STATE UNIVERSITY
"UZHHOROD NATIONAL UNIVERSITY"
MEDICAL FACULTY 2
Department of Public Health and Humanitarian Disciplines

"APPROVED"
Dean of the Medical Faculty 2
_____ Vasyl KALIY
"30" June 2025

SYLLABUS

CC 17. HYGIENE AND ECOLOGY

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

Uzhhorod 2025

"**Hygiene and ecology**" syllabus for higher education seekers of the subject area 22 "Health", specialty 222 "Medicine", educational program "General medicine".

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The syllabus was discussed and approved at the meeting of the Department ***of Public Health and Humanitarian Disciplines***

Minutes №10/1 of "13" June 2025

Head of the Department _____ /Renata POHORILIAK/

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

Minutes №10 of "16" June 2025

Head of the Scientific-Methodical Commission _____ /Nataliia MALETS/

1. DESCRIPTION OF THE EDUCATIONAL SUBJECT

<table>
<tr><td rowspan="2">Name of indicators</td><td colspan="2">Distribution of academic hours according to the curriculum</td></tr>
<tr><td>Full-time study</td><td>Extramural form of study</td></tr>
<tr><td>ECTS credits – 5</td><td colspan="2">Year of training:</td></tr>
<tr><td>Total number of hours – 150</td><td>2</td><td>-</td></tr>
<tr><td>Number of modules – 2</td><td colspan="2">Semester:</td></tr>
<tr><td rowspan="8">Weekly academic hours for full-time study:

class-room academic hours – 2,5

student's self-study hours – 1</td><td>3-4</td><td>-</td></tr>
<tr><td colspan="2">Lectures:</td></tr>
<tr><td>30</td><td>-</td></tr>
<tr><td colspan="2">Practical classes (seminars):</td></tr>
<tr><td>-</td><td>-</td></tr>
<tr><td colspan="2">Laboratory classes:</td></tr>
<tr><td>70</td><td>-</td></tr>
<tr><td rowspan="2">Type of final control: exam

Form of final control: oral</td><td colspan="2">Self-study:</td></tr>
<tr><td>50</td><td>-</td></tr>
</table>

2. PURPOSE OF THE EDUCATIONAL SUBJECT

The purpose of studying the discipline **" Hygiene and ecology "** is studying the regularities of the impact of environmental factors and conditions on the human body or population and the development of hygiene standards, rules and measures to maximize the use of positive environmental factors and eliminate or limit to a safe level the adverse factors, as well as mastering the necessary knowledge, skills and competencies in the study, analysis and evaluation of environmental factors. The use of developed hygienic recommendations, standards and rules in health care practice contributes to the preservation and promotion of health and prolongs life expectancy, which is the most important problem of mankind.

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

General competencies (GC):

GC 1. Ability to abstract thinking, analysis and synthesis.
GC 2. Ability to learn and master modern knowledge.
GC 3. Ability to apply knowledge in practical situations.
GC 4. Knowledge and understanding of the subject area and understanding of professional activities.
GC 6. The ability to make reasoned decisions.
GC 15. The ability to preserve and multiply moral, cultural, scientific values and achievements of the society based on understanding the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society, as well as in the development of society, equipment and technologies; the ability to use various types and forms of motor activity for active recreation and a healthy lifestyle.

Professional competencies (PC):

PC 4. Ability to determine the necessary mode of work and rest in the treatment and prevention of diseases.
PC 5. Ability to determine the nature of nutrition in the treatment and prevention of diseases.
PC 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.
PC 13. Ability to carry out sanitary and preventive measures.
PC 14. Ability to plan and conduct preventive and anti-epidemic measures against infectious diseases.
PC 15. Ability to conduct an examination of working capacity.
PC 16. Ability to maintain medical records, including electronic forms.
PC 17. Ability to assess the impact of the environment, socio-economic and biological determinants on the health of the individual, family, population.
PC 20. The ability to conduct epidemiological and medical-statistical studies of public health; process social, economic and medical information.
PC 21. Clearly and ambiguously convey their own knowledge, conclusions and arguments on health problems and related issues to specialists and non-specialists, including students.
PC 23. Ability to develop and implement scientific and applied projects in the field of health care.
PC 24. Adherence to ethical principles when working with patients, laboratory animals.
PC 25. To observe professional and academic integrity, bear responsibility for the reliability of the obtained scientific results.

3. PREREQUISITES FOR STUDYING THE EDUCATIONAL SUBJECT

The prerequisites for studying the educational subject " **Hygiene and ecology** " are mastering the following educational subjects (ES) of the educational program (EP):

EC1 Discipline by choice of social and humanitarian direction

4. EXPECTED LEARNING OUTCOMES

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

Program learning outcomes	PLO code
Have a thorough knowledge of the structure of professional activity. Be able to carry out professional activities that require updating and integration of knowledge. Be responsible for professional development, the ability to further professional training with a high level of autonomy.	PLO 1
Understanding and knowledge of basic and clinical biomedical sciences, at a level sufficient to solve professional problems in the field of health care.	PLO 2
Specialized conceptual knowledge that includes scientific achievements in the field of health care and is the basis for research, critical understanding of problems in the field of medicine and related interdisciplinary problems.	PLO 3
Determine the necessary regime of work, rest and nutrition based on the final clinical diagnosis, adhering to the relevant ethical and legal standards, by making an informed decision according to existing algorithms and standard schemes.	PLO 10
Assess the impact of the environment on human health to assess the state of morbidity of the population.	PLO 23

Expected learning outcomes (ELO) that should be achieved by students after mastering the discipline " **Hygiene and ecology** ":

ELO Code	Expected learning outcomes of the discipline	PLO Code
ELO 1	Ability to know the purpose, objectives and content of hygiene as a science.	**PLO** 1
ELO 2	Ability to use methods of hygienic research of environmental factors.	**PLO** 3
ELO 3	Ability to determine the dose of ultraviolet radiation using the Gorbachev biodosimeter.	**PLO** 3
ELO 4	Ability to know the use of climatic factors for health and preventive purposes, sanatorium treatment for various diseases.	**PLO** 1
ELO 5	Ability to determine temperature, humidity and air velocity in enclosed spaces. Ability to know the methods of studying the effects of microclimate on the human body.	**PLO** 3
ELO 6	Ability to assess natural and artificial lighting by various methods.	**PLO** 3
ELO 7	Ability to know the express methods for determining the concentration of carbon dioxide in the air (Lunge-Seckendorf and Prokhorov method).	**PLO** 3
ELO 8	Ability to know the sources of air pollution and their impact on human health.	**PLO** 23
ELO 9	Ability to know the hygienic requirements for the microclimate of housing and its heating.	**PLO** 2
ELO 10	Ability to know the physiological, hygienic, epidemiological and endemic importance of water. Ability to know the sources and means of water supply.	**PLO** 23

ELO 11	Ability to know the sanitary protection of soil and methods of assessing the degree of pollution and the intensity of its self-purification processes.	**PLO** 23
ELO 12	Ability to know biothermal methods of solid waste disposal.	**PLO** 23
ELO 13	Ability to interpret the basic principles of rational nutrition and establish the relationship between nutrition and disease. Ability to recommend measures for the prevention of malnutrition and excessive nutrition.	**PLO** 10
ELO 14	Ability to know the methods of determining the quality of food products and to draw a conclusion about the quality of food products based on the assessment of the results of laboratory analysis. Ability to know the nutritional and biological value of basic food products and carry out their sanitary examination.	**PLO** 3
ELO 15	Ability to diagnose food poisoning of microbial and non-microbial etiology and be able to develop preventive measures to prevent them.	**PLO** 2
ELO 16	Ability to classify working conditions according to the degree of harm and danger and develop measures to prevent occupational hazards.	**PLO** 1
ELO 17	Ability to know the system of preventive measures for the rational organization of the work process	**PLO** 10
ELO 18	Ability to know the methods of studying the functional state of the body during mental and physical work.	**PLO** 2
ELO 19	Ability to know the harmful effects of production factors (physical, chemical and biological) on the body of workers and measures to prevent their negative impact.	**PLO** 2
ELO 20	Ability to know the types of impact of dust and chemical poisons on the body of workers and develop measures for their prevention.	**PLO** 2
ELO 21	Ability to know the basic laws of growth and development of the child's body, methods of anthropometric examination and statistical processing of the data obtained.	**PLO** 3
ELO 22	Ability to evaluate the physical development of individuals and groups by various methods, define health and physical education groups and give them a hygienic assessment.	**PLO** 1
ELO 23	Ability to know the hygienic requirements for the equipment of classrooms, laboratories, classrooms, school workshops and gymnasiums, as well as school textbooks, writing materials and toys.	**PLO** 1
ELO 24	Ability to know the hygienic assessment of the daily routine and educational process of children of different age groups.	**PLO** 10
ELO 25	Ability to know the methodology of hygienic control over the organization of physical and labor training of children and adolescents, as well as the content and objectives of vocational guidance and medical and professional advice.	**PLO** 2
ELO 26	Ability to know the hygienic requirements for the selection of land for the construction of the hospital.	**PLO** 1
ELO 27	Ability to know the hygienic requirements for the planning and operation of various departments and measures to prevent hospital-acquired infections.	**PLO** 1
ELO 28	Ability to know the features of the biological effects of ionizing radiation, factors that determine the degree of radiation damage, types of action and prevention of radiation damage.	**PLO** 3

ELO 29	Ability to know the types of activities of the medical service for hygienic support of troops both in peacetime and in wartime, as well as the forces and means of sanitary, hygienic and anti-epidemic support of troops and the affected population, taking into account the experience of the JFO.	**PLO** 1
ELO 30	The ability to know the types of field deployment of military and civilian formations, types of field dwellings, hygienic requirements for their equipment and operation in emergencies and combat operations, taking into account the experience of the JFO.	**PLO** 1
ELO 31	Ability to know the methods and means of improving the quality of drinking water in the field during emergencies and hostilities, taking into account the experience of the JFO.	**PLO** 1
ELO 32	Ability to know the methods of medical control over the fullness and safety of nutrition of formations in the field during emergencies and hostilities, taking into account the experience of the JFO.	**PLO** 1
ELO 33	Ability to be able to conduct and give a hygienic assessment of sanitary-epidemiological examination of water and food products in the use of weapons of mass destruction, taking into account the experience of the JFO.	**PLO** 3

5. DIAGNOSTIC TOOLS AND EVALUATION CRITERIA OF LEARNING OUTCOMES

Means of assessment and methods of demonstrating learning outcomes

Means of assessment and methods of demonstrating learning outcomes in the discipline are:
The assessment tools and methods for demonstrating the learning outcomes of the academic discipline are:
ELO 1 – written or computer-based testing and oral questioning.
ELO 2 – written or computer-based testing, oral questioning, demonstration of instruments for determining physical and chemical environmental factors.
ELO 3 – written or computer-based testing, oral questioning and demonstration of the method for determining the dose of UV radiation using the Gorbachov biodosimeter, and solving situational (case) tasks.
ELO 4 – written or computer-based testing, oral questioning.
ELO 5 – written or computer-based testing, oral questioning, solving situational (case) tasks and demonstration of instruments for determining temperature, humidity, air movement speed, barometric pressure and air cooling capacity using a spherical catathermometer.
ELO 6 – written or computer-based testing, oral questioning, solving situational (case) tasks and demonstration of the method for determining natural and artificial illumination using an objective luxmeter, and determination of SK, KPO and KZ.
ELO 7 – written or computer-based testing, oral questioning, solving situational (case) tasks and demonstration of instruments for determining carbon dioxide in an enclosed space by the Lunge–Tsekkendorff and Prokhorov methods.
ELO 8 – written or computer-based testing, oral questioning.
ELO 9 – written or computer-based testing, oral questioning, demonstration of instruments for determining indicators of the residential microclimate.
ELO 10 – written or computer-based testing and oral questioning, analysis of the laboratory examination of the tested water, demonstration of water purification methodology.

