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MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION

Federal State Autonomous Educational Institution of Higher Education

"Moscow Polytechnic University"

(Moscow Poly)

APPROVE
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"30" 05 2022

Dean,
Faculty of Economics and Management
_____ /A.V. Nazarenko/
"30" 05 2022

WORKING PROGRAM OF THE DISCIPLINE

"Safety of Vital Activity"

Field of study
38.03.02 Management

Educational program (profile)
"Business Process Management"

Qualification (degree)
Bachelor

Form of study
Part-time

Moscow 2022

1. Goals and objectives of the discipline

aimmastering the discipline " Safety of Vital Activity " is:

- the formation of a general idea among students about the inseparable unity of effective professional activity with the requirements for human safety and security. The implementation of these requirements guarantees the preservation of the working capacity and health of a person, prepares him for action in extreme conditions.

Discipline tasks:

- in the course of classes, the theoretical knowledge gained is deepened and consolidated on specific practical examples of life safety;
- the knowledge gained should provide the graduate with the possibility of successful work in the direction of training;
- preparation of the student for practical activities in the direction of training.

2. The place of discipline in the structure of the EP

The discipline "Life safety" refers to the basic part of block B.1.1.03. It is connected logically and meaningfully and methodically with the disciplines: "Introduction to the profession", "Technological entrepreneurship", "Management in high-tech industries".

3. The list of planned learning outcomes for the discipline (module), correlated with the planned results of mastering the educational program.

As a result of mastering the discipline, students form the following competence and the following learning outcomes should be achieved as a stage in the formation of the relevant competence:

Competency code	As a result of mastering the educational program, the student must have	List of planned learning outcomes by discipline
UK-8	- the ability to create and maintain safe living conditions in everyday life and in professional activities to preserve the natural environment, ensure the sustainable development of society, including in the event of a threat and the occurrence of emergencies and military conflicts	IUK-8.1. Analyzes and identifies the factors of harmful influence on the life of the elements of the environment (technical means, technological processes, materials, buildings and structures, natural and social phenomena), as well as dangerous and harmful factors within the framework of the activities carried out IUK-8.2. Understands the importance of maintaining safe working and living conditions, preserving the natural environment to ensure the sustainable development of society, including when there is a threat of dangerous or emergency situations and military conflicts IUK-8.3. Explains the rules of conduct in the event of emergencies of natural and man-made origin and military conflicts, describes ways to participate in recovery activities

4. Structure and content of the discipline.

Part-time education

The total labor intensity of the discipline is 2 credit units, i.e. 72 academic hours (of which 54 hours are independent work of students).

Sections of the discipline "Life Safety" are studied in the third year of undergraduate studies.

Fifth semester:lectures - 8 hours, practical work - 4 hours laboratory work - 6 hours, form of control - test.

The structure and content of the discipline "Life Safety" by terms and types of work are reflected in the Appendix.

The content of the sections of the discipline.

Topic 1. Introduction. Man and technosphere.

Basic concepts and definitions.

Characteristic states of the system "man - habitat": industrial, urban, domestic, natural environment. Human interaction with the environment, the basis of optimal

interaction: comfort, minimization of negative impacts, sustainable development of the system.

Compliance of living conditions with the physiological, physical and mental capabilities of a person. Fundamentals of optimization of habitat parameters (microclimate parameters, illumination, noise, vibration, etc.). Criteria for assessing the impact of discomfort, their significance. Axiom about the potential impact in the system "man – environment". Criteria for assessing the negative impact: the number of injured and dead, reduced life expectancy, material damage and their significance. International cooperation in the field of life safety.

Topic 2. Psychophysiological and ergonomic foundations of safety.

The main psychological causes of mistakes and the creation of dangerous situations. Engineering psychology. Factors affecting the reliability of the actions of operators. Types of labor activity: physical and mental labor, forms of physical and mental labor, creative labor. Classification of working conditions according to the severity and intensity of the labor process. Classification of working conditions according to the factors of the working environment. Ergonomic safety fundamentals. The "man-machine-environment" system. Anthropometric, sensorimotor, energy, biomechanical and psychophysiological compatibility of man and machine. Workplace organization.Mode of work and rest, the main ways to reduce fatigue and monotony.

Topic 3. Identification of harmful and dangerous environmental factors.

