

**National Pirogov Memorial Medical University, Vinnytsia**

**APPROVE**

**Higher Educational Institution  
Vice-Rector for Scientific and  
Academic Work and International Links**

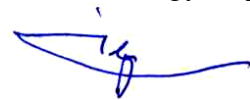


**Inna ANDRUSHKO**

**September 2 2024**

**I AGREE**

**Head of General Hygiene and  
Ecology Department of HEI**



**Igor SERGETA**

**August 28, 2024**

**SYLLABUS  
of the academic discipline  
"HYGIENE AND ECOLOGY"**

Specialty	222 Medicine
Educational level	Master's degree
Educational program	EPP "Medicine", 2023
Academic year	2024 -2025
Chair	General hygiene and ecology
Lecturer	there are no lectures
Contact Information	hygiene@vnmue.edu.ua, str. Stusa, 2 (2 morphological building), 0432672954
Compiler of the syllabus	PhD, Assoc.prof. of HEI Mykola REDCHITS

## 1. Status and structure of the discipline

Discipline status	Mandatory
Discipline code in EPP/place of discipline in EPP	EC 21 / professional training discipline
Course/semester	6th year (XI- XII semester)
Scope of the discipline (total number of hours/ number of ECTS credits)	60 hours / 2 ECTS credits
Number of content modules	5 modules
The structure of the discipline	Lectures - 0 hours Practical classes - 24 hours Independent work - 36 hours
Language of teaching	English
Form of education	Face-to-face or remote according to the order

## 2. Description of the discipline

**Short abstract of the course, relevance.** The subject direction of the discipline is general and special issues of hygiene and ecology. The course is aimed at obtaining and consolidating fundamental knowledge about the regularities of the influence of the environment and internal environment on the human body and public health, as well as a hygienic assessment of the influence of the factors of the production environment of enterprises and environmental factors on the health of workers and the population, preventive measures to preserve health I and environmental protection. Knowledge of hygiene for doctors of preventive and curative profiles is necessary during the performance of professional activities: analysis of the state of health of the population or its individual contingents in connection with anthropogenic and social conditions of life and work; diagnosis of diseases related to the state of the environment and production environment; primary, secondary and tertiary prevention of diseases, organization, implementation and control over the implementation of preventive measures; assessment of conditions of stay in organized teams (children's, educational); analysis of the difficulty and tension of labor and professional activity in order to determine the need to transfer employees with certain health disorders to easier types of work, prescribing medical and preventive nutrition, dispensary service, sanatorium-resort treatment, rehabilitation; the ability to recommend methods and means of daily routine, study, work, personal hygiene, diet, use of natural factors and a complex of methods and means of hardening the body; provision of medical recommendations and orders regarding the use of methods and means of prevention of intra-hospital infections, infections and invasions among the population during its service in the polyclinic, at home, in organized groups; carrying out sanitary and educational work among patients, in organized teams (children's, educational, labor) and among the general population, etc.

**Prerequisites.** In order to successfully master the discipline, the student needs the knowledge obtained in the process of studying the following disciplines of general training: life safety, basics of labor protection, human anatomy, medical biology, medical and biological physics, medical chemistry, biological and bioorganic chemistry, physiology, microbiology.

**The purpose of the course and its importance for professional activity.** The goal of discipline is study of the theoretical foundations of preventive medicine, in particular hygiene and ecology, as sciences that are the basis of the preventive component of the professional outlook of a specialist in the field of "Medicine" training. Laying the theoretical foundations of hygiene and ecology (terminology, laws, methods, principles of hygienic regulation, regulatory and methodological support for the application of preventive measures) and practicing practical skills in the prevention of diseases of infectious and non-infectious origin in accordance with the principles of the current legislation of Ukraine. Acquire the ability to hygienically assess the impact of physical, chemical, microbiological factors, etc. on the human body and the environment; the ability to use favorable health factors of the environment to strengthen human health, harden the body, etc.

**Post-requisites.** The main provisions of the academic discipline can be applied in the process of professional activity. Knowledge about the prevention of the occurrence of various

diseases of infectious and non-infectious etiology is necessary in the practice of a doctor of any specialty.

