
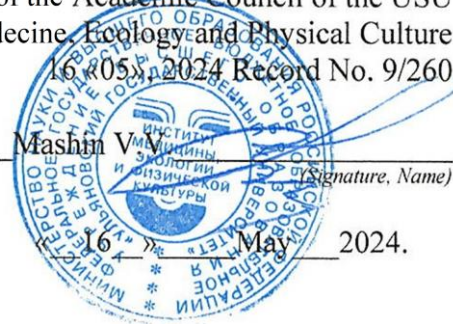


Ministry of Science and Higher Education of the Russian Federation Ulyanovsk State University	Form	
F-Work discipline program		

APPROVED BY
by the decision of the Academic Council of the USU
Institute of Medicine, Ecology and Physical Culture
16 «05» 2024 Record No. 9/260

Chairman Mashin V.V. _____
(Signature, Name)



THE WORKING PROGRAM OF THE DISCIPLINE

Discipline:	Safety of vital activity
Faculty	High-tech Engineering and Physics
Department:	Technosphere safety
Course	1

Specialty (direction):

31.05.01 – «General medicine».
(specialty code (directions), full name)

Form of study: full-time

Date of introduction into the academic process at Ulyanovsk State University: « 1 » 09 2024 y.



The program is updated at the meeting of the department: the protocol No ___ from the " ___ " ___ 20__.


The program is updated at the meeting of the department: the protocol No ___ from the " ___ " ___ 20__.

The program is updated at the meeting of the department: the protocol No ___ from the " ___ " ___ 20__.

Developer information:

Name	Department	Position, degree, rank
Alexey S. Nevaev	Technosphere safety	Assistant of the Technosphere Safety Department

Agreed	Agreed
The head of the Department, implementing discipline	Head of the graduating Department
 /Varnakov V.V._/ Signature Full name	 /Vize-Khripunova M.A._/ Signature Full name
«16» 05 2024 г.	«16» 05 2024 г.

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1. GOALS AND OBJECTIVES OF MASTERING THE DISCIPLINE

The goals of mastering: teaching students the rules of behavior, basic ways of protection and actions in emergency and extreme situations, learning about the theoretical basics of life safety.

Mastering tasks:

To educate students about the sources and main characteristics of the hazardous and harmful factors in the production environment;

To teach protection against natural and artificial hazards;

To train the basic rules of staff in emergency situations;

Encourage students to strive for a healthy and active lifestyle.

2. PLACE OF DISCIPLINE IN THE STRUCTURE OF THE BASIC PROFESSIONAL EDUCATIONAL PROGRAM:

Discipline of the basic part. B1.O.47

The discipline is read in the second semester of the first year of full-time students.

In order to master the discipline, the student must have the following input knowledge, skills, skills and competences:

Knowledge of basic professional concepts and definitions in general biology, human physiology and ecology;

The ability to use the basic provisions and methods of human sciences;

The ability to analyze major environmental problems and processes;

Ownership of general issues of the impact of the production environment on the individual;

The results of the discipline will be necessary for the further learning process within the framework of the phased formation of competencies in the study of the following special disciplines:

- Emergency Medicine;

- Safety of vital activity;

- Immunology;

- Preparing for passing and passing the stateexam.

3. LIST OF THE FORECAST RESULTS ON DISCIPLINE (MODYAL), RELATED:

Code and name of the realized competence	List of planned results of discipline (module) related to competency achievement indicators
UK-8 Able to create and maintain safe living conditions in everyday life and in professional activity to preserve the natural environment, ensure sustainable development of society, including in the event of the threat and occurrence of emergencies and military conflicts.	<p>know:</p> <ul style="list-style-type: none"> - classification and sources of emergency situations of natural and man-made origin; - causes, signs and consequences of hazards, ways to protect against emergencies; - principles of occupational safety organization at the enterprise, technical means of protecting people in an emergency situation. <p>be able to:</p> <ul style="list-style-type: none"> - maintain safe living conditions; - identify signs, causes and conditions of emergency situations; - assess the likelihood of a potential danger and take measures to prevent it. <p>possess:</p> <ul style="list-style-type: none"> - methods of forecasting the occurrence of dangerous or emergency

	situations; - skills in the application of basic methods of protection in emergency situations.
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4. ALL WORK DISCIPLINE

4.1. The amount of discipline in the qualifying units (total)

4.2. Discipline by type of training (hours):

Kind of training	Number of hours (a form of training)	
	Total according to plan	Includes semesters
		4
Contact with the teacher		
Classrooms:	18	18
Lectures	18	18
practical and seminary classes	-	-
laboratory work (laboratory workshop)	-	-
Self-employed	18	18
Current control (number and view)	Testing Summary	Testing Summary
Coursework	-	-
Types of intermediate certification (exam, credit)	Credit	Credit
Total hours in discipline	36	36

4.3. Content of discipline (module) Distribution of hours by topics and types of training work:

Form of study: full-time.