ELO 11 – written or computer-based testing, oral questioning and analysis of the laboratory examination of the tested soil.
ELO 12 – written or computer-based testing, oral questioning.
ELO 13 – written or computer-based testing, oral questioning, completion of a group assignment on the methodology of collecting and processing time-motion (chronometric) data to determine daily energy expenditure and prescribe a daily dietary ration.
ELO 14 – written or computer-based testing, oral questioning, demonstration of the methodology for compiling a patient menu/layout.
ELO 15 – written or computer-based testing, oral questioning, solving situational (case) tasks and assessment of the wholesomeness of food products based on laboratory analysis results.
ELO 16 – written or computer-based testing, oral questioning and demonstration of preventive measures for occupational diseases.
ELO 17 – written or computer-based testing, oral questioning, demonstration of preventive measures for the rational organization of work.
ELO 18 – written or computer-based testing, oral questioning, demonstration of methods for studying the functional state of the body during mental and physical work.
ELO 19 – written or computer-based testing, oral questioning, demonstration of measures to prevent the negative impact of harmful production factors.
ELO 20 – written or computer-based testing, oral questioning, solving situational (case) tasks, demonstration of the determination of dust and chemical poisons in the air of the production environment using the Migunov electric aspirator and UG-2.
ELO 21 – written or computer-based testing, oral questioning, demonstration of methods for anthropometric examination of children and adolescents and statistical processing of the obtained data.
ELO 22 – written or computer-based testing, oral questioning, demonstration and solving situational (case) tasks on the assessment of physical development of individuals and groups and determination of health and physical education groups.
ELO 23 – written or computer-based testing, oral questioning, demonstration of determining the size of a student's desk and the requirements for school supplies.
ELO 24 – written or computer-based testing, oral questioning, demonstration of the daily schedule and class timetable of one of the schools in Uzhhorod.
ELO 25 – written or computer-based testing, oral questioning, demonstration of the hygienic control methodology for organizing physical and labor education of children and adolescents (using one of the schools in Uzhhorod as an example).
ELO 26 – written or computer-based testing, oral questioning, completion of group tasks to assess the situational and master plans of various medical and preventive institutions.
ELO 27 – written or computer-based testing, oral questioning, demonstration of measures for the working regimen of different departments and prevention of nosocomial infections.
ELO 28 – written or computer-based testing, oral questioning, solving situational (case) tasks and demonstration of developed measures for prevention of radiation injuries.
ELO 29 – written or computer-based testing, oral questioning, demonstration of means for carrying out sanitary-hygienic and anti-epidemic measures in both peacetime and wartime.
ELO 30 – written or computer-based testing, oral questioning, demonstration of instruments and methods for determining microclimate indicators and chemical contamination in field shelters.
ELO 31 – written or computer-based testing, oral questioning, demonstration of means for disinfecting water and instruments for determining radioactive and chemical contamination of drinking water under field conditions (DP-5M; PHR-MV).
ELO 32 – written or computer-based testing, oral questioning, solving situational (case) tasks, demonstration of field rations for feeding servicemen and food concentrates, and demonstration of instruments for determining radioactive and chemical contamination of food under field conditions (DP-5M; PHR-MV).
ELO 33 – written or computer-based testing, oral questioning, solving situational (case) tasks, demonstration of instruments for determining radioactive and chemical contamination of water and food when weapons of mass destruction are used (DP-5M; PHR-MV).

Forms of control and criteria for learning outcomes evaluation

Forms of current control:

- Oral – discussion of theoretical material according to the topic.
- Written – completion of test tasks and solving situational (case) problems.
- Practical demonstration of skills – working with instruments for measuring temperature, humidity, air velocity, and air cooling capacity; determining UV radiation using the Gorbachov biodosimeter; assessing natural and artificial illumination (determining SK, KZ, KPO, angle of incidence and window opening, as well as artificial lighting by calculation method); determining room ventilation and CO_2 concentration using the Lunge–Tsekkendorff or Prokhorov method; interpreting laboratory reports on water and soil testing; conducting laboratory examinations of food products and drawing conclusions on their quality; investigating food poisoning cases; assessing the functional state of the body during mental and physical work; performing anthropometric measurements in children and adolescents; evaluating the physical development of individuals and groups using various methods and determining their health and physical education groups; providing a hygienic assessment of the daily regimen and educational process of children of different age groups; developing measures for the prevention of nosocomial infections; providing a hygienic assessment of radiation protection for medical personnel and patients during the use of ionizing radiation in healthcare facilities; providing a hygienic assessment of modern field accommodations for military personnel both in peacetime and wartime; and conducting sanitary control of nutrition and water supply for the Armed Forces of Ukraine in field conditions during emergencies and wartime.

Form of module control: written

Form of final semester control: exam

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

Current assessment and self-study														Module test	Sum
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	80	**200**
8	8	8	8	8	8	9	9	9	9	9	9	9	9		

T1- T14 – topics

Criteria for evaluating different types of classroom activities:

% of correct answers	Points	ECTS grade	Current performance	Module control work	200-point system
97-100	8	5A	110-120	«A» - 70-80	«A» - 180-200
89-96	7,3	4B	100-109	«B» - 64-69	«B» - 164-179
81-88	7	4C	90-99	«C» - 58-63	«C» - 163-148
73-80	6	3D	73-89	«D» - 55-57	«D» - 128-147
65-72	5,2	3E	70-72	«E» - 50-54	«E» - 120-127
57-64	3-4	2 Fx	30-69	«Fx» - 40-49	«Fx» - 70-119
< 56	< 2	1F	0-29	«F» - 0-39	«F» - 0-69

Oral questioning:

- Definition of hygienic concepts according to the topic – 2 points
- Description of physical, chemical, biological, and psychogenic etiological factors, as well as nutrition, that influence human health – 4–5 points
- Ability to apply developed hygienic recommendations, sanitary rules, and standards in public health and national economy practice – 2 points

Completion of test tasks and solving situational problems (Module I):

% of correct answers	Points	ECTS grade
97-100	8	5A
89-96	7,3	4B
81-88	7	4C
73-80	6	3D
65-72	5,2	3E
57-64	3-4	2 Fx
< 56	< 2	1F

Performance of practical skills:

- Mastering the techniques for determining microclimate, natural and artificial illumination, UV radiation, and CO_2 concentration in enclosed spaces – **1 point**
- Knowledge of instruments used to determine indicators of microclimate, UV radiation, natural and artificial illumination, and CO_2 concentration in enclosed spaces – **1 point**
- Ability to determine:

– microclimate indicators using the **August psychrometer** and **spherical catathermometer**;
– preventive UV radiation dose using the **Gorbachov biodosimeter**;
– indicators of natural illumination (SK, KZ, KPO, angle of incidence and window opening) and artificial illumination using a **calculation method**;
– CO_2 concentration in a room using the **Lunge–Tsekkendorff** or **Prokhorov method**;

- conduct laboratory examination of food products and draw conclusions on their quality – **5 points**
- Ability to develop preventive measures against the harmful effects of microclimate, insufficient natural and artificial illumination, inadequate or excessive solar radiation, and CO_2 poisoning – **1–2 points**

Distribution of points received by higher education seekers (module 2)

Current assessment and self-study																		Module test	Sum
T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	80	**200**

T1 - T19 - topics

Criteria for evaluating different types of classroom activities:

% of correct answers	Points	ECTS grade	Current performance	Module control work	200-point system
97-100	8	5A	110-120	«A» - 70-80	«A» - 180-200
89-96	7,3	4B	100-109	«B» - 64-69	«B» - 164-179
81-88	7	4C	90-99	«C» - 58-63	«C» - 163-148
73-80	6	3D	73-89	«D» - 55-57	«D» - 128-147
65-72	5,2	3E	70-72	«E» - 50-54	«E» - 120-127
57-64	3-4	2 Fx	30-69	«Fx» - 40-49	«Fx» - 70-119
< 56	< 2	1F	0-29	«F» - 0-39	«F» - 0-69

Oral questioning:

- Definition of hygienic concepts according to the topic – 1 point.
- Characteristics of physical, chemical, biological, and psychogenic etiological factors of the working environment; methods for assessing the physical development of children and adolescents; evaluation of the daily routine and school timetable; issues of physical and labor education, career guidance, and medical consultation; planning and content of the work of healthcare facilities; ionizing radiation and its use for the diagnosis and treatment of certain diseases; hygienic assessment of modern field accommodations for military personnel in both peacetime and wartime; sanitary control of nutrition and water supply for the personnel of the Armed Forces of Ukraine in field conditions during emergencies and wartime – 3–4 points.
- Ability to apply in practice the developed hygienic recommendations, sanitary rules, and regulations in public health and national economy – 1 point.

