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Federal State Budget Educational Institution
of Higher Education
Pacific State Medical University
of the Ministry of Health of the Russian Federation

APPROVED BY
First Vice-Rector
_____ / Trankovskaya L.V./
"9" июня 2025

DISCIPLINE WORK PROGRAM

Б1.В.ДВ.02.01 Medical ecology

(name of discipline)

Specialty	**31.05.01 General Medicine for international students (in English)** (code, name)
Degree	Specialist's degree
Profile	02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system)
Mode of study	Full-time
Period of mastering the BEP	**6 years** (nominal length of study)
Institute	of Preventive Medicine

Vladivostok, 2025

Program of the discipline **Б1.В.ДВ.02.01 Medical ecology** is based on:
1) Federal State Educational Standard of Higher Education for the specialty approved by the Order No. 988 of Ministry of Science and Higher Education of the Russian Federation dated August 12, 2020.

2) Curriculum for the 31.05.01 General Medicine for international students (in English), profile 02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system), approved by the Academic Council of FSBEI HE PSMU of the Ministry of Health of Russia, Report No. 8/24-25 dated March 31, 2025.

Work program for the discipline was developed by the writing team of the Institute of Preventive Medicine of the FSBEI HE PSMU of the Ministry of Health of Russia, under the guidance of the director of the Institute, Doctor of Medical Sciences, professor Trankovskaya L.V.

Developed by:

Assistant Professor	Candidate of Medical Sciences, Associate Professor	Gritsina O.P.
(position held)	(academic degree, academic title)	(full name)
Assistant Professor	Candidate of Medical Sciences	Yamilova O.Y.
(position held)	(academic degree, academic title)	(full name)

1. GENERAL PROVISIONS

1.1. Purpose and Objectives of Mastering Б1.В.ДВ.02.01 Medical ecology

The purpose of mastering the discipline is acquiring knowledge, mastering skills, and understanding principles of preventive measures as an important part of fulfilling work activities outlined in the Federal State Educational Standard of Higher Education for the specialty..

Objectives of mastering the discipline:

1. Develop an ability to motivate population towards preserving and promoting one's own health and health of others, following recommendations aimed at the development of a healthy lifestyle (physical activity, rational nutrition, rational work/life balance, rational sleep schedule, etc.);
2. Develop skills necessary to conduct preventive medical examination, periodic health examination, and follow-up care;
3. Learn to collect and conduct statistical analysis of indices characterizing health of various age/sex population groups;
4. Develop skills necessary to maintain conditions favorable for the patients' stay and work of the staff of medical facilities;
5. Improve skills of analyzing scientific literature and official statistical reviews, participating in statistical analysis, and public presentation of the results;
6. Learn to implement preventive and anti-epidemic measures to prevent the occurrence of infectious and non-communicable diseases;
7. Develop skills of examining and assessing factors and conditions of the human environment, as well as identifying the link between the prevalence of diseases and those factors;
8. Learn to summarize and analyze the contents of information sources that reflect the sanitary and hygienic situation on a particular territory;
9. Develop skills of using natural environmental factors, including climate factors, in treatment.

2. DISCIPLINE AS PART OF THE BASIC EDUCATIONAL PROGRAM

Discipline **Б1.В.ДВ.02.01 Medical ecology** is included in the Part developed by the parties of educational process of the Unit 1 of the basic educational program for the specialty 31.05.01 General Medicine for international students (in English), profile 02 "Healthcare" (in the field of providing primary health care to the population in medical organizations: polyclinics, outpatient clinics, inpatient/outpatient facilities of the municipal health care system), and is part of the 3rd semester's curriculum.

3. PLANNED LEARNING OUTCOMES OF THE DISCIPLINE

3.1. Mastering the discipline **Б1.В.ДВ.02.01 Medical ecology** is aimed at the development of students' competencies. The discipline facilitates the development of students' competencies corresponding to the types of professional activity.

Name of competency category (group)	**Code and Name of competency of the graduate**	**Competency Indicators**
Universal competencies		
Health and Safety	UC-8. Is able to create and maintain safe living conditions and workplace while preserving the natural environment and ensuring sustainable societal development, including under the danger and occurrence of emergencies or military conflicts	CI.UC-8_1- estimates life safety conditions necessary to preserve the natural environment and ensure sustainable societal development CI.UC-8_2- identifies harmful occupational agents and hazardous conditions within the framework of professional activity, follows safety precautions and takes measures to prevent emergencies in the process of achieving objectives of professional activity CI.UC-8_3- understands the scope of professional activity during natural and man-made emergencies or military conflicts

3.2. Types of professional activity corresponding to competencies developed over the course of mastering **Б1.В.ДВ.02.01 Medical ecology**:

Types of professional activity objectives

1. *Medical*

Kinds of professional activity objectives

1. *Diagnostics*
2. *Disease prevention*

3.3. Planned learning outcomes of mastering the discipline are represented by knowledge, skills, abilities and/or experience, characterize the stages of developing competencies and ensure achievement of the planned outcomes of mastering the basic educational program. Learning outcomes of a discipline are correlated with competency indicators.