Name and sections and themes	Just	Types of training					Form of current knowledge control
		Classrooms			Activities in an interactive form	Self-employed	
		Lectures	workshops, workshops	laboratory work			
1. Life safety and the production environment	4	2	-	-	-	2	-
2. Harmful factors of the production environment and their impact on the human body	4	2	-	-	-	2	Discussion

3. The effect of electromagnetic fields and radiation on the human body	4	2	-	-	-	2	-
4. Electrical safety	4	2	-	-	-	2	Discussion
5. Life safety and residential (household) environment	4	2	-	-	-	2	-
6. Ensuring industrial safety	4	2	-	-	-	2	-
7. Population and territories safety in emergency situations	4	2	-	-	-	2	-
8. Manifestations of natural emergencies	4	2	-	-	-	2	-
9. Manifestations of technological emergencies	4	2	-	-	-	2	Discussion
Total	36	18	-	-	-	18	-

5. CONTENT OF DISCIPLINE (MODULE)

Subject 1. Life safety and the production environment (Form of conduct - lecture discussion, video demonstration)


Sources of danger in the modern world and their characteristics. The essence of the problem is life safety. The object of life safety study. Dangerous and harmful factors of natural and anthropogenic origin. The subject of the study of life safety. Methodological blocks of the discipline "Life safety". Professional factors of the production environment. General sanitary and technical requirements for production facilities and workplaces. Regulatory of temperature, humidity and cleanliness of indoor air. Optimization of lighting of premises and workplaces. Adaptation of the production environment to the capabilities of the human.

Subject 2. Harmful factors of the production environment and their impact on the human body (Form of conduct - lecture discussion, video demonstration)

Production environment. Dangerous and harmful factors. Classification of Industrial (professional) hazards. Definition and characterization. Classification of dangerous and harmful factors. Classification of forms of work. Classification of mental work. Recommendations for improving working conditions. The effect on the body of an unfavorable industrial microclimate. Industrial vibration and impact on humans. Industrial noise and impact on humans. Industrial dust and effect on the human body. Harmful chemicals and prevention of occupational poisoning.

Subject 3. The effect of electromagnetic fields and radiation on the human body (Form of conduct - lecture discussion, video demonstration)

Basic concepts. Terms and definitions. Classification of electromagnetic radiation sources. Natural sources of electromagnetic radiation. Anthropogenic sources of electromagnetic radiation. The effect of electromagnetic radiation on humans. Biophysics of electromagnetic radiation and human interaction. Electromagnetic radiation of high and ultrahigh frequencies. Electromagnetic radiation of a personal computer. Electromagnetic radiation when using cellular communication. Dangerous effect of electric current on people and animals. Protection against

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electromagnetic radiation and interference. Regulation of electromagnetic radiation. Electromagnetic radiation of industrial frequency. Electromagnetic radiation of high and ultrahigh frequencies. Protection against electromagnetic radiation. Electromagnetic fields and radiation. Ionizing radiation and radiation safety.

Subject 4. Electrical safety (Form of conduct - lecture discussion, video demonstration)

Harmful and dangerous effect of electric current on the human body. Factors affecting the initial state of the electrocuted person. Threshold values of damaging currents. Electrical safety at work. The main causes of electric shock at work. Risk of electric shock. Electro trauma and its types. Statistics of electrical injuries. Primary criteria of electrical safety. Methods and means of electrical protection. Rules for the storage and use of protective equipment. Posters and safety signs. First aid case of electric shock.

Subject 5. Life safety and residential (household) environment (Form of conduct - lecture discussion, video demonstration)

Possible negative and dangerous factors of a domestic nature. The main groups of unfavorable factors of the living environment. The effect on human health of the composition of the air of residential and public premises. Physical factors of the living environment (light, noise, vibration) and their significance in the formation of human life conditions. Rules of action to ensure personal safety in the event of negative and dangerous factors of a domestic nature: - in crowded places; - in public transport; - in case of road accidents; - in the city: on the street, in public places, in an elevator; - on a hike and in nature; - on water bodies; -with household poisoning. Household electrical appliances. Rules for handling them. Ways to prevent and overcome panic and panic moods in dangerous and emergency situations.