Completion of test tasks and solving situational problems (Module II):

% of correct answers	Points	ECTS grade
97-100	8	5A
89-96	7,3	4B
81-88	7	4C
73-80	6	3D
65-72	5,2	3E

57-64	3-4	2 Fx
< 56	< 2	1F

Performance of practical skills:

- Mastering the techniques for determining anthropometric indicators and methods for assessing the physical development of children and adolescents; methods for detecting toxic and radioactive substances in water and food products – 1 point
- Knowing the instruments used for measuring anthropometric indicators, ionizing radiation, and devices for detecting radioactive and toxic substances in water and food products – 1 point
- Being able to assess the physical development of individuals and groups using various methods and determine their health and physical education groups; to provide a hygienic assessment of the daily routine and educational process of children of different age groups; to evaluate radiation protection measures for staff and patients during the use of ionizing radiation in healthcare facilities; to assess the hygienic conditions of modern field accommodations for military personnel in both peacetime and wartime; and to carry out sanitary control of nutrition and water supply for the personnel of the Armed Forces of Ukraine in field conditions during emergencies and wartime – 3 points
- Being able to develop preventive measures for healthcare-associated infections; protection measures for staff and patients during the use of ionizing radiation in healthcare facilities; and preventive measures for certain diseases among schoolchildren – 1 point

Evaluation of certain types of educational work in the discipline

Type of activity of the higher education seeker	**Module 1**		**Module 2**	
	Number	Maximum number of points (total)	Number	Maximum number of points (total)
Practical classes (seminars)				
Laboratory classes (admission, completion and defense)	14	120	19	112
Inspection report			1	8
Module test		80		80
Scientific Report				+
Total		**200**		**200**

Criteria of current educational activity evaluation

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

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

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

The grade *"unsatisfactory"* (0-119 points) is awarded to students who did not participate in the discussion of the most complicated issues on the studied topic, gave less than 60% correct answers to standardized

test tasks, made gross mistakes in answers to written tasks or did not answer them at all, did not complete practical tasks and did not properly present their results.

Criteria for module test evaluation

A module test is done by completing prepared tasks (test cards) with different cards having the same difficulty level. All students are allowed to complete the module test, regardless of the current assessment's results and the presence of unfulfilled missed practical classes. The period of 1.5 hours is given to complete the entire module test. It is forbidden to use any information sources while completing the module test.
The grade "*excellent"* (180-200 points) is awarded to students who gave at least 90% correct answers to standardized test tasks and completed written tasks without errors.
The grade "*good*" (148-179 points) is awarded to students who gave at least 74% of the correct answers to standardized test tasks and made some minor mistakes in the answers to written tasks.
A student who gave at least 60% of the correct answers to standardized test tasks and made significant mistakes in the answers to written tasks receives the grade "satisfactory" (*120-147* points).
The grade "*unsatisfactory*" (0-119 points) is awarded to students who gave less than 60% correct answers to standardized test tasks, made gross errors in answers to written tasks, or did not provide answers to the designed written tasks.

Criteria for the final semester control evaluation

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

Criteria for the module final semester control evaluation

- the grade "*excellent*" (180-200 points, A) is awarded to students who: have comprehensive, systematic, and deep knowledge of educational and syllabus material; are able to independently perform the tasks prescribed by the syllabus, apply the acquired knowledge and skills in non-standard situations; learned the basic and familiarized themselves with the additional literature recommended by the program; mastered the interrelationship of the main concepts of the discipline and are aware of their importance for the profession they acquire; freely express their own opinions, independently evaluate various life phenomena and facts, revealing their personal position; independently determine the individual goals of their own educational activity, revealed creative abilities and used them when studying the syllabus material, as well as demonstrated interest to scientific work.
- grade "*good*" (164-179 points, B) is awarded to students who: have comprehensive, systematic, and deep knowledge of educational and syllabus material, including applying it in practice, have sufficient systematic knowledge in accordance with the syllabus material, apply it reasonably in different situations; have the ability to independently search for information, as well as to analyze,

set and solve professionally oriented problems; while answering the exam/credit questions they might have some inaccuracies, with correcting those themselves. The student should also be able to choose convincing arguments to confirm the studied material;

- the grade "*good*" (148-163 points, C) is awarded to students who: completed the work in general, but during the final control make a certain number of mistakes; are able to compare, generalize, systematize information under the guidance of a teacher, in general independently apply it in practice, control their own activities; learned the curriculum material, successfully completed the tasks prescribed by the program, familiarized themselves with the basic literature recommended by the program;
- the grade "*satisfactory*" (128-147 points, D) is awarded to students who: know the basic syllabus material to the extent necessary for further study and its use in the future profession; perform tasks well, but with a significant number of errors; familiarized themselves with the basic literature recommended by the syllabus; make mistakes when completing tasks during classes or exams but find ways to correct them under the guidance of the teacher.
- the grade "*satisfactory*" (120-127 points, E) to students who: have basic knowledge of educational and syllabus material in the amount necessary for further study and its application in the future profession, and the performance of tasks meets the minimal criteria. Knowledge is reproductive in nature.
- grade "*unsatisfactory*" (70-119 points, FX) is awarded to students who: revealed significant gaps in the knowledge of the main syllabus material and made fundamental mistakes during the completion of tasks provided by the syllabus.
- grade "*unsatisfactory*" (0-69 points, F) is awarded to students who learned the educational material only at the level of elementary recognition and reproduction of individual facts or did not learn it at all; made gross errors when completing the tasks provided by the syllabus; cannot continue their studies and are not ready for professional activity after graduating from the university without re-studying this discipline.

Criteria for Assessing the Module Control Work

Written module test – 80 points:

- 70–80 points – *Grade 5A*
- 64–69 points – *Grade 4B*
- 58–63 points – *Grade 4C*
- 55–57 points – *Grade 3D*
- 50–54 points – *Grade 3E*
- 40–49 points – *Grade 2Fx*
- 0–39 points – *Grade 2F*

Criteria for Assessing the Individual Assignment – Scientific Abstract

Scientific abstract – 8 points total:

- 2 points – correct formatting of the scientific abstract;
- 4 points – accurate writing of the *Review of scientific literature*;
- 1 point – clear and correct *Conclusions*;
- 1 point – properly compiled *List of references* from scientific literature.

Criteria for Assessing the Final Semester Control

a) Ongoing (current) control – 120 points
b) Written module test – 80 points

Notes:

1. When studying topics using the traditional grading system, points are assigned as follows:
    - *"5" – 8 points, "4" – 7 points, "3" – 6 points, "2" – 0 points* (Module 1);

- *"5" – 6 points, "4" – 5 points, "3" – 4 points, "2" – 0 points* (Module 2).

2. The maximum score for current academic activity is 120 points.
3. The final module control is considered passed if the student earns at least 50 out of 80 points.
    - The module control work consists of prepared assignments (tickets) with tasks of equal difficulty.
    - All students are allowed to take the module test regardless of their current performance or missed practical classes.
    - The duration of the module control work is 1.5 hours.
    - The use of any informational sources during the test is prohibited.
    - The grade for the module test is the total score for performing the test tasks and situational task.
4. The module *"Hygiene and Ecology"* is credited to the student if they have earned at least 120 points (70 for current activity + 50 for the final module test).
5. The final (annual module) grade is determined based on the sum of points from the 1st and 2nd module (rating) controls.
    - If one or more modules are failed (less than 120 points), the failed module is not included in the calculation of the annual average grade.

6. SYLLABUS

6.1. The content of the discipline

Module 1: General issues of hygiene and ecology

Topic 1: Hygiene as a science, its purpose, tasks, content, methods of hygienic research. History of origin, main stages of development and current state of hygiene. Hygienic importance of the components of the biosphere (atmosphere, hydrosphere, lithosphere).

1.Hygiene as a scientific discipline, its purpose, tasks, content and subject of study. 2.Methods and techniques of hygienic research. 3.Environmental factors that affect a person. 3.Prevention as a leading principle of health care, types of prevention. 4.Concept of prohygienic standard, objects and principles of hygienic standardization;. 5.Sanitary and legal legislation on environmental protection and public health. 6.Structure of the State Food and Consumer Service. 7.Definition of health, its indicators and classification of environmental factors on which health depends. 8. Laws of hygiene. 9. The origin of the name and periods of development. 10. Empirical, scientific-experimental and modern period of hygiene development. 11. Development of hygienic science in Ukraine. 12. Definition of the biosphere, its structure and components. 13. The concept of the external environment and their elements. 14. The concept of ecology, its content and environmental factors. 15. Classification of physical, chemical and biological environmental factors.

Topic 2: Methods of determining the intensity and preventive dose of ultraviolet radiation. Bioethical issues in the use of UV radiation.

Hygienic value of solar radiation. 2. Spectral composition of solar radiation. 3. Physical characteristics of solar radiation. 4. Biological effect of solar radiation. 5. Hygienic value of infrared radiation of the Sun, pathology caused by its excessive action, its prevention. 6. Infrared radiation of artificial origin, devices for its determination and use of its sources in medicine. 7. Hygienic value of ultraviolet radiation of the Sun and its use in medicine, devices for determination. 8. The main types of biological (biogenic and abiogenic) action of UVR and its features for each region of its spectral composition. 9. Artificial sources of UVR, their use for the prevention of light starvation and diseases and air sanitation. 10. Methods of measuring the intensity of UVR - physical, photochemical, biological, calculated. 11. Units of measurement of UVR intensity used in these methods. 12. The concept of erythema, physiological, prophylactic dose of UVR.

Topic 3. Methods of using ultraviolet radiation for the prevention of diseases and sanitation of the air environment.

1. The main types and mechanism of biological action of UVR: biogenic - general stimulating, pigment-forming, D-vitamin-forming and abiogenic - bactericidal, carcinogenic and others. 2. Different properties of biological action of separate UVR ranges - areas A, B, C. 3. The concept of erythema, physiological and prophylactic dose of UV irradiation, their quantitative expression in different methods of determining the intensity of UVR. 4. Health disorders and diseases associated with UVR deficiency, their prevention. 5. The main symptoms of "solar starvation", preventive measures.

6. Health disorders and diseases associated with excess UVR. "Ozone holes" as a hygienic problem. UVR as an occupational hazard. 7. Methods and means of protection from excessive UV radiation. 8. Artificial sources of UVR, their use for the prevention of light starvation and diseases and air sanitation.

Topic 4. Hygienic importance of climate, weather, their impact on public health.