Classification of negative factors of natural, anthropogenic and man-made origin. Harmful and dangerous negative factors. Systems of perception and compensation by the human body of harmful environmental factors. Maximum permissible levels of hazardous and harmful factors - the main types and principles of establishment. Parameters, characteristics of the main harmful and dangerous factors of the human environment, the main components of the technosphere and their sources.

Topic 4. Impact on humans of harmful and dangerous environmental factors. Protection of humans and the environment from harmful and dangerous factors of natural, anthropogenic and technogenic origin

The impact of the main negative factors on a person and their maximum permissible levels. Basic principles of protection from dangers. Systems and methods for protecting man and the environment from the main types of dangerous and harmful effects of natural, anthropogenic and man-made origin. Methods of protection against harmful substances, physical fields, information flows, hazards of biological and psychological origin. General characteristics and classification of protective equipment. Methods of control and monitoring of hazardous and harmful factors. Basic principles and stages of control and forecasting. Methods for determining the zones of action of negative factors and their levels.

5. Educational technologies.

The methodology for teaching the discipline "Life Safety" and the implementation of a competency-based approach in the presentation and perception of the material provides for the use of the following active and interactive forms of conducting group, individual, classroom classes in combination with extracurricular work in order to form and develop the professional skills of students:

– preparation for the implementation of laboratory work in the laboratories of the university;

– discussion and defense of abstracts on the discipline;

6. Evaluation tools for current monitoring of progress, intermediate certification based on the results of mastering the discipline and educational and methodological support for students' independent work.

In the learning process, the following assessment forms of independent work of students, assessment tools for monitoring progress and intermediate assessments are used:

- an abstract on one of the topics proposed in the program (individually for each student);

- preparation for the performance of laboratory work and their protection.

Only students who have completed all types of educational work provided for by the work program of the discipline are allowed to intermediate certification.

When performing current control, it is possible to use test material. Samples of control questions and tasks for conducting current control are given in the appendix. When implementing the undergraduate program, the organization has the right to use e-learning and distance learning technologies. All materials are placed in the LMS of the Moscow Poly (https://online.mospolytech.ru/).

When teaching people with disabilities, e-learning and distance learning technologies should provide for the possibility of receiving and transmitting information in forms accessible to them.

6.1. Fund of assessment tools for conducting intermediate certification of students in the discipline (module)

6.1.1. A list of competencies indicating the stages of their formation in the process of mastering the educational program.

As a result of mastering the discipline (module), the following competencies are formed:

Competency code	As a result of mastering the educational program, the student must have
UK-8	- the ability to create and maintain safe living conditions in everyday life and in professional activities to preserve the natural environment, ensure the sustainable development of society, including in the event of a threat and the

	occurrence of emergencies and military conflicts

In the process of mastering the educational program, these competencies, including their individual components, are formed in stages during the development of disciplines (modules), practices by students in accordance with the curriculum and calendar schedule of the educational process.

6.1.2. Description of indicators and criteria for assessing competencies formed on the basis of the results of mastering the discipline (module), description of assessment scales.

An indicator of assessing competence at various stages of its formation is the achievement by students of the planned learning outcomes in the discipline (module).

UK-8 - the ability to create and maintain safe living conditions in everyday life and in professional activities to preserve the natural environment, ensure the sustainable development of society, including in the event of a threat and the occurrence of emergencies and military conflicts				
Index	**Evaluation criteria**			
	2	**3**	**four**	**5**
IUK-8.1. Analyzes and identifies the factors of harmful influence on the life of the elements of the environment (technical means, technological processes, materials, buildings and structures, natural and social phenomena), as well as dangerous and harmful factors in the framework of the activities carried out	The student demonstrates the complete absence or insufficient correspondence of the following knowledge: the basics of independent, correct use of methods of maintaining health in emergency situations.	The student demonstrates incomplete compliance with the following knowledge: the basics of independent, correct use of methods of maintaining health in emergency situations. Significant mistakes are made, lack of knowledge is manifested, for a number of indicators, the student experiences significant difficulties in operating knowledge when transferring it to new situations.	The student demonstrates partial compliance with the following knowledge: the basics of independent, correct use of health preservation methods in emergency situations, but minor errors, inaccuracies, and difficulties in analytical operations are allowed.	The student demonstrates full compliance with the following knowledge: the basics of independent, correct use of methods of maintaining health in emergency situations, freely uses the acquired knowledge.
IUK-8.2. Understands the	The student is unable or	The student demonstrates incomplete complianceapply	The student demonstrates partial compliance with	The student demonstrates full