### **3. Learning outcomes.**

After successfully studying the discipline, the applicant will be able to:

1. Form requirements for oneself and those around you regarding the preservation of the environment, as well as implement ways of preserving it.
2. Use algorithms and standard schemes for determining the regime of work and rest during treatment, based on the preliminary and clinical diagnosis of the disease.
3. Use the principles of rational, preventive, curative-prophylactic and curative-dietary nutrition for the prevention and treatment of diseases of non-infectious and infectious origin.
4. Assess the state of the environment and the presence of factors that affect the health of the population.
5. Know the principles of water supply organization, activity and rest regime, formation of a favorable production environment, primary prevention of diseases and injuries; principles and methods of promoting a healthy lifestyle.
6. To know the principles and systems of planning and implementation of preventive and anti-epidemic measures regarding infectious diseases in typical conditions and in conditions of epidemic adversity based on the results of analysis, data of the examination of the center of infectious diseases .
7. Apply methods of detection and early diagnosis of infectious diseases and food poisoning, organization of primary anti-epidemic measures in the center of infectious diseases . Know preventive and anti-epidemic methods of organizing measures to prevent the spread of infectious diseases .
8. Use methods of assessing the health of the population;
9. Assess environmental factors that negatively affect the health of the population with the help of laboratory studies, assess the health of certain contingents, environmental factors and determine the relationship between them; implement measures to prevent the negative impact of environmental factors on the health of the population;
10. Know the socio-economic and biological determinants that affect the health of the population; types and methods of prevention to prevent the negative impact of socio-economic factors on the health of the population and its individual groups.

### **3. Content and logistics of the discipline**

Content module 1 " <b>Communal hygiene</b> " and " <b>Environmental hygiene and human ecology</b> "	12 hours / 0.40 credits	Practical classes No. 1-3
Content module 2 " <b>Occupational hygiene</b> ", " <b>Hygiene of treatment and prevention facilities</b> " and " <b>Radiation hygiene</b> ".	18 hours / 0.60 credits	Practical classes No. 4-6 Topics for self-study No. 2, 4, 5
Content module 3 " <b>Food hygiene</b> ".	10 hours / 0.33 credits	Practical classes No. 7-8 Topics for self-study No. 3
Content module 4 " <b>Psychohygiene and Chronohygiene</b> ", " <b>Hygiene of children and adolescents</b> ".	8 hours / 0.27 credits	Practical classes #9-10
Content module 5 " <b>Hygiene of disasters and emergency situations</b> ".	6 hours / 0.20 credits	Practical lesson No. 11 Topics for self-study No. 6

The discipline includes 16 topics combined into 1 thematic module.

#### **Module 1. Current issues of hygiene and ecology**

**Content module 1. "Communal hygiene" and "Environmental hygiene and human ecology"**

Topic 1. Hygienic significance of solar radiation and features of using its components for the prevention of human diseases and sanitation of air, water and household items.

Topic 2. Hygiene of water supply in settlements. Hygienic problems of drinking water quality and its improvement. Criteria for the efficiency of cleaning, disinfection, neutralization and decontamination of drinking water. Sanitary protection of water bodies. Sanitary soil protection. Hygienic aspects of sanitary cleaning of populated areas. Modern schemes and methods of wastewater and household waste treatment. Methods and means of disinfection of wastewater in medical institutions.

Topic 3. Hygiene planning of settlements. Hygiene of residential and public buildings. Sanitary protection of atmospheric air. Methodological and methodological bases of studying the impact of a complex of environmental factors on the health of the population. Methodology for assessing the health status of the population in connection with the influence of environmental factors and conditions. Hygienic assessment of the potential risk of the influence of environmental factors on the human body and public health. Hygienic basics of biosafety.

### **Content module 2. "Occupational hygiene", "Hygiene of medical and preventive facilities" and "Radiation hygiene"**

Topic 4. Hygienic assessment of factors of the labor process and production environment. Medical-biological methods of prevention and rehabilitation of occupationally caused pathology among workers in industry and agricultural production.