1.Weather, definition of the concept; Factors that form and characterize the weather; Patterns of atmospheric circulation. 2.Formation of different types of weather. 3.Basic thermobaric processes: trade winds, trade winds, cyclones, anticyclones, atmospheric fronts. Temperature inversion. 4.Influence of weather on psycho-emotional state and health. 5.Heliometeotropic human reactions, their causes and mechanism. 6.Medical classification of weather. 7.Influence of meteorological conditions on the dynamics of air pollution. 8.Medical weather forecasting, principles and methods of prevention of heliotropic reactions. 9.Climate, definition of the concept. Factors that form and characterize the climate of the area. 10.Classification and hygienic characteristics of climatic zones. Climatic zoning of the

territory of Ukraine. 11.Features of climate in different natural and geographical regions. 12.Acclimatization, phases and types of acclimatization. 13.Features of acclimatization in the North, South, arid zone and highlands. 14.Use of climatic factors for health and preventive purposes, sanatorium treatment for various diseases.

Topic 5. Methodology for determining and hygienic assessment of the temperature-humidity regime and air movement speed, their influence on human heat exchange. The method of hygienic assessment of the complex influence of microclimate parameters on human heat exchange (catathermometry, effective, equivalent-effective, resulting temperatures).

1. Hygienic value of air temperature, measuring devices, principles of their construction and measurement rules. Normative temperature values for different premises. 2. Hygienic value of air humidity, types and methods of determination, devices for measurement. Humidity levels for different premises. 3. Heat exchange of the body with the environment. Characterization of ways of heat transfer. 4. Types of thermoregulation, their assessment. 5. Hygienic significance of the movement of atmospheric air, its influence on the formation of climate, weather, purity of the atmosphere. The influence of strong winds on the environment, the physiological state of the body, and its psycho-emotional sphere. 6 . Wind rose and its practical significance. 7 . Methods for determining the direction and speed of air movement in the open atmosphere. 8 . Principle of building and vane anemometers, measurement technique. 9 . Concept of microclimate, its types and factors that characterize it. 10 . Heating microclimate and its impact on the human body. Physiological and pathological manifestations of acute and chronic overheating. Sunstroke and heat stroke. Prevention of overheating. 11. Cooling microclimate and its effect on the human body. Physiological reactions and diseases caused by them (hypothermia, frostbite, etc.). 12. Methods of studying the influence of the indoor microclimate on the human body: the method of catathermometry, effective, equivalent-effective, resulting temperatures, their comparative hygienic assessment.

Topic 6. Methods of determination and hygienic evaluation of natural and artificial lighting of premises.

1. Physical nature and hygienic value of natural lighting of premises of various purposes (residential, educational, industrial, hospital and others). 2. Basic light engineering quantities (light intensity, luminous flux, spectrum, illuminance, brightness, glossiness, light transmission coefficient, luminance) and their measurement units.

3. External and internal factors that affect the level of natural lighting in the premises. 4. Hygienic requirements for natural lighting of premises. 5. Indicators and standards of natural lighting of premises of various purposes. 6. Methodology for assessing room lighting using geometric methods (determination of light coefficient, angle of incidence, opening angle, recess, coefficient of room recess).

7. Methodology for evaluating the lighting of premises using the lighting method. Measurement of illumination with a lux meter. 8. Methods of assessment of the insolation mode of premises.

9. The hygienic value of artificial lighting as an environmental factor.

10 . Hygienic requirements for artificial lighting of premises. 11 . Methods for determining artificial lighting. 12 . Determination of illumination by the Watt calculation method, its essence. 13. Standards of artificial lighting for different premises. 14. Hygienic characteristics of artificial lighting sources: incandescent lamps; fluorescent lamps, their disadvantages and advantages.

Topic 7. Methods of sanitary and chemical research of indoor air environment and its hygienic evaluation. Methodology for determining CO_2 concentration and air oxidizability as indicators of anthropogenic air pollution and room ventilation .

1. Hygienic value of atmospheric air. 2. Chemical composition of atmospheric and exhaled air, hygienic value of its individual ingredients. 3. The main sources, criteria and indicators of chemical pollution of atmospheric air, air of residential, public, industrial premises . 4. Impact of air pollution with chemical substances on human health. 5. Indicators and requirements for air sampling for sanitary and chemical research. 6. Aspiration method of air sampling, devices for air aspiration. 7. Absorbing devices, absorbing environments, their types, purpose. 8. Concept of express methods (colorimetric, linear-colorimetric) determination of chemical impurities in the air. Universal gas analyzer UG-2, structure and principle of action. Krotov's apparatus, the principle of its action and methods of application. 9. Air oxidization and carbon dioxide as sensitive indirect indicators of human air pollution.

10. The effect of different concentrations of carbon dioxide on the body. 11. Express methods for determining the concentration of carbon dioxide in the air (the Lunge-Zeckendorf, Prokhorov method). 12 . Hygienic significance of room ventilation. Types, classification of ventilation of residential, public and industrial purposes. 13 . Ventilation efficiency indicators. Methods of determining the volume and frequency of ventilation. 14. Air conditioning.

Topic 8. Hygiene of populated areas. Housing hygiene. Microclimate, heating, ventilation, natural and artificial lighting, methods of their measurement and hygienic assessment.

1. Urbanization is a social and hygienic problem. 2. Disadvantages and advantages of urbanization. 3. Sources of urban air pollution , their impact on people's health. 4. The influence of the urbanized environment is higher on the state of health of the population. 5. Basic preventive measures to protect the environment. 6. The main groups of the population and their specific weight in the planning of cities and villages. 7. Characteristics of the economic hypothesis when planning settlements. 8. Basic hygienic requirements for the selection of the territory during the development of the city. 9. The basic principle of urban planning , its hygienic significance. 10. Hygienic characteristics of the main areas of urban planning . 11. Hygienic evaluation of forms of construction of a residential area. 12. Hygienic importance of deer stands and their standards. 13. Housing is a social and hygienic problem. 14. About priming standards of living space. 15. Hygienic requirements for the microclimate of housing and its heating.

Topic 9. Water hygiene and water supply. Methods and means of cleaning and disinfection of water in centralized and decentralized water supply.Endemic goiter as a hygienic problem, its etiology, prevention (seafood, iodovanasil). Endemic fluorosis and caries as a hygienic problem, their prevention (defluoridation, fluoridation of water).

1. Water as an environmental factor - physiological and hygienic significance. Norms of water consumption from a physiological and hygienic point of view. 2. Epidemiological significance of water. 3. Hygienic requirements for the quality of drinking water. 4. State standard 383-96 " Drinking water " .5. Biological significance of the excess or insufficient content of some trace elements in water for the occurrence of endemic diseases. 6 . Spring water supply, their hygienic characteristics. 7 . Comparative characteristics of centralized and decentralized water supply systems. 8 . Elements of the water supply when taking water from an artesian well and open sources. 9. Generally accepted methods of water purification in a centralized water supply system (coagulation, settling, filtration), their essence and structures used for this purpose.

10. Water disinfection methods, their classification, hygienic characteristics.

11. Special methods of improving water quality, their essence and hygienic characteristics (desalination, deodorization, decontamination, etc.). 12. Sanitary supervision of local water supply systems. Arrangement and operation of wells. Sanitation of wells. 13 . Zoning sanitary protection of water sources. 14. Endemic goiter and endemic fluorosis as a hygienic problem, their prevention.

Topic 10. Soil hygiene and settlement cleaning .

1. Soil, definition, soil composition. Hygienic, epidemic and endemic significance of the soil. 2. Basic physical and chemical properties of the soil (mechanical composition, porosity, water permeability, filtration capacity, air permeability, capillarity, moisture capacity) and their hygienic significance. 3. Sources of soil pollution, their hygienic characteristics. 4. Sanitary soil protection. 5. Endemic diseases and their prevention measures. 6. Epidemiological importance of soil, factors contributing to the death of microorganisms. 7. The importance of soil in the spread of geohelminths. Periods of death of geohelminths in the soil and factors contributing to it. 8. Self-cleaning of the soil (anaerobic and aerobic conditions of mineralization of organic substances). 9. Decomposition of protein compounds (ammonification and nitrification). 10. Use of soil for disposal of household and industrial waste. 11. Methods of assessing the degree of pollution and intensity of soil self-cleaning processes (chemical, bacteriological and helminthological). 1 2. Hygienic significance cleaning of populated areas from liquid and solid waste. 13. Cleaning of populated areas from liquid waste. 14. Removal system for collection, removal and disposal of liquid waste (sanitization fields and plowing fields). 15. Sewage system for collection, removal and disposal of liquid waste (communal irrigation and filtration fields). 16. Artificial methods of wastewater treatment (methane tanks, septic tanks, aero tanks). 17. Methods of determining the degree of contamination of wastewater with organic substances. 18. Hygienic

characteristics of methods of collection (planned apartment, planned yard), removal and disposal of solid waste of municipal, domestic, industrial, construction origin. 19 . Biothermal methods of solid waste disposal (composting, biothermal chambers, waste disposal plants, incineration).

Topic 11. Food hygiene, its environmental and social problems. Methodology for assessing the nutritional status of a person, his needs for nutrients and energy . Scientific basis of rational, preventive, curative, dietary and curative-prophylactic nutrition. Methods of medical control of providing the body with vitamins.

1. Nutrition as a socio-hygienic problem. 2. Concepts, principles and conditions of rational nutrition. 3. Importance of rational nutrition for maintaining and strengthening health. 4. Theories of nutrition, functions of food and types of nutrition. 5. Daily energy consumption of a person, its main components, methods of determination.

6. Characteristics of population groups depending on energy consumption. Scientific substantiation of physiological norms of nutrition of sex-age and professional population groups. 7. Classification of nutrients (food substances) and their functions in the body (energy, plastic, catalytic, protective). 8. Vitamins as a necessary component of the human diet, their classification, physiological role in the body. 9. The most frequent hypovitaminosis in individual and collective nutrition, their causes. 10. Symptomatic, clinical and biochemical signs of hypovitaminosis C, functional tests for its diagnosis. 11 . Hypovitaminosis A, symptoms, methods of detection. 12 . Hypovitaminosis group B, symptoms, diagnostic methods. 13 . Hypovitaminosis D and E, their symptoms. 14 . The main carriers of water-soluble vitamins. 15 . The main carriers of fat-soluble vitamins. 16 . Methods and means of prevention of hypovitaminosis. The influence of storage conditions, culinary processing of food products, sale of ready-made meals on the preservation of vitamins in them. 17. Comparative hygienic characteristics of natural and synthetic vitamin preparations as means of preventing hypovitaminosis.

Topic 12. Methodology for assessing the adequacy of nutrition of organized teams according to the menu-layout.