4. SCOPE AND CONTENT OF THE DISCIPLINE

4.1. Scope of the Discipline and Types of Academic Work

Type of Academic Work		Total Hours	Semesters
			3
			hours
1		2	3
Classroom hours (total), including:		**46**	**46**
Lectures (L)		14	14
Practical classes (C)		32	32
Independent work of the student (IW), including:		**26**	**26**
Preparing reports		6	6
Preparing slides presentations		5	5
Preparing for classes (CP)		4	4
Preparing for continuous assessment (CAP)		7	7
Preparing for interim assessment (IAP)		4	4
Type of interim assessment	pass/fail test (T)	T	T
	exam (E)		
TOTAL: TOTAL credit value	hrs.	**72**	**72**
	credits	**2**	**2**

4.2. Contents of the Discipline

4.2.1. Topics of Discipline Lectures and Academic Hours per Semester

No.	Lecture Topic	Hours
1	2	3
	Semester No. 3	
1.	Subject and objectives of medical ecology, its position among preventive medical disciplines	2
2.	Infectious and somatic diseases in humans and the ecology of drinking water	2
3.	Medical and ecological aspects of atmospheric air pollution	2
4.	Medical and ecological aspects of household air pollution	2
5.	Mobile telecommunications and the ecology of urban environments	2
6.	Geographical pathology in Russia: Ecological determinants	2
7.	Core principles of the ecological approach in medicine	2
	Hours per semester total	**14**

4.2.2. Topics of Discipline Practical Classes and Academic Hours per Semester

No.	Practical Class Topic	Hours
1	2	3
	Semester No. 3	
1	Subject and objectives of medical ecology. Key characteristics of the contemporary ecological crisis	4
2	Waterborne infectious diseases. Legionellosis. Issues related to consumption of hard drinking water. Population-based and individual preventive measures	4

3	Environmental risk factors for the development of urolithiasis and fluorosis in humans	4
4	Environmental concerns regarding point-of-use drinking water purification systems. Environmental risk factors for the development of ischemic heart disease, acute myocardial infarction, and osteoporosis in humans	4
5	Medical and ecological aspects of atmospheric air pollution. Environmental risk factors for the development of bronchitis, pneumonia, and lung cancer in humans	4
6	Medical and ecological aspects of household air pollution. Environmental risk factors for the development of bronchial asthma in humans	4
7	Mobile telecommunications and compliance with therapeutic and protective protocols in healthcare facilities	4
8	Core principles of the ecological approach in medicine. Priority scientific methodologies for identifying individual environmental risk factors contributing to health impairment	4
	Hours per semester total	**32**

4.2.3. Independent Work of the Student

No.	Name of the Discipline Section	Type of IW	Total Hours
1	3	4	5
	Semester No. 3		
1	Methodology of medical ecology as a science	Preparing a library-research paper to be presented as an oral report, conduct a literature search using the provided keywords in international scientometric databases, make concise notes summarizing the main content of the material	8
2	Current issues of medical ecology	Preparing a library-research paper to be presented as an oral report, conduct a literature search using the provided keywords in international scientometric databases, make concise notes summarizing the main content of the material	18
	Hours per semester total		**26**

5. REQUIREMENTS FOR IMPLEMENTATION OF DISCIPLINE

5.1. Discipline Requirements for Educational Materials and Provided Information

Essential reading

No.	Name/Title, Resource Type	Author(s)/Editor	Publisher Imprint, Web Address	Number of Copies (accesses) in the Library and Information Center
1	**2**	**3**	**4**	**5**
1	Hygiene and Human Ecology: Study Guide [Electronic resource]	I. G. Krymskaya	2024. – Rostov-on-Don : Feniks Publ. – 424 p. URL: https://www.studentlibrary.ru	Unlimited access
2	Medical Ecology	V. P. Ivanov, N. V.	– St. Petersburg : SpetsLit. –	23

	[Electronic resource]	Ivanova, A. V. Polonikov	320 p. URL: http://books-up.ru	
3	Medical Ecology: Textbook for Higher Education Institutions	A. A. Korolev, M. V. Bogdanov, Al. A. Korolev et al.	– Moscow : Akademiya. – 224 p.	Unlimited access
4	Human Ecology: Study Guide [Electronic resource]	T. A. Trifonova, N. V. Mishchenko	– Moscow : Academic Project. – 154 p. (Gaudeamus series) URL: https://www.studentlibrary.ru	Unlimited access

Supplementary reading

No.	**Name/Title, Resource Type**	**Author(s)/Editor**	**Publisher Imprint, Web Address**	**Number of Copies (accesses) in the Library and Information Center**
1	**2**	**3**	**4**	**5**
1	[Human Hygiene and Ecology: textbook [Electronic resource]	V. I. Arkhangelsky, V. F. Kirillov 2023 -	Moscow : GEOTAR-Media. - 176 p. URL: http://studentlibrary.ru	Unlimited access
2	Human Ecology: textbook for universities [Electronic resource]	A. I. Grigoriev 2016.-	Moscow : GEOTAR-Media. - 240 p. URL: http://studentlibrary.ru	Unlimited access