Subject 6. Ensuring industrial safety (Form of conduct - lecture discussion, video demonstration)


Fundamentals of industrial safety. The concept of a hazardous production facility. Technogenic risks in modern industry. Man-made emergencies. General industrial safety issues. Basic concepts and definitions in the field of industrial safety. The role and place of industrial safety in the integrated security system. Legislation and the system of state regulation in the field of industrial safety. Principles of assigning objects to the category of hazardous production facilities. Hazard and risk analysis at hazardous production facilities. Industrial and fire safety of hazardous production facilities. Industrial safety equipment. Personal protective equipment. Means of protecting the environment from harmful factors. Cleaning of gas and dust emissions. Cleaning from gas pollution and vapors. Cleaning of industrial and domestic wastewater.

Subject 7. Population and territories safety in emergency situations (Form of conduct - lecture discussion, video demonstration)

The concept of emergency situations, classification. Safety in emergency situations. Terms, concepts, definitions. Classification of emergency situations and their causes. Social emergencies: damaging factors and methods of protection. The main ways to protect the population in an emergency: shelters, anti-radiation shelters, the simplest. Public notification; Evacuation. The concept of risk. Emergency statistics in the Russian Federation. Population and territories protection in emergency situation.

Subject 8. Manifestations of natural emergencies (Form of conduct - lecture discussion, video demonstration)

The concept of natural emergencies. Classification, patterns of manifestation of natural

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emergencies. General characteristics of emergencies of natural origin. Natural emergencies: earthquakes, floods, hurricanes. Damaging factors and methods of protection. Natural emergencies: tornadoes, landslides, mudslides, avalanches, wildfires. Damaging factors and methods of protection. Geological emergencies. Organization of protection of the population and production personnel. Meteorological emergencies. Organization of public protection. Hydrological emergencies. Marine hazards. Organization of public protection. Biological emergencies. Organization of protection of the population and production personnel. Space and heliophysical emergencies. Organization of public protection.

Subject 9. Manifestations of technological emergencies (Form of conduct - lecture discussion, video demonstration)

The concept of technological emergencies. Characteristics of technological emergencies. Man-made emergencies: transport accidents, fires and explosions, accidents with the release of hazardous chemicals, accidents with the release of radioactive substances, accidents with the release of biologically hazardous substances. Man-made emergencies: sudden collapse of buildings and structures, accidents on communal life support systems, accidents at sewage treatment plants. Damaging factors and methods of protection. Classification of emergencies by the scale of their spread. Classification of emergencies by the rate of development. Classification of emergencies by the nature of the source of occurrence.

6. TOPICS OF PRACTICAL AND SEMINARY

"This type of work is not provided by up"

7. LABWORKS

"This type of work is not provided by up."

8. TOPICS OF COURSEWORKS, CONTROL WORKS, ABSTRACTS

Subjects of abstracts:

1. Harmful production factors.
2. Environmental impact on human health.
3. Harmful production factors affecting medical workers.
4. Electromagnetic fields. Protection from EF.
5. Exposure to human static electric and magnetic fields, electromagnetic fields of industrial frequency, electromagnetic radio frequency fields.
6. Exposure to microwave radiation on the organs of vision, skin, central nervous system, blood composition and the state of the endocrine system.
7. The normalization of electromagnetic fields.
8. Electric current. Exposure to electric current on humans.
9. The effect of the parameters of the chain and the state of the human body on the outcome of electric shock.
10. Basic means of electrical protection.
11. The concept of a healthy lifestyle (HLS).
12. Psychological mechanisms for protection against stress.
13. Safety measures for humans in the domestic habitat.
14. A brief description of first aid rules.
15. Categories of individual and collective types of protection.
16. Means of occupational safety. Classification of operational safety products.
17. Personal protective equipment. Special clothing and special shoes. Eye and face protection.
18. Industrial injuries and prevention measures.