1. Questionnaire-survey, weight method of studying nutrition, their essence, advantages and disadvantages in assessing individual and collective nutrition. 2. Questionnaire-survey, weight method of studying nutrition, their essence, advantages and disadvantages in assessing individual and collective nutrition. 3. Laboratory methods for determining the energy value and nutrient composition of the daily ration. 4. Calculation methods for determining and evaluating the quantitative and qualitative composition of the daily ration. 5. Medical, sanitary and hygienic measures to optimize the nutrition of organized teams or individuals.

Topic 13. Physiological and hygienic value of nutrients and hygienic characteristics of food products. Methodology of expert assessment of food products (milk and dairy products, meat , fish, flour) based on the results of their laboratory analysis.

1. Food products, their classification, hygienic characteristics. 2. Methods of determining the quality of food products. 3. Classification of nutrients (food substances) and their functions in the body (energy, plastic, catalytic, protective). 3. Nutritional and biological value of milk and dairy products. Sanitary examination of milk and dairy products. Quality indicators and signs of falsification and spoilage of milk and dairy products (sour cream, kefir, yogurt, cheese, butter, and others).

4. Sour milk products and their medicinal value. 5. Rules for sampling products for laboratory analysis. 6. Drawing up a conclusion about the quality of food products based on the evaluation of the results of laboratory analysis. 7 . Nutritional and biological value of meat and meat products. Sanitary examination of meat and meat products. Marking meat. Prevention of diseases associated with the consumption of poor-quality meat products. 8. Nutritional and biological value of fish and fish products. Sanitary examination of fish, fish products and canned goods. Identification of fish. Diseases associated with the consumption of fish products. 9. Nutritional and biological value of legumes. 10. Nutritional and biological value of vegetables and fruits. 11 . Rules for sampling products for laboratory analysis. 12 . Drawing up a conclusion about the quality of food products based on the evaluation of the results of laboratory analysis. 13 . Hygienic characteristics of food preservation methods and means.

Topic 14. Theoretical aspects and methods of prevention of alimentary and alimentary-related diseases. Methods of investigation and prevention of food poisoning.

1. Alimentary and alimentary-induced diseases, their classification, etiology, basic principles of prevention. 2. Food poisoning, their definition and classification.

3. Food toxic infections: definition, etiology, diagnosis, clinic, principles of prevention. 4. Bacterial toxicoses: botulism, staphylococci, their etiology, diagnosis, clinic, prevention . 5. Mycotoxicoses, their etiology, diagnosis, clinic, prevention. 6. Food poisoning of a non-microbial nature: products that are toxic by nature; products that have acquired poisonous properties due to incorrect storage conditions; products contaminated with toxic substances (xenobiotics) - heavy metals, pesticides and others. 7. Food poisoning of unknown etiology (Urov's disease, Gaff's disease and others), hypotheses of their occurrence, clinical features. 8. Methods of investigating the causes of food poisoning, participation and duties of medical hygienists and medical doctors. Documents issued during and at the end of a food poisoning investigation. 9 . Instructional and methodological and legislative documents used in the investigation of food poisoning and their prevention. 10. Preventive measures to eliminate and prevent food poisoning.

Module 2. Special issues of hygiene and ecology

Topic 1. Methods of hygienic assessment of dangerous and harmful factors of the production environment and the body's reaction to their influence. Sanitary legislation of Ukraine on labor protection (Labor Code).

1. Work and labor as physical and philosophical concepts. Work as a social category. Social division of labor. 2. Definition of the concept of "labor hygiene", its purpose and tasks.

3. Classes of working conditions according to the degree of harmfulness and danger . 4. Articles of the Constitution of Ukraine on labor protection. 5. Sanitary legislation in the field of labor protection. The Code of Labor Laws, its main components and provisions. 6. Definition of the concepts of "occupational harm" and "occupational diseases". 7. Classification of occupational hazards. 8. Occupational hazards associated with improper organization of work:

a) Excessive duration and intensity of work
b) Irrational labor regime
c) Prolonged forced positions
d) Overstrain of individual organs and systems

9. Means of prevention of occupational injuries related to improper organization of work.

Topic 2. Hygiene and physiology of work. The method of hygienic assessment of the difficulty and intensity of work in order to prevent overfatigue and increase work capacity.

1. Types of work, their physiological and hygienic characteristics. Physical work, its difficulty and intensity. Mental work, its tension. Peculiarities of operator work. 2. Physiological changes in the body of a worker in the process of physical and mental and operator work. 3. System of preventive measures for the rational organization of the labor process. 4. Fatigue and overfatigue, definition and scientific justification of their development, their prevention. 5. Principles and criteria of hygienic assessment of work and its classification by degree of difficulty and tension. 6. Research methods of the functional state of the body during mental and physical work.

Topic 3. Hygienic characteristics of harmful factors of the production environment and the organism's reaction to their influence . Methodology of hygienic assessment of noise, vibration, industrial microclimate.

1. Definition of the term "noise". 2. Physical characteristics of noise, units of its measurement. 3. Noise classifications. 4. Effect of noise on the organ of hearing. 5. Specific and non-specific noise. 6. Noise sickness. 7. GDR of noise for different premises. 8. Noise control measures. 9. Definition of the term "vibration". 10. Classification of vibration. 11. Physical characteristics of vibration, measurement units of vibration parameters. 12. The biological effect of vibration, the main symptoms of vibration disease. 13. Devices for measuring the levels and spectral composition of noise and vibration, the procedure for working with them. 14. Measures to reduce the adverse effect of vibration on the human body. 15. Definition of the concept of "production microclimate" and the factors characterizing it. 16. Health disorders and diseases associated with the effect of the heating microclimate. 17. Health disorders and diseases associated with the cooling microclimate. 18. Preventive measures aimed at improving

working conditions in hot and cold shops. 19. Hygienic regulation of production microclimate parameters in warm and cold seasons. 20. Atmospheric pressure as an industrial hazard. 21. Prevention of diseases associated with exposure to high and low atmospheric pressure. 22. Electromagnetic radiation as an industrial hazard. 23. Organization of measures to prevent the harmful effects of microwave-fields.

Topic 4. Occupational diseases and poisoning and their prevention.

1. Sources and hygienic importance of air dust in residential, public, industrial premises and atmosphere. 2. Definition of the concept of "industrial dust". 3. Classification of dust by origin, dispersion and formation mechanism. 4. Physical and chemical properties of dust, on which its harmful effect on the body depends. 5. Diseases associated with the dustiness of the air in residential, public and industrial premises. 6. Pneumoconioses, their types, pathogenesis, prevention. 7. Hygienic air dust regulation as a means of preventing the harmful effects of dust on the body. 8. Classification and characteristics of methods for determining air dustiness: aspiration and sedimentation methods. Determination of dust dispersion. 9. Preventive measures aimed at protecting the air of the atmosphere, residential, public and industrial premises from dust. Individual means of protection against dust. 10. Definition of the concept of "industrial poisons". 11. Classification of industrial poisons according to their origin, chemical structure, degree of danger to the body, cumulative properties, tropism of action. 12. The main ways of entering the body of industrial poisons, their complex, combined, combined, isolated effect. 13. Types of industrial intoxications and features of the clinical picture in case of poisoning with the most common poisons. 14. Transformation of industrial poisons in the body. 15. Accumulation of industrial poisons: material and functional, its significance in the development of occupational poisonings, tropism of the action of poisons. 16. Acute and chronic occupational diseases and poisoning, their features. 17. Influence of industrial environment conditions on the toxic effect of industrial poisons. Risk factors of the working area that enhance the effect of industrial poisons. 18. Basic principles and criteria of hygienic regulation of industrial poisons in the air of the working area as a basis for poisoning prevention. Other methods and means of prevention of poisoning. 19. Clinical features of poisoning with the most common industrial poisons - lead, mercury, carbon monoxide, nitro compounds. 20. Poisoning by pesticides and their prevention. 21 Characteristics of documents that must be used in the process of investigating cases of occupational poisoning or illness: "Emergency notification of an acute occupational illness (poisoning)"; "Occupational disease registration card (poisoning)"; "Journal of accounting for occupational diseases (poisonings)"; "Accident Act".

Topic 5. Hygiene of children and teenagers. Patterns of growth and development of the child's body. Methods of research and assessment of the influence of environmental factors on the health of children and adolescents, definition of groups of health and physical education .

1. Subject and tasks of hygiene of children and adolescents. 2. A brief history of the development of hygiene for children and adolescents. 3. Basic patterns of growth and development of the child's body. 4. Anatomical and physiological features of childhood and their hygienic significance. 5. State of health of the child population, health groups. 6. Physical development as an indicator of health, methods of its determination and evaluation. 7. Methodology of anthropometric examination of children and adolescents (height, body weight, chest circumference, dynamometry, spirometry, chest excursion, somatoscopy). 8. Basics of statistical processing anthropometric data.9. Content and methods of work of doctors who serve nurseries and schools. 10. Organization and conduct of in-depth medical examinations of children and adolescents.

Topic 6. Methods of assessing the state of health and physical development of individual individuals.

1. Basic indicators of physical development of children, groups of physical development. 2. Individual assessment of children's physical development according to the physical development profile.

3. Individual assessment of children's physical development according to assessment tables - regression scale. 4. Assessment of children's physical development using a comprehensive method. 5. Definition of health group. 6. Definition of the physical education group.

Topic 7. Methodology for assessing the state of health and physical development of teams.

1. Assessment of the physical development of teams by comparing the average values of characteristics.

2. Evaluation of the physical development of teams according to the percentage distribution curves, an option in the variation series. 3. Achievements in the field of physical development of children. 4. Acceleration as a social and hygienic problem.

Topic 8. Methods of hygienic assessment of equipment and maintenance of educational institutions for children and adolescents.

1. Hygienic principles of placement of children's facilities in the settlement. 2. Variants of placement of the site of the children's institution. 3. Hygienic principles of planning and construction of preschool institutions. 4. Hygienic requirements for the design and construction of modern secondary schools, boarding schools and sanatorium-forest schools. 5. Hygienic requirements for the main educational premises of the school. 6. Light and air-heat regime, water supply and sewerage of children's institutions. 7. Hygienic requirements for the equipment of classrooms, laboratories, offices, school workshops and gymnasiums. 8. Hygienic requirements for school textbooks, stationery and toys.

Topic 9. Methods of studying age-related psychophysiological characteristics of children and adolescents. Hygienic evaluation of the educational regime of children of different age groups.