Online resources

1. Electronic library system "Student Consultant" http://studmedlib.ru/
2. Electronic library system "University Library Online"http://www.biblioclub.ru/
3. Electronic library system "Urait" https://urait.ru/
4. Electronic library system "BookUp" https://www.books-up.ru/
5. Resources owned by the Library and Information Center of FSBEI HE PSMU of the Ministry of Health of Russia https://tgmu.ru/university/bibliotechno-informacionnyj-centr/resursy-bic/sobstvennye/

Online resources and respective user guides are available on the Library and Information Center website Library and Information Center — PSMU (tgmu.ru)

5.2. Discipline Requirements for Facilities and Resources

Information on the facility and resource availability and requirements of the discipline is available on the Facility and resource availability and requirements. FSBEI HE PSMU of the Ministry of Health of Russia (tgmu.ru)" page of the official website of the university.

5.3. List of Information Technologies, Information and Reference Systems, Licensed and Free Software (Including Domestically-developed Software):

1. PolycomTelepresence M100 Desktop Conferencing Application (Videoconference system)
2. SunRav Software tTester
3. 7-PDF Split & Merge
4. ABBYYFineReader
5. Kaspersky Endpoint Security
6. INDIGO online testing system
7. Microsoft Windows 7
8. Microsoft Office Pro Plus 2013
9. 1C:University
10. GARANT system
11. MOODLE (Modular Object-Oriented Dynamic Learning Environment)

6. ASPECTS OF THE IMPLEMENTATION OF THE DISCIPLINE FOR STUDENTS WITH DISABILITIES AND SPECIAL NEEDS

6.1. Availability of Accessible Environment

For students with disabilities and special needs, if a written application is submitted, lectures and practical classes are carried out taking into account health limitations, individual capabilities and medical status (hereinafter referred to as individual characteristics) of the student. Compliance with the following general requirements is ensured: teaching aids for collective and individual use are provided, required technical assistance is provided by an assistant; buildings and premises where lectures and practical classes are taking place meet accessibility requirements, other arrangements lack of which makes it impossible or difficult to master the discipline are made.

6.2. Ensuring Compliance with General Requirements

When lectures and practical classes are carried out at the written application of the student, the following general requirements are met: lectures and practical classes for students with disabilities and special needs take place at the same location as for students who do not have disabilities, if this does not cause difficulties for students; an assistant (assistants), who provide(s) students with the necessary technical assistance taking into account individual characteristics of the student, is (are) provided; necessary teaching aids are provided, taking into account individual characteristics of the student.

6.3. Availability of the Internal Policies and Procedures of FSBEI HE PSMU of the Ministry of Health of Russia to Students with Disabilities in a Format Accessible to Them.

All internal policies and procedures of FSBEI HE PSMU of the Ministry of Health of Russia concerning the discipline are made available to students with disabilities in a format accessible to them.

6.4. Increase in the Time Limit of Interim Assessment for Students with Disabilities and Special Needs in Relation to the Established duration

Format of the interim assessment of academic performance within the scope of the discipline conducted for students with disabilities and special needs is selected taking into account individual characteristics of the students (orally, by writing on paper, by typing on a computer, as a test, etc.). The duration of the interim assessment in relation to the established duration is increased at the written application of the student with disabilities. Time limit for the student's preparation for the test is increased by at least 0.5 hours.

7. STAFFING REQUIREMENTS OF THE DISCIPLINE

Academic teaching personnel that ensure the implementation of the discipline education process meet the requirements of the Federal State Educational Standard of Higher Education for the 31.05.01 General Medicine specialty; list of the aforementioned personnel is available on the website of the educational organization.

8. TUTORIAL WORK

Type of tutorial work	Forms and approaches to tutorial work	Assessment criteria
Assistance in personal growth	Overt Problem-centric debates, workshops, Olympiads, professional events (volunteers, organizers, administrators) Measures to prevent delinquency, extremism, and deviant behavior. Participation in volunteer events. Participation in events to promote a healthy lifestyle. Participation in subject and interdisciplinary Olympiads, practical skills competitions, applied science conferences and symposia Talks and problem-centric debates on topics of ethics and deontology in interactions with different categories of participants of professional activity	Portfolio
	Covert – creating atmosphere and infrastructure. Developing a culture of healthy lifestyle and cultivating skills aimed at preserving and improving health. Motivating students to participate in professional, research, administrative, and other kinds of professional activity. Creating atmosphere of kindness and respect with a high level of communication during implementation of the discipline	
Civic position and values	Overt Conducting events that facilitate development of civil culture (roundtable discussions, discussions/debates, and talks). Short discussions on current significant events in case the latter occur.	Portfolio
	Covert Focusing on civic values-oriented position and legal awareness. Cultivating mindful social position during professional activity. Cultivating socially-relevant characteristics and personal experience of community work	
Social values	Overt Highlighting aspects of organization of healthy lifestyle based on health-preserving technologies. Participation in volunteer events. Highlighting ecology-related questions, environmental issues as a factor affecting population health and select population risks.	Portfolio
	Covert Identification in social structure during period of education and in professional activity. Development of environmental awareness and sustainable ecological behavior.	