importance of maintaining safe working and living conditions, preserving the natural environment to ensure the sustainable development of society, including when there is a threat of dangerous or emergency situations and military conflicts	insufficiently able toapply knowledge about the basics of life safety, the nature of dangerous and emergency situations, damaging factors	knowledge about the basics of life safety, the nature of dangerous and emergency situations, damaging factors.Significant mistakes are made, lack of skills is manifested, for a number of indicators, the student experiences significant difficulties in operating with skills when transferring them to new situations.	the following skills:apply knowledge about the basics of life safety, the nature of dangerous and emergency situations, damaging factors. Skills are mastered, but minor errors, inaccuracies, difficulties in analytical operations, transferring skills to new, non-standard situations are allowed.	compliance with the following skills:apply knowledge about the basics of life safety, the nature of dangerous and emergency situations, damaging factors. Freely operates with acquired skills, applies them in situations of increased complexity.
IUK-8.3. Explains the rules of conduct in the event of emergencies of natural and man-made origin and military conflicts, describes ways to participate in recovery activities	The student does not know or does not know enough*basics of behavior and actions in the event of an emergency.*	The student does not fully know the basics of behavior and actions in the event of an emergency, significant mistakes are made, there is a lack of skills in a number of indicators, the student experiences significant difficulties in applying skills in new situations.	The student partially owns the basics of behavior and actions in the event of an emergency. skills are mastered, but minor errors, inaccuracies, difficulties in analytical operations, transferring skills to new, non-standard situations are allowed.	The student fully owns the basics of behavior and actions in the event of an emergency, freely applies the acquired skills in situations of increased complexity.

Scales for assessing the results of intermediate certification and their description:

Form of intermediate attestation: test.

Intermediate attestation of students in the form of a test is carried out based on the results of the implementation of all types of educational work provided for by the curriculum for a given discipline (module), while taking into account the results of current monitoring of progress during the semester. The assessment of the degree of achievement by students of the planned learning outcomes in the discipline (module) is carried out by the teacher conducting classes in the discipline (module) by the method of expert assessment. Based on the results of the intermediate certification for the discipline (module), the grade "passed" or "failed" is given.

Only students who have completed all types of educational work provided for by the work program in the discipline "Life Safety" are allowed to the intermediate certification (performed laboratory work, made an abstract)

Evaluation scale	**Description**

Passed	All types of educational work provided for by the curriculum were completed. The student demonstrates the correspondence of knowledge, skills and abilities given in the tables of indicators, operates with the acquired knowledge, skills, skills, applies them in situations of increased complexity. In this case, minor errors, inaccuracies, difficulties in analytical operations, transferring knowledge and skills to new, non-standard situations can be made.
Not credited	One or more types of educational work provided for by the curriculum have not been completed. The student demonstrates incomplete correspondence of knowledge, skills and abilities given in the tables of indicators, significant errors are made, the lack of knowledge, skills and abilities is manifested in a number of indicators, the student experiences significant difficulties in operating knowledge and skills when transferring them to new situations.

The evaluation funds are presented in annex 2 to the work program.

7. Educational and methodological support of discipline

a) basic literature

1. Life safety: textbook / E.A. Arustamov, A.E. Voloshchenko, N.V. Kosolapova, N.A. Prokopenko; ed. E.A. Arustamov. - 21st ed., revised. and additional - Moscow : Dashkov i K°, 2021. - 446 p. : ill. – (Educational publications for bachelors). – Access mode: by subscription. – URL: http://biblioclub.ru/index.php?page=book&id=496098

b) additional literature:

1. Life safety: study guide / O.M. Zinoviev, B.S. Mastryukov, A.M. Merkulova [i dr.]. - Moscow: MISIS, 2019. - 176 p. - ISBN 978-5-906953-82-7. - Text: electronic // Electronic library system "Lan": [website]. - URL: https://e.lanbook.com/book/116915

2. Life safety: textbook / edited by E. A. Arustamov. - 21st ed. - Moscow: Dashkov i K, 2018. - 446 p. - ISBN 978-5-394-02972-1. - Text: electronic // Electronic library system "Lan": [website]. - URL: https://e.lanbook.com/book/105582

Software and Internet Resources:

Office applications, Microsoft Office 2013 (or lower) -Microsoft Open License - License No. 61984042 Agreement No. 08-05/13 dated 06/03/2013 Transfer and Acceptance Certificate No. 961, Transfer and Acceptance Certificate No. 385

Operating system, Windows 7 (or lower) - Microsoft Open License - License No. 61984214, 61984216, 61984217, 61984219, 61984213, 61984218, 61984215; Agreement No. 08-05/13 dated 06/03/2013 Transfer and Acceptance Certificate No. 961

- http://www.gov.ruServer of state authorities of the Russian Federation.
- http://www.mos.ruOfficial server of the Government of Moscow.