19. Public health and safety policy.
20. The safety standards system.
21. State oversight of compliance with health and safety legislation.
22. The specific effects of striking factors on people and objects of nuclear, chemical, bacteriological weapons.
23. The striking factors of modern weapons based on new principles. Protecting people and objects from wartime emergencies.
24. Classification, patterns of manifestation of social emergencies. Organization of public protection.
25. Geological emergencies. Organization of protection of the population and production personnel.
26. Natural fires. Organization of public protection.
27. Meteorological emergencies. Organization of public protection.
28. Hydrological emergencies. Marine hazards. Organization of public protection.
29. Biological emergencies. Organization of protection of the population and production personnel.
30. Space and heliophysical emergencies. Organization of public protection.
31. Accidents with emissions (threat of emissions) of chemically, biologically hazardous substances. Organization of protection of the population and production personnel.
32. Accidents with emissions (threat of emissions) of radioactive substances. Organization of protection of the population and production personnel.
33. Hydrodynamic accidents. Organization of protection of the population and production personnel.
34. Accidents on communal life systems. Organization of public protection.
35. Transport emergencies. Organization of public protection.

The purpose and objectives of the abstracts should be strictly consistent with the given subject.


Requirements for the content of abstracts: is met within the competences of the specialty (direction) of the graduate (Section 3 of the Working Program).

Rules of registration of abstracts: Font 14, all fields, volume of 40-60 pages, necessarily the presence of a completed front page, a list of notations, content, a list of used literature.

9. LIST OF QUESTIONS TO THE CREDIT

1	Formulate the concept and name the types of occupational hazards of the production environment.
2	Give a brief description of the main forms of human labor activity.
3	The concept of industrial injury.
4	Describe the methods of analyzing the causes of occupational injuries.
5	What are the requirements for production facilities and workplaces?
6	The value of ventilation and its classification according to the method of air exchange.
7	Name the types of industrial lighting and the units of measurement of the illumination level.
8	The concept and classification of the industrial microclimate.
9	What changes and diseases can develop in the body of workers when exposed to an unfavorable industrial microclimate?
10	What document regulates the requirements for the production microclimate?

11	What is vibration?
12	Types of vibration and its effect on the body.
13	Specify the methods of rationing and permissible vibration levels.
14	What methods are used to reduce the vibration level of machinery and equipment?
15	Describe the sources and give a classification of industrial dust.
16	What diseases occur when industrial dust is exposed to the human body?
17	Name the measures to prevent dust diseases.
18	Specify the possible ways of entry and transformation of harmful substances (poisons) in the body.
19	What effect have harmful substances on the human body?
20	List the measures to prevent occupational poisoning.
21	What indicators characterize electromagnetic oscillations?
22	What effect have electromagnetic fields of radio frequencies on the human body?
23	Describe the effect of electric fields of industrial frequency currents on the human body.
24	List the main means of protection from electricity.
25	The basic algorithm of first aid in case of electric shock.
26	The modern concept of the residential (household) environment and its characteristic features.
27	What means are used to extinguish fires?
28	The main groups of negative factors of the living environment.
29	Sources of noise in the residential environment, and measures to protect the population from its adverse effects.
30	Electromagnetic fields as a negative factor of residential and public buildings and their impact on public health.
31	Expand the concept of "emergency".
32	What is the difference between the concepts of "dangerous situation" and "extreme situation"?
33	What is the difference between the terms "accident", "catastrophe" and "natural disasters"?
34	What is ionizing radiation?
35	What are the current ideas about the biological effect of ionizing radiation?
36	What are the main types of radiation lesions that develop when exposed to ionizing radiation?
37	Describe the main industrial safety equipment.
38	Specify the purpose and types of personal protective equipment used in various sectors of the economy.
39	List the methods of cleaning harmful emissions from dust and gaseous substances.
40	Forms of interaction between society and nature.
41	What is the main purpose of creating a unified state system for the prevention and liquidation of emergency situations?
42	Name the main postulates on which a unified state system for the prevention and liquidation of emergency situations is based.
43	List the organizational levels and subsystems of a unified state system for the prevention and liquidation of emergency situations.
44	Name the types of disasters.
45	What are the main signs of emergency situations?
46	What are the areas of emergency situations?
47	Name the main groups of natural emergencies.
48	Define the terms epidemic, epizootic, epiphytotic.
49	Highlight the general patterns of natural emergencies.