1. Anatomical and physiological features of the central nervous system of children and adolescents. 2. Main types of activities of children and adolescents. 3. Definition of concepts: fatigue and primary fatigue, phases of fatigue, their prevention. 4. The main elements of the daily routine of children of different ages. 5. Daily regime of children of preschool, preschool and school age. 6. Hygienic requirements for homework preparation. 7. Children's daily schedule during exam preparation. 8. Organization of recreation for children of different ages. 9. Hygienic basics of teaching children in preschool and preschool age. 10. Peculiarities of the educational process in preparatory and first grades. 11. Peculiarities of the educational process in junior, middle and high school age. 12. Hygienic basics of building a lesson for children of different ages.

13. Hygienic requirements for drawing up a lesson schedule at school. 14. Prevention of myopia and postural distortions in children.

Topic 10. Methods of hygienic control of the organization of physical education and labor training for children and adolescents. Medical-professional consultation and medical-professional selection of adolescents in school and polyclinic conditions .

1. The importance of movement regime for strengthening the health of children and adolescents. 2. The main tasks of physical education of children and adolescents. 3. Basic principles of physical education. 4. The impact of physical education on health and physical development.

5. Hygienic importance of tempering, its types. 6. Rules for taking air and sun baths. 7. Hygienic value of water procedures: types, their importance. 8. Medical supervision of physical education. 9. Groups of physical education of children and teenagers. 10. Hygienic basics of labor, polytechnic and industrial education and training of schoolchildren. 11. Hygienic requirements for manual labor lessons in junior grades. 12. Hygienic requirements for locksmith and carpentry lessons at school. 13. Hygienic requirements for the school workshop for metalwork and carpentry. 14. Hygienic requirements for industrial training of high school students. 15. Professional orientation of schoolchildren.

16. Medical and professional consultation, its meaning.

Topic 11. Basics of preventive and current sanitary supervision. Methodology of reading construction drawings during project examination. Hygienic assessment of placement and planning of individual structural units of the hospital according to project materials.

1. Features of modern hospital construction and operation. 2. Functions of the hospital. 3. Definition of the concept of the situational plan of the area where the hospital is located. 4. Hygienic requirements for choosing a plot of land for the construction of a hospital.

5. Definition of the general plan of the hospital. 6. Zoning of the hospital site.

7. Existing hospital construction systems, their characteristics.

Topic 12. Peculiarities of planning and arrangement of specialized hospitals and departments. Hygienic assessment of the conditions of stay of patients and occupational hygiene of medical workers in medical and preventive institutions .

1. Hygienic requirements for the arrangement, equipment and operation of the reception department. 2. Hygienic requirements for the arrangement, equipment and operation of

the therapeutic department. 3. Hygienic requirements for the arrangement, equipment and operation of the surgical department of the hospital and the operating block of hospitals.

4. Hygienic requirements for the arrangement, equipment and operation of the infectious department of the hospital. 5. Hygienic requirements for the arrangement, equipment and operation of maternity and gynecological departments of a hospital or maternity home. 6. Hygienic requirements for the arrangement, equipment and operation of children's wards of the hospital.

7. Hygienic requirements for the arrangement, equipment and operation of the department of anesthesiology and resuscitation of the hospital. 8. Hygienic requirements for the arrangement, equipment and operation of the radiology department of the hospital. 9. Hygienic requirements for sanitary and technical equipment of hospitals: natural and artificial lighting, heating, ventilation, water supply, sewage, removal and disposal of solid waste, etc. 10. Main areas of prevention of nosocomial infections. 11. Occupational hazards and occupational hygiene of medical personnel in hospital departments of various profiles.

Topic 13. Radiation hygiene, anti-radiation protection in medical facilities and other facilities where sources of ionizing radiation are used. Methods and means of radiation control. Calculation methods for evaluating anti-radiation safety and parameters of protection against external radiation. Hygienic aspects of the accident at the Chernobyl NPP.

1. Definition of the concept of "radiation hygiene". 2. Basic tasks of radiation hygiene. 3. Hygienic characteristics of ionizing radiation. 4. The concept of ionizing radiation, doses and units of their definition. 5. Peculiarities of the biological action of ionizing radiation. 7. Factors that determine the degree of radiation damage.

8. Biological action of ionizing radiation .

9. Natural background of ionizing radiation. Factors that determine the degree of radiation damage . radiation _

10. Prevention of radiation injuries .

11. Hygienic regulation of permissible levels of radiation .

12. Principles of protection when working with radioactive substances and sources of ionizing radiation :

a) principles of protection when working with sealed radioactive sources ;

b) principles of protection when working with open radioactive sources .

13. Radiation control .

Topic 14. Calculation methods for assessing anti-radiation safety and parameters of protection against external radiation. Hygienic assessment of anti-radiation protection of personnel and radiation safety of patients when using ionizing radiation in medical institutions.

Methods of protection against external and internal radiation. 2. Means of protection against external and internal radiation. 3. Methods of protection against external radiation based on the physical laws of its attenuation (protection by quantity, time, distance, shielding). 4. Principles underlying the selection of material and calculation of the thickness of protective shields against β-, γ-, and X-ray radiation. 5. Meaning calculation methods for evaluating radiation safety and parameters of protection against external radiation in a complex of measures for anti-radiation protection of personnel. 6. Prevention of radiation damage. 7. Hygienic regulation of permissible exposure levels.

8. Principles of protection when working with radioactive substances and sources of ionizing radiation:

a) principles of protection when working with sealed radioactive sources ;

b) principles of protection when working with open radioactive sources .

9. Radiation control .

Topic 15. Basics of the organization of sanitary and hygienic measures in the Armed Forces of Ukraine during emergency situations in peacetime and in wartime, taking into account the experience of the OOS .

1. Definition of the concept of "military hygiene", its purpose and a brief history of development.

2. Definition of the concept of "hygienic supply of troops", its constituent parts.

3. Types of activities of the medical service for hygienic provision of troops in peacetime.

4. Types of activities of the medical service for the hygienic provision of troops in wartime . 5 . Forces and means of sanitary-hygienic and anti-epidemic provision of troops and the affected population.

Topic 16. Hygiene of the field placement of troops and the population, taking into account the experience of the OOS.

1. Sanitary and epidemiological intelligence, its organization and registration of results. 2. Hygiene of the field deployment of troops and the injured population. 3. Types of field placement of military and civilian formations (training centers, camps, hiking camps - bivouacs, residential and defense structures buried in the ground). 4. Types of field dwellings (table and improvised), hygienic requirements for their equipment and operation in emergency situations. 5. Requirements for field dwellings buried in the ground (dungeons, dugouts, defensive structures) and the conditions of their stay (area, cubic capacity, ventilation, heating, etc.). 6. Closed fortification structures (storages), standards of area, cubic capacity, MPC of carbon dioxide, sanitation and ventilation. 7. Sanitary and hygienic control over the maintenance of the territory of deployment of troops (population) in field conditions. 8. Sanitary supervision of cleaning the territory of emergency situations and battlefields. 14 . Collection and burial of the dead and the dead. 9 . Sanitary supervision of bathhouse and laundry service of the personnel of formations and the affected population.

Topic 17. Foundations organization and implementation sanitary supervision and medical control of water supply personnel of the Armed Forces of Ukraine in the field conditions and war, taking into account the experience of the OOS.

Physiological, hygienic and epidemiological significance of water. 2. Which services of military and civilian formations and with which equipment carry out survey and selection of water supply sources. 3. Organization and exploration of water sources.4 . Water quality requirements in field conditions. 5. Quantitative norms of water supply of formations in field conditions, their dependence on climatic conditions and extreme circumstances. 6. Organization of field water supply of military and civilian formations. Water supply points and water collection points. 7. Technical means of raising water.8. Methods and means of cleaning, disinfection, desalination and decontamination of water in field conditions in emergency situations and in wartime. 9. Sanitary supervision and medical control of water supply for formations and the population in field conditions during emergency situations.

Topic 18. Basics of organizing and carrying out sanitary supervision and medical control of the nutrition of the personnel of the Armed Forces of Ukraine in field conditions and war, taking into account the experience of the OOS. Basics of organizing medical examination of food in field conditions during emergencies and war.

1. Rational nutrition, conditions for its provision. 2. Physiological norms of nutrition as the basis of its completeness and adequacy to the needs of the body. 3. Organization of nutrition of military and civilian formations in field conditions in emergency situations and during war, its forms (collective, group, individual). Duties of officials. 4. Military rations, their hygienic characteristics. 5. Hygienic assessment of the state of nutrition in the military unit. 6. Field catering stations (PPH), battalion catering stations, types of field kitchens. 7. Organization of food for personnel of formations and medical control of its completeness and safety in the conditions of disasters, hostilities and other emergency situations. 8. Peculiarities of food organization in conditions of contamination of the area and objects with radioactive and poisonous substances and contamination with bacterial means. 9. Methods of deactivation, degassing and disinfection of food and containers. 10. Organization and conduct of sanitary-epidemiological food expertise. 11. Stages of medical examination of food and possible variants of expert opinions.

Topic 19. Foundations organization and implementation sanitary movement control troops and the population during emergencies situations . Labor hygiene of the personnel of the troops when servicing weapons facilities, military equipment, and radar stations.

1. Purpose of troop movement. 2. Types of troop movement. 3. Definition of march and military transport. 4. Measures to prevent overfatigue. 5. Sanitary and hygienic measures during the movement of servicemen by road transport. 6. Prevention of frostbite during transportation by road transport. 7. Prevention of overheating during transportation by road transport. 8. Prevention of swaying during transportation by road transport. 9. Sanitary and hygienic measures during transportation of military personnel by railway transport. 10. Sanitary and hygienic measures when transporting military personnel by water transport. 11. Sanitary and hygienic measures during the transportation of military personnel by air transport. 12. Sanitary and hygienic measures during the movement of military personnel on foot: types and tasks of the march. 13. The viability of military equipment as a physiological and hygienic problem. 14. Air pollution in the working zone with harmful gases and vapors. 15. Occupational hygiene in artillery, missile, and armored forces. Peculiarities of service conditions, their impact on the human body, protective measures. 16. Occupational hygiene in radio engineering troops, when servicing radar stations: specific and non-specific factors, their impact on the body. Methods and means of prevention and control. 17. Hygienic features of the use of individual protective equipment when servicing weapons and military equipment.