- http://www.garant.ruGUARANTOR Legislation with comments.
- http://www.gks.ruFederal State Statistics Service.
- http://www.rg.ruRussian newspaper.
- http://www.rbc.ruRBC (RosBusinessConsulting).
- http://www.businesspress.ruBusiness press.
- http://uisrussia.msu.ruUniversity Information System of Russia.

eight. Logistics support of discipline.

Audience for lectures and seminars of the general fund. Training tables with benches, classroom board, portable multimedia complex (projector, projection screen, laptop). Teacher's workplace: table, chair.

Office applications, Microsoft Office 2013 (or lower) -Microsoft Open License - License No. 61984042 Agreement No. 08-05/13 dated 06/03/2013 Transfer and Acceptance Certificate No. 961, Transfer and Acceptance Certificate No. 385

Operating system, Windows 7 (or lower) - Microsoft Open License - License No. 61984214, 61984216, 61984217, 61984219, 61984213, 61984218, 61984215; Agreement No. 08-05/13 dated 06/03/2013 Transfer and Acceptance Certificate No. 961

9. Methodical recommendations for independent work of students

The discipline "Life Safety" provides for lectures, laboratory work and independent work. Successful study of the discipline requires active work in laboratory classes and the fulfillment of the teacher's training tasks, familiarization with basic and additional literature.

During the lectures, the teacher sets out and explains the basic, most complex concepts of the topic, as well as the theoretical and practical problems associated with it, gives recommendations for a laboratory lesson, instructions for independent work.

When preparing for laboratory classes, students need to: before the next lesson, review the summary of the material of the previous lecture. In case of difficulties in the perception of the material, one should refer to the main literary sources. If you could not understand the material on your own, then contact the lecturer.

Laboratory studies complete the study of the most important topics of the discipline. They serve to consolidate the studied material, develop skills and abilities, as well as to control the degree of preparedness of students in the discipline being studied by the teacher.

Guidelines for students on the organization of independent work

Independent work of students is aimed at independent study of a separate topic of the academic discipline. Independent work is mandatory for each student, its volume is determined by the curriculum. During independent work, the student interacts with the recommended materials with the participation of the teacher in the form of consultations. To perform independent work, methodological support is provided. The electronic library system (electronic library) of the university provides the possibility of individual access for each student from any point where there is access to the Internet.

10. Methodological recommendations for the teacher

The main requirement for the teaching of the discipline is a creative, problem-dialogue approach, which makes it possible to increase students' interest in the content of the educational material.

The main form of studying and consolidating knowledge in this discipline is lecture and laboratory. The teacher should consistently read a series of lectures to students, during which they should focus on the key points of a specific theoretical material, as well as organize practical classes in such a way as to activate students' thinking, stimulate their independent extraction of the necessary information from various sources, a comparative analysis of solution methods, comparison of the obtained results, formulation and argumentation of one's own views on many controversial issues.

Lectures form the basis of training sessions in the discipline. In the process of teaching students, various types of training sessions (classroom and extracurricular) are used: lectures, seminars, laboratory work, consultations, etc. At the first lesson in this academic discipline, it is necessary to familiarize students with the order of its study, to reveal the place and role of the discipline in the system of sciences, its practical significance, to bring the requirements of the department to the students, to answer questions.

In preparation for lectures on the course "Life safety» it is necessary to think over the plan for its conduct, the content of the introductory, main and final parts of the lecture, to get acquainted with the latest educational and methodological literature, publications of the periodical press on the topic of the lecture, to determine the means of logistical support for the lecture and the procedure for their use during the lecture. Clarify the plan for conducting a practical lesson on the topic of the lecture.

During the lecture, the teacher should name the topic, educational questions, familiarize students with the list of basic and additional literature on the topic of the lesson.

In the introductory part of the lecture, justify the place and role of the topic under study in the academic discipline, reveal its practical significance. If not the first lecture is read, then it is necessary to link its topic with the previous one, without violating the logic of the presentation of the educational material. The lecture should begin only with a clear indication of its