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50	What is the state policy of environmental protection?
51	What is the basis of environmental legislation?
52	Name the management, control and supervision bodies for nature protection, their functions.
53	What is the purpose of establishing the limits of permissible impact on the natural environment?
54	Environmental expertise, certification and responsibility for environmental offenses.
55	Responsibility for environmental offenses.
56	Types of anthropogenic pollution of the environment.
57	The main environmental problems of a global nature.
58	The essence of the concept of "ecological crisis".
59	What groups are emergency situations of technogenic origin divided into?
60	Name the causes of accidents on transport.

10. SELF-EMPLOYED STUDENTS

Form of study: full-time

Name and sections and themes	A kind of self-employed	Volume in hours	Form of control (<i>problem-solving, abstract, etc.</i>)
1. Life safety and the production environment	Preparing for the test	2	-
2. Harmful factors of the production environment and their impact on the human body	Preparing for the test	2	Discussion
3. The effect of electromagnetic fields and radiation on the human body	Preparing for the test	2	-
4. Electrical safety	Preparing for the test	2	-
5. Life safety and residential (household) environment	Preparing for the test	2	Discussion
6. Ensuring industrial safety	Preparing for the test	2	Discussion
7. Population and territories safety in emergency situations	Preparing for the test	2	-
8. Manifestations of natural emergencies	Summary	2	Checking the abstract
9. Manifestations of technological emergencies	Preparing for the test	2	Discussion

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11. EDUCATIONAL, METHODOLOGICAL AND INFORMATION DISCIPLINE ENSURING

A) List of recommended literature

Basic literature:

1. Levchuk I.P., Life Safety in Medicine / Levchuk I.P. - Moscow: GEOTAR Media, 2018. - 112 p. - ISBN 978-5-9704-4607-2 - Text: electronic // ELS "Student's Consultant": [website]. - URL: <http://www.studentlibrary.ru/book/ISBN9785970446072.html>

2. Levchuk I. P., First Aid in Case of Accidents and Emergency Situations: coursebook / I. P. Levchuk, M. V. Kostyuchenko, A. P. Nazarov - Moscow: GEOTAR Media, 2017. - 120 p. - ISBN 978-5-9704-4230-2 - Text: electronic // ELS "Student's Consultant": [website]. - URL: <http://www.studentlibrary.ru/book/ISBN9785970442302.html>

Additional literature:

1. Garkavi A.V., Disaster medicine / Garkavi A.V., Kavalersky G.M. - Moscow: GEOTAR Media, 2019. - 304 p. - ISBN 978-5-9704-5258-5 - Text: electronic // ELS "Student's Consultant": [website]. - URL: <http://www.studentlibrary.ru/book/ISBN9785970452585.html>

2. Levchuk I.P., First Aid in Case of Accidents and Emergency Situations: Preparation Questions for a Modular Assessment / Levchuk I.P., Kostyuchenko M.V. - Moscow: GEOTAR Media, 2015. - 32 p. - ISBN 978-5-9704-3450-5 - Text: electronic // ELS "Student's Consultant": [website]. - URL: <http://www.studentlibrary.ru/book/ISBN9785970434505.html>

Educational and methodological literature:

1. Varnakov V. V. Methodical instructions for the independent work of students in the discipline «Safety of vital activity» for specialties 31.05.01 - General medicine / V. V. Varnakov, D. V. Varnakov, A. S. Nevaev; Ulyanovsk State University. - 2023. - 27 p. - Unpublished resource. - URL: <http://lib.ulsu.ru/MegaPro/Download/MObject/15074>. - Access mode: ELS UISU. - Text: electronic.

Agreed:


Leading specialist of the Science Library / Stadolnikova G. I. / 06.05.2024
The position of a researcher at the Science Library *Name* *Signature* *Date*

b) Software:

1. MS Office;
2. OC Microsoft Windows;
3. Dr. Web.

c) Professional databases, information and reference systems

1. Electronic library systems:

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12. DISCIPLINE LOGISTICS

1. Lecture audiences, equipped with specialized furniture, a training board;
2. Video files;
3. PAPM;
4. Multimedia projector;
5. First aid;
6. "Maxim" CPR simulator.

13. SPECIAL CONDITIONS FOR STUDENTS WITH DISABILITIES

If necessary, students from among persons with disabilities (at the request of the student) can be offered one of the following options for perception of information, taking into account their individual psychophysical characteristics:

- for people with visual impairments: individual tasks and consultations;
- for people with hearing impairments: individual tasks and consultations;
- for people with musculoskeletal disorders: individual tasks and consultations.

Developer:



signature post

Assistant of the Technosphere Safety Department__/Alexey S. Nevaev/