
	Total	2
	Lectures Hrs	6

5. Thematic plan of practical classes in the discipline "Occupational diseases"

№	Topic	Hrs
Content section 1. General issues of occupational pathology. Occupational diseases caused by exposure to industrial aerosols and physical factors		
1.	The global pandemic of COVID-19. Diagnosis of SARS-CoV-2. Clinical manifestations, prevention and treatment. General issues of occupational pathology.	1
2.	Pneumoconiosis, chronic bronchitis and COPD of dust etiology	2
3.	Vibration disease and sensorineural deafness. Altitude and caisson sickness	2
Content section 2. Occupational diseases caused by exposure to chemical factors and physical factors		
4.	Occupational intoxication with substances with a predominant effect on the blood system	2
5.	Occupational neurotoxicosis. Occupational intoxication with pesticides.	2
	The number of hours of practical classes in the discipline	9

6. Thematic plan of independent work on the discipline "Occupational diseases"

№	Topic	Hrs
1.	The global pandemic of COVID-19. Diagnosis of SARS-CoV-2. Clinical manifestations, prevention and treatment. General issues of occupational pathology	2
2.	Pneumoconiosis, chronic bronchitis and COPD of dust etiology. Curation of the patient and completion the patient card by topic.	3
3.	Vibration sickness, sensorineural deafness, altitude sickness and caisson sickness. Curation of the patient and completion the patient card by topic.	4
4.	Occupational intoxication with substances with a predominant effect on the blood system. Completion the patient card by topic.	3
5.	Occupational neurotoxicosis. Occupational diseases from overstrain of the musculoskeletal system. Occupational intoxication with pesticides. Completion the patient card by topic.	3
	Total	15 hrs.

7. Tasks for independent 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 «Occupational diseases» 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

Recalculation of the average grade for the current activity into a multi-point scale for disciplines ending with an exam

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	200	4.45	178	3.92	157	3.37	135
4.97	199	4.42	177	3.89	156	3.35	134
4.95	198	4.4	176	3.87	155	3.32	133
4.92	197	4.37	175	3.84	154	3.3	132
4.9	196	4.35	174	3.82	153	3.27	131
4.87	195	4.32	173	3.79	152	3.25	130
4.85	194	4.3	172	3.77	151	3.22	129
4.82	193	4.27	171	3.74	150	3.2	128
4.8	192	4.24	170	3.72	149	3.17	127
4.77	191	4.22	169	3.7	148	3.15	126
4.75	190	4.19	168	3.67	147	3.12	125
4.72	189	4.17	167	3.65	146	3.1	124
4.7	188	4.14	166	3.62	145	3.07	123
4.67	187	4.12	165	3.57	143	3.02	121
4.65	186	4.09	164	3.55	142	3	120
4.62	185	4.07	163	3.52	141	Less 3	not enough
4.6	184	4.04	162	3.5	140		
4.57	183	4.02	161	3.47	139		
4.52	181	3.99	160	3.45	138		
4.5	180	3.97	159	3.42	137		
4.47	179	3.94	158	3.4	136		

Points from the discipline are independently converted to both the ECTS scale and the 4-point scale. The points of the EKTS scale are not converted into a 4-point scale and vice versa.

The points of students studying in one specialty, taking into account the number of points scored in the discipline, are ranked according to 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"	«5»
From 140 to 169 points "4"	«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).

13. Methodical support

Educational content:

- 1) synopsis or extended plan of lectures
- 2) plans for practical classes (see paragraph 6 above)
- 3) tasks for independent work (see above, item 8)
- 4) methodical instructions / recommendations for the student
- 5) algorithms for treatment and emergency care (according to the standards of evidence-based medicine)
- 6) algorithms for performing skills practices, medical manipulations, videos
- 7) results of laboratory and instrumental research methods
- 8) models, phantoms, etc.
- 9) simulators, electronic directories, computers with appropriate information support
- 10) questions, tasks, tasks or cases for current and final control (attached).

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