Topic 5. Hygienic basics of ensuring chemical safety.

Topic 6. Peculiarities of hygienic requirements for the planning and operation of medical and preventive facilities. Hygienic aspects of practical activity of a family doctor. Modern problems of intra-hospital infection and a set of hygienic measures for their prevention. Objective methods of hygienic assessment of living conditions, food and work in the activities of a family doctor.

Topic 7. Labor hygiene of medical workers in medical and preventive institutions.

Topic 8. Patterns of formation of human radiation load in places of residence, methodology of its hygienic assessment and ways of reduction. Radiation danger and anti-radiation protection at objects with radiation-nuclear technologies. Hygienic assessment of anti-radiation protection of personnel and radiation safety of patients when using radionuclides and other sources of ionizing radiation in medical and preventive facilities. Genetic and demographic consequences of the accident at the Chernobyl nuclear power plant.

Topic 9. Organization and implementation of sanitary supervision of the working conditions of liquidators of the consequences of emergency situations

### **Content module 3. "Food hygiene"**

Topic 10. Nutrition and health. Types of food. Methodology for assessing the nutritional status of a person. Nutrition in preventive medicine. Food organization in medical and preventive institutions and industrial enterprises. Hygienic aspects of medical-dietary and medical-prophylactic nutrition. Medicinal and dietary properties of certain food products.

Topic 11. Food poisoning as a hygienic problem. Methods of investigation of food poisoning.

Topic 12. Peculiarities of the interaction of food products with medicinal substances in various functional states of the body and diseases. Sanitary and hygienic control of public catering. Nutrition in an environmentally unfavorable environment. Alimentary regulation of the activity of the gastrointestinal tract, the activity of the endocrine system, metabolism and immunobiological reactivity of the body. Nutritional prevention of diseases of the digestive organs, atherosclerosis, obesity, diabetes, disorders of immunobiological reactivity and premature aging.

### **Content module 4. "Psychohygiene and Chronohygiene" and "Hygiene of children and adolescents"**

Topic 13. Actual problems of psychohygiene and chronohygiene. Hygienic basics of adaptation process optimization. Methods of psychophysiological and psychohygienic research. Hygienic basics of comprehensive health assessment in modern conditions. Physical development as an important criterion for assessing the state of health of children and adolescents.

Topic 14. Hygienic requirements for the planning, improvement and equipment of children's institutions. Hygienic aspects of determining the functional readiness of children to study at school.

Hygienic control of educational work in organizational children's teams and evaluation of its effectiveness. Hygienic basics of the organization of physical and labor education of children and adolescents. Professional orientation of students.

### **Content module 5. "Hygiene in disasters and emergency situations"**

Topic 15. Hygienic basics of prevention and elimination of negative consequences in extreme situations. Organization of sanitary supervision of food and water supply in disaster conditions. Organization of hygienic support during liquidation of the consequences of emergency situations. Peculiarities of temporary accommodation of the injured population and emergency rescue formations.

Topic 16. Hygienic aspects of population living in territories with increased levels of pollution due to the Chernobyl disaster.

In practical classes, students together with the teacher analyze theoretical questions, draw up protocols of laboratory work in workbooks, solve clinically-oriented situational problems and test tasks, formulate conclusions on the studied topic.

The student's independent work involves preparation for practical classes and final control, study of topics for independent work outside the classroom, preparation of presentations, diagrams, tables. Control of learning the topics of independent work outside the classroom is carried out at the final control of the discipline.

Individual work includes researching scientific literature, preparing reviews on given topics for presentation at meetings of the student scientific circle, conducting scientific and practical research, participating in scientific and practical conferences, competitions of student scientific works.

Calendar plans of practical classes, thematic plan of independent work outside the classroom, volume and directions of individual work are published on the website of the department.