6.2. The structure of the discipline

Titles of content modules and topics	**Number of hours**				
	Form of education: full-time				
	Total	including			
		lectures	laboratory classes	individual work	self-study
1	2	3	4	5	6
3rd semester					
Module 1. General issues of hygiene and ecology					
Topic 1. Hygiene as a science, its purpose, tasks, content, methods hygienic of research . History of origin. The main stages of development and the current state of hygiene. Hygienic significance of components of the biosphere (atmosphere, hydrosphere, lithosphere).	7	2	2		3
Topic 2. Methods of determining the intensity and preventive dose of ultraviolet radiation.	4	2	2		
Topic 3. The method of using ultraviolet radiation for the purpose of disease prevention and sanitation of the air environment.	2		2		
Topic 4. Hygienic value climate, weather, them impact on health population.	4	2	2		
Topic 5. Determination and hygienic methods assessment of the temperature-humidity regime and the speed of air movement, their effect on heat exchange a person Hygienic technique comprehensive impact assessments parameters microclimate for heat exchange of a person (catathermometry, effective, equivalently effective, resulting temperature).	4		2		2
Topic 6. Determination and hygienic methods rating natural lighting. The method of determination is hygienic assessment of artificial lighting .	4	2	2		2

Topic 7. Sanitary and chemical methods research air environment premises and its hygienic rating. Determination method CO_2 concentration and oxidizability air as indicators of anthropogenic pollution air and ventilation premises Necessary and actual volume and multiplicity ventilation, their scientific justification	4		2		2
Topic 8. Hygiene populated places Hygiene and housing. Microclimate, heating, ventilation, natural and artificial lighting, methods their measuring and hygienic rating.	4	2	2		
Topic 9. Water hygiene and water supply. Methods and means of clear disinfection of water with centralized and decentralized water suppl Endemic goiter as a hygienic problem, its etiology, prevention (seafood, iodized salt). Endemic fluorosis and caries as a hygienic problem prevention (defluoridation, water fluoridation).	6	2	2		2
Topic 10. Hygiene soil and cleaning of the population places	4	2	2		2
Topic 11. Hygiene food, his environmental and social problems Assessment methodology nutritional status of a person, his nutritional needs substances and energy. Methods medical supervision of provision body vitamins Scientific foundations rational, preventive, curative, dietary and curative-prophylactic nutrition.	8	2	2		4
Topic 12. Assessment methodology adequacy food organized collectives according to the menu schedule.	2	2	2		
Topic 13. Physiological and hygienic value nutrients and hygienic characteristics of food products. Methodology of the expert evaluations food products (milk and dairy products, meat, fish, flour) according to the results of their laboratory analysis.	4	2	2		
Topic 14. Theoretical aspects and methods of prevention alimony and alimony-related diseases Methods of investigation and prevention of food poisoning poisoning	6		2		4
Individual task	0		0		
Module test	2		2		
Total for the module:	65	20	30		21
Total for the semester:	65	20	30		21

4th semester					
Module 2. Special issues of hygiene and ecology					
Topic 1. Hygienic technique evaluations dangerous and harmful factors production environments and reactions body on them influence. Sanitary protection legislation of labor (Labor Code).	4	2	2		
Topic 2. Hygiene and physiology labor Hygienic technique evaluations heaviness and tension labor for the purpose of prevention fatigue and elevation working capacity	3		2		1
Topic 3. Hygienic characteristics of harmful factors production environments and reactions body on them influence. Methodology of hygienic assessment of noise, vibration, industrial microclimate.	6	2	2		2
Topic 4. Occupational diseases and poisoning and their prevention.	4		2		2
Topic 5. Hygiene children and teenagers. Patterns of growth and development children's body Methods research and evaluation impact factors surrounding environment for health children and adolescents, definition groups health and physical education.	5	2	2		1
Topic 6. Methods of assessing health and physical condition development individual individuals	3		2		1
Topic 7. Methodology for assessing the state of health and physical development of teams.	2		2		
Topic 8. Methods hygienic evaluations equipment and maintenance educational and educational institutions for children and adolescents.	5	2	2		1
Topic 9. Methods study aged psychophysiological features children and teenagers. Hygienic rating educational and educational regime of children different aged groups	3		2		1
Topic 10. Methods of hygienic control of the organization of physical education and labor training for children and adolescents. Medical-professional consultation and medical-professional selection of adolescents in school and polyclinic conditions.	2		2		
Topic 11. Basics preventive and current sanitary supervision Methodology of "reading" construction materials drawings during examination projects. Hygienic rating placement and planning individual structural subdivisions hospitals according to the project materials.	6		2		2
Topic 12. Features planning and arrangement specialized hospitals and departments. Hygienic assessment of conditions of stay patients and hygiene labor medical workers in medical and preventive institutions.	5		2		3
Topic 13. Radiation hygiene, anti-radiation protection in medical institutions and others facilities where they are used sources ionizing radiation Methods and means radiation control. Hygienic aspects accident at the Chornobyl NPP.	6	2	2		2
Topic 14. Calculation methods for evaluating anti-radiation safety and parameters of protection against external radiation. Hygienic evaluation of anti-radiation protection of personnel and radiation safety of patients when using ionizing radiation in medical institutions.	3		2		1
Topic 15. Basics organizations sanitary and hygienic measures in the Armed Forces of Ukraine during emergency situations in peacetime	3		2		

and in wartime, taking into account the experience of the Armed Forces of Ukraine.					
Topic 16. Hygiene field placing troops and the population, taking into account the experience of the OOS.	3		2		
Topic 17. Basics organization and implementation sanitary supervision and medical control of water supply personnel of the Armed Forces of Ukraine in the field conditions and war, taking into account the experience of the OOS.	3		2		
Topic 18. Basics organization and implementation sanitary supervision and medical control of nutrition personnel of the Armed Forces of Ukraine in the field conditions and war, taking into account the experience of the OOS. Foundations organization and implementation medical examinations food in the fields under emergency conditions situations and war.	5		2		2
Topic 19. Basics organization and implementation sanitary movement control troops and the population during emergencies situations and war. Labor hygiene of the personnel of the troops when servicing weapons facilities, military equipment, and radar stations.	4		2		2
Module test	8		2		
Individual task	2			8	
Total per module:	77	10	40		21
Total for the semester:	85	10	40	8	21
Total hours:	150	30	70	8	42

6.3. Topics of laboratory classes

№	Topic title	Number of hours	
		Full-time study	Extramural form of study
Module 1. General issues of hygiene and ecology			
1.	Hygiene as a science, its purpose, tasks, content, methods hygienic of research . History of origin. The main stages of development and the current state of hygiene. Hygienic significance of components of the biosphere (atmosphere, hydrosphere, lithosphere).	2	
2.	Methods of determining the intensity and preventive dose of ultraviolet radiation.	2	
3.	The method of using ultraviolet radiation for the purpose of disease prevention and sanitation of the air environment.	2	
4.	Hygienic value climate, weather, them impact on health population.	2	
5.	The method of determination is hygienic assessment of the temperature-humidity regime and the speed of air movement, their effect on heat exchanges a person Hygienic technique comprehensive impact assessments parameters microclimate for heat exchange of a person	2	

	(catathermometry, effective, equivalently effective, resulting temperature).		
6.	The method of determination is hygienic rating natural lighting. The method of determination is hygienic assessment of artificial lighting .	2	
7.	Methods of sanitary and chemical research air environment premises and its hygienic rating. Determination method CO_2 concentration and oxidizability air as indicators of anthropogenic pollution air and ventilation premises Necessary and actual volume and multiplicity ventilation, their scientific justification	2	
8.	Hygiene populated places Hygiene and housing. Microclimate, heating, ventilation, natural and artificial lighting, methods their measuring and hygienic rating.	2	
9.	Water hygiene and water supply. Methods and means of cleaning, disinfection o water with centralized and decentralized water supply Endemic goiter as a hygienic problem, its etiology, prevention (seafood, iodized salt). Endemic fluorosis and caries as a hygienic problem prevention (defluoridation, water fluoridation).	2	
10.	Hygiene soil and cleaning of the population places	2	
11.	Hygiene food, his environmental and social problems Assessment methodology nutritional status of a person, his nutritional needs substances and energy. Methods medical supervision of provision body vitamins Scientific foundations rational, preventive, curative, dietary and curative-prophylactic nutrition.	2	
12.	Assessment methodology adequacy food organized collectives according to the menu schedule.	2	
13.	Physiological and hygienic value nutrients and hygienic characteristics of food products. Methodology of the expert evaluations food products (milk and dairy products , meat, fish, flour) according to the results of their laboratory analysis.	2	
14.	Theoretical aspects and methods of prevention alimony and alimony-related diseases Methods of investigation and prevention of food poisoning poisoning	2	
15.	*1 module test:*	2	
	TOTAL:	**30**	
	Module 2. Special issues of hygiene and ecology		
1.	Hygienic technique evaluations dangerous and harmful factors production environments and reactions body on them influence. Sanitary protection legislation of labor (Labor Code).	2	
2 .	Hygiene and physiology labor Hygienic technique evaluations heaviness and tension labor for the purpose of prevention fatigue and elevation working capacity	2	
3.	Hygienic characteristics of harmful factors production environments and reactions body on them influence. Methodology of hygienic assessment of noise, vibration, industrial microclimate.	2	

4.	About fashion and diseases and poisoning and their prevention.	2	
5.	Hygiene children and teenagers. Patterns of growth and development children's body Methods research and evaluation impact factors surrounding environment for health children and adolescents, definition groups health and physical education.	2	
6.	Methods of assessing health and physical condition development individual individuals	2	
7.	Health assessment methodology and physical development collectives	2	
8.	Methods hygienic evaluations equipment and maintenance educational and educational institutions for children and adolescents.	2	
9.	Methods study aged psychophysiological features children and teenagers. Hygienic rating educational and educational regime of children different aged groups	2	
10.	Methodology of hygienic control of the organization physical and labor training children and teenagers. Medical professional consultation and medical professional selection _ teenagers in the conditions schools and clinics.	2	
11.	Foundations preventive and current sanitary supervision Methodology of "reading" construction materials drawings during examination projects. Hygienic rating placement and planning individual structural subdivisions hospitals according to the project materials.	2	
12.	Features planning and arrangement specialized hospitals and departments. Hygienic assessment of conditions of stay patients and hygiene labor medical workers in medical and preventive institutions.	2	
13.	Radiation hygiene, anti-radiation protection in medical institutions and others facilities where they are used sources ionizing radiation Methods and means radiation control. Hygienic aspects accident at the Chornobyl NPP.	2	
14.	Calculation methods of anti-radiation safety assessment and external radiation protection parameters. Hygienic evaluation of anti-radiation protection of personnel and radiation safety of patients when using ionizing radiation in medical institutions.	2	
15.	Foundations organizations sanitary and hygienic measures in the Armed Forces of Ukraine during emergency situations in peacetime and in wartime, taking into account the experience of the Armed Forces of Ukraine.	2	
16.	Hygiene field placing troops and the population , taking into account the experience of the OOS.	2	
17 .	Foundations organization and implementation sanitary supervision and medical control of water supply personnel of the Armed Forces of Ukraine in the field conditions and war, taking into account the experience of the OOS.	2	
18.	Foundations organization and implementation sanitary supervision and medical control of nutrition personnel of the Armed Forces of Ukraine in the field conditions and war, taking into account the experience of the OOS. Foundations organization and implementation medical	2	

	examinations food in the fields under emergency conditions situations and war.		
19.	Foundations organization and implementation sanitary movement control troops and the population during emergencies situations and war. Labor hygiene of the personnel of the troops when servicing weapons facilities, military equipment, and radar stations.	2	
20.	*II module test:*	2	
	TOTAL:	**40**	
	TOTAL number of hours of laboratory classes in the discipline:	**70**	