The route of obtaining materials: Department of general hygiene and ecology/ To the student/ Full-time study/ Medicine/ 6th year/ Teaching and methodical materials/ or via the link <https://www.vnmu.edu.ua/> Department of general hygiene and ecology#. Materials can be accessed from the student's corporate account [s 000 XXX @ vnmu . edu . u.a.](mailto:s000XXX@vnmu.edu.ua)

### **5. Forms and methods of monitoring learning success**

Current control in practical classes	Methods: oral or written survey, testing, solving situational problems, conducting laboratory studies, their interpretation and evaluation of their results (drawing up a protocol in a workbook)
The final control of the discipline is a differentiated assessment	Methods: oral survey, solution of situational problems, control of practical skills (according to the regulations on the organization of the educational process at VNMU named after E. Pirogov (link <a href="https://www.vnmu.edu.ua/General">https://www.vnmu.edu.ua/General</a> information /Basic documents)
Means of diagnostics of learning success	Theoretical questions, tests, clinically-oriented situational tasks, practical tasks, demonstration of practical skills

### **6. Evaluation criteria**

Assessment of knowledge is carried out in accordance with the Regulation on the organization of the educational process at VNMU named after E. Pirogov (link <https://www.vnmu.edu.ua/General> information/Basic documents)

Current control	According to the 5-point system of traditional evaluations: 5 "excellent", 4 "good", 3 "satisfactory", 2 "unsatisfactory"
Control of practical skills	According to the four-point system of traditional evaluations
Final control of discipline	Points for oral examination, solving situational problems, control of practical skills. Grade for differential assessment:

	71-80 points - "excellent" 61-70 points - "good" 50-60 points - "satisfactory" Less than 50 points - "not satisfactory"/failed
Assessment of discipline:	Current academic performance - from 72 to 120 points (conversion of the average traditional grade for practical classes on a 120-point scale): 60% of the grade for the discipline Final control - from 50 to 80 points: 40% of the grade for the discipline Individual work - from 1 to 12 points Total from 122 to 200 points.

### Discipline assessment scale: national and ECTS

The sum of points for all kinds of educational activities	ECTS assessment	Score on a national scale
<b>180-200</b>	<b>A</b>	credited
<b>170-179.9</b>	<b>B</b>	
<b>160-169.9</b>	<b>C</b>	
<b>141-159.9</b>	<b>D</b>	
<b>122-140.99</b>	<b>E</b>	
<b>0-121.99</b>	<b>FX</b>	not credited with the possibility of retake
	<b>F</b>	unsatisfactory with mandatory retake of the discipline

### 7. Policy of academic discipline/course

The student has the right to receive high-quality educational services, access to modern scientific and educational information, qualified advisory assistance during the study of the discipline and mastery of practical skills. The policy of the department during the provision of educational services is student-centered, based on the normative documents of the Ministry of Education and the Ministry of Health of Ukraine, the university charter and the procedure for providing educational services, regulated by the basic provisions of the organization of the educational process at VNMU named after E. Pirogov and principles of academic integrity.

**Compliance with the rules of the VNMU routine, safety techniques** at practical classes. Instruction on safety techniques for handling chemical reagents, technical and electrical devices is given at the first practical session by the teacher. A student who has not been instructed is not allowed to perform practical work.

After the announcement of the **"AIR ALARM" signal**, students must proceed from the educational premises to the shelter in an organized manner with the teacher. The teacher is the last to leave the audience, checks the premises for the absence of students and employees, and then goes to the shelter. Inside the protective structure, students must quickly and calmly take their seats and observe the rules of behavior in the shelter. During the stay in the protective structure, teachers provide the necessary support, take measures for a comfortable and calm stay in the shelter. After the danger is over and the alarm is declared, the teachers make sure that all students leave the shelter and continue their studies in the classrooms.

**Requirements for preparation for practical classes.** The student must come to the practical session on time. A student who is more than 15 minutes late for class is not allowed to attend the last class and must complete it in the prescribed manner.

The student must be theoretically prepared according to the topic, test tasks for the current topic must be solved in the workbook, extracurricular work has been completed.

During practical classes, the student must wear a medical gown. Students who do not have a robe are not allowed to attend class.

The student must observe the safety rules during practical classes and during his stay in the premises of the department.

During the discussion of theoretical issues, students should demonstrate tolerance, courtesy and respect for their fellow students and the teacher; when performing practical tasks, the workplace must be kept in order and cleaned after performing practical work.

**Use of mobile phones and other electronic devices.** The use of mobile phones and other electronic devices during the lesson is allowed only as a calculator for performing calculations during solving situational problems.

**Academic integrity.** While studying the discipline, the student must be guided by the Code of Academic Integrity of VNMU named after E. Pirogov ( <https://www.vnmue.edu.ua/> general information/ Main documents/ Code of academic integrity). In case of violation of the norms of academic integrity during the current and final examinations (writing off, giving a verbal prompt to a fellow student during the evaluation of his knowledge, using a mobile phone during the evaluation of knowledge, etc.), the student receives a grade of "2" and must work it out to his teacher in the prescribed manner within two weeks after receiving an unsatisfactory grade.

**Skipping classes.** Missed classes are made up in accordance with the procedure established in the Regulations on the Organization of the Educational Process at VNMU named after E. Pirogov (link <https://www.vnmue.edu.ua/> General information/Basic documents) at the time determined by the practice schedule (published on the website of the department <https://www.vnmue.edu.ua/> department of general hygiene and ecology# ) to the teacher on duty. In order to make up for the missed class, the student must submit a completed protocol of the workbook on the relevant topic and answer questions on the topic of the class in writing or orally.

**discipline control is given in the Regulations on the Organization of the Educational Process at VNMU named after E. Pirogov** (link <https://www.vnmue.edu.ua/> General information/Basic documents). Students who have not missed unworked practical classes and received an average traditional grade of at least "3" are admitted to the final examination.

**Additional individual points.** Individual points from the discipline (from 1 to 12) a student can receive for individual work, the scope of which is published on the department's website in the teaching and methodical materials of the discipline, the number of points is determined by the results of the IRS according to the Regulations on the Organization of the Educational Process at VNMU named after E. Pirogov (link <https://www.vnmue.edu.ua/> General information/Main documents).

**Resolution of conflict issues.** In the event of misunderstandings and claims against the teacher due to the quality of educational services, assessment of knowledge and other conflict situations, the student must first notify the teacher of his claims. If the conflict issue is not resolved, the student has the right to submit an appeal to the head of the department in accordance with the Regulation on consideration of appeals by applicants for higher education at VNMU named after E. Pirogov ( <https://www.vnmue.edu.ua/> General information/Basic documents).

**Policy in the conditions of distance learning.** The distance learning procedure is regulated by the Regulation on the introduction of elements of distance learning at VNMU named after E. Pirogov ( <https://www.vnmue.edu.ua/> General information/Basic documents). The main educational platforms for conducting training sessions are Microsoft Team , Google Meets . The procedure for conducting practical classes and lectures, exercises and consultations during distance learning is published on the website of the department ( <https://www.vnmue.edu.ua/> department of general hygiene and ecology / To the student or <https://www.vnmue.edu.ua/> of general hygiene and ecology / News).

**Feedback** from the teacher is carried out through messengers ( Viber, Telegram, WhatsApp ) or e-mail (at the choice of the teacher) during working hours.

## **1. Educational resources**

Educational and methodological support of the discipline is published on the website of the department ( <https://www.vnmue.edu.ua/> department of general hygiene and ecology/ to the student).

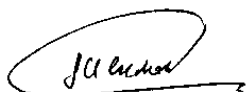
Consultations are held twice a week according to the consultation schedule.

**2. The schedule and distribution of groups by teachers** is published on the website of the department (( <https://www.vnmu.edu.ua/> department of general hygiene and ecology / To the student).

**3. Questions for the intermediate and final tests of the discipline** are published on the website of the department (( <https://www.vnmu.edu.ua/> department of general hygiene and ecology / To the student).

The syllabus for the discipline "Hygiene and Ecology" was discussed and approved at the meeting of the Department of General Hygiene and Ecology (Protocol No. 1, August 30, 2023)

Responsible for the course



Ruslan TEKLIUK

Head of the department



Ihor SERGETA