6.4. Self-study

№	Topic title	Number of hours	
		Full-time	Extramural form of study
1.	History of origin. The main stages of development and the current state of hygiene.	2	
2 .	Hygienic significance of components of the biosphere (atmosphere, hydrosphere, lithosphere).	1	
3.	The method of hygienic assessment of the complex influence of microclimate parameters on human heat exchange (catathermometry, effective, equivalent-effective, resulting temperatures).	2	
4.	The method of determination is hygienic rating natural lighting. The method of determination is hygienic assessment of artificial lighting .	2	
5.	Methods of determination of CO_2 concentration and air oxidizability as indicators of anthropogenic air pollution and room ventilation. Necessary and actual volume and frequency of ventilation, their scientific justification.	2	
6.	Endemic goiter as a hygienic problem, its etiology, prevention (seafood, iodovanasil). Endemic fluorosis and caries as a hygienic problem, its prevention (defluoridation, water fluoridation, toothpastes).	2	
7.	Hygiene soil and cleaning of the population places	2	
8.	Methods medical supervision of provision body vitamins Scientific foundations rational, preventive, curative, dietary and curative-prophylactic nutrition.	4	
9.	Theoretical aspects and methods of prevention alimony and alimony-related diseases	4	
	Total for the semester:	21	
10.	The method of hygienic assessment of the difficulty and intensity of work in order to prevent overfatigue and increase work capacity.	1	
11.	Hygienic characteristics of harmful factors of the production environment and the body's reaction to their influence.	2	
12.	Methods of investigation of occupational diseases and poisonings.	2	

13.	Methods research and evaluation impact factors surrounding environment for health children and adolescents, definition groups health and physical education.	1	
13.	Methods of assessing the state of health and physical development of individual individuals.	1	
14.	Methods of hygienic assessment of equipment and maintenance of educational institutions for children and adolescents.	1	
	Hygienic rating educational and educational regime of children different aged groups	1	
15.	Foundations preventive and current sanitary supervision Methodology of " reading " construction materials drawings during examination projects.	2	
16.	Hygienic assessment of conditions of stay patients and hygiene labor medical workers in medical and preventive institutions.	3	
17.	Radiation pollution of the environment. Hygienic aspects of the accident at the Chernobyl NPP.	2	
	Hygienic evaluation of anti-radiation protection of personnel and radiation safety of patients when using ionizing radiation in medical institutions.	1	
18.	Foundations organization and implementation medical examinations food in the fields under emergency conditions situations	2	
19.	Labor hygiene of the personnel of the troops when servicing weapons facilities, military equipment, and radar stations.	2	
20.	**Individual tasks** (execution of the Inspection report). The department closely cooperates with the Transcarpathian Regional Center for Disease Control and Prevention of the Ministry of Health of Ukraine regarding the study of the state of contamination of atmospheric air, water, soil, and food products, as well as with the Information and Analytical Center for Health regarding the study and analysis of indicators of health and physical development of children and teenagers and adults of the Transcarpathian region. A number of preventive measures have been developed on the basis of the studied material. These scientific studies and reviews of scientific literature from various sections of hygiene are considered in some laboratory classes and the most important of them are presented at annual student scientific conferences.	8	
	Total for the semester:	29	
	TOTAL FOR YEAR:	50	

6.5. Individual tasks
Execution of the inspection reports - 8 points

Students perform the inspection reports on one of the following topics: Medical-technological and hygienic features of the requirements for planning, equipment and mode of operation of hospitals and departments of different profiles: reception, general medical, pediatric, gastroenterological, surgical, orthopedic-traumatological, neurological, urological, obstetric, gynecological, oncological, radiological, radiological, physiotherapeutic, rehabilitation therapy, infectious diseases hospital, family medicine outpatient clinic, dental clinic, peculiarities of work and occupational hazards of doctors of different profiles. At the final lesson-conference students briefly report the material of their examination (3-5 minutes) and they are given a maximum of 8 points.

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

(if necessary)

Technical equipment/tools: Laptop Acer Aspire 3 A315-51
Laptop Lenovo V15-ADA
Computer in the assistant room :
System unit based on Intel Core i5 processor + TFT monitor LG 24M38A-B
Projector Epson EB-X05
Laptop: Lenovo V15-ADA; Computer model Philips (PC.) with Internet access; Projector: Digital Projector Benq MS502; Printer: laser MFP Canon i - SENSYS MF 231. Software: system software.

8. RECOMMENDED SOURCES OF INFORMATION

Basic sources

1. Hygiene and ecology. Ed by V.G. Bardov. Nova Knyga, Vinnytsa, 2018. – 688 p.
2. Bondar S.O., Gut T.M., Gut R.P. Hygiene and epidemiology in the system of military medical and emergency medicine. Textbook. - All-Ukrainian specialized publishing house "Medicine". 2018. – 344p.
3. Mykyta H.I., Rogach I.M. Hygiene and ecology. Study guide. - Uzhhorod, 2022. -346 p.

Additional sources

1. Formation and development of hygienic science in Ukraine: the way through the epochs and social upheavals (the second half of the XIX - 20s of the XX century): monograph / Kotsur N.I. - Korsun-Shevchenkovsky, 2011. - 726 p.
2. Introduction to preventive medicine. Methodological and historical aspects / V.V.Babienko, A.M.Hrynzovskyi, Y.M.Vorokhta Study guide. K.: Publishing house "Slovo", 2012. 232 p.
3. Fundamentals of ecology: Textbook for students of higher educational institutions / V.G. Bardov, V.I. Fedorenko, E.M. Biletska et al. Vinnytsia: Nova Kniga, 2013. - 424 c.
4. Collection of test tasks for state tests in hygiene, social medicine, organization and economics of health care. Edited by: V.F. Moskalenko, V.G. Bardov, O.P. Yavorovsky - Vinnytsia: Nova Kniga, 2012. - 200 p.
5. Hygiene and ecology in terms, diagrams, tables and tests: textbook by V.F. Moskalenko, O.P. Yavorovsky, D.O. Lastkov, S.I. Garkavy et al. K.: VSV "Medicine", 2012. - 208 p.
6. Radiation hygiene: Textbook / Edited by Prof. V.Y. Umansky and Prof. S.T. Omelchuk. Donetsk: Nord-Press, 2009. 143 p.
7. Hygiene and occupational safety of health workers. Textbook / Edited by V.F.Moskalenko, O.P.Yavorovsky. - Kyiv: "Medicine", 2009. 176 p.
8. Radiation hygiene: Textbook for doctors-interns and doctors in training. V.O. Murashko, D.S. Mechev, S.T. Omelchuk et al. Vinnytsia: Nova Kniga, 2013. - 376 c.
9. Occupational hygiene: Textbook / Y.I. Kundiev, O.P. Yavorovsky, A.M. Shevchenko et al; edited by Academician of NAS of Ukraine, NAMS of Ukraine, Prof. Y.I. Kundiev, Corresponding Member of NAMS of Ukraine Prof. O.P. Yavorovsky - K.: VSV "Medicine", 2011.- 904p.
10. Pohoriliak R.Yu., Goncharuk-Khomyn M.Yu. Shyp D.Ya., Methodical recommendations on «Hygiene and ecology» for independent preparation to practical classes of foreign students of 3 year part 2 UzhNU, 2018 – 49p.
11. Prevention of hospital-acquired infections (hygienic, epidemiological and microbiological aspects) / edited by V.F. Moskalenko - K.: "Zdorovye", 2013. 160 p.
12. Chaplyk V.V. Emergency medicine: textbook for students of higher medical educational institutions / Chaplyk V.V., Oliynyk P.V., Omelchuk S.T. - Vinnytsia: New book, 2012.- 352 p.

13. Pohoriliak R.Yu., Shyp D.Ya., Methodical recommendations on «Hygiene and ecology» for independent preparation to practical classes of foreign students of 2 year part 1 .UzhNU, 2018 – 58p.

Information Internet resources

1. National library of medicine - https://pubmed.ncbi.nlm.nih.gov/7787511/
2. Post Global Public Health Journal - https://journals.plos.org/globalpublichealth/?utm_id=307&utm_source=web&utm_medium=ppc&utm_campaign=307jrn0822&utm_content=dynamic_sem&gclid=CjwKCAiAs8acBhA1EiwAgRFdw418RPVpdZt4_3T9UrnjQK6xXja1KhNit9WcLlipibGnt8_bOh6iWBoCt6IQAvD_BwE
3. Eco-Environment & Health journal - https://journals.plos.org/globalpublichealth/?utm_id=307&utm_source=web&utm_medium=ppc&utm_campaign=307jrn0822&utm_content=dynamic_sem&gclid=CjwKCAiAs8acBhA1EiwAgRFdw418RPVpdZt4_3T9UrnjQK6xXja1KhNit9WcLlipibGnt8_bOh6iWBoCt6IQAvD_BwE
4. International journal of translational medical research and public health - https://ijtmrph.org/index.php/IJTMRPH?gclid=CjwKCAiAs8acBhA1EiwAgRFdw61nwZsUfTv5iZ_7jFoLgSH-2gzyAiU5L7aLNu8jxw7jCdYqes4HyBoCpkoQAvD_BwE
5. United nation climate change news - https://unfccc.int/

Appendix

Results of the further review of the syllabus

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

(underline the correct variant)

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

(Signature) (Surname, initials)

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

(underline the correct variant)

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

(Signature) (Surname, initials)

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

(underline the correct variant)

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

(Signature) (Surname, initials)

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

(underline the correct variant)

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

(Signature) (Surname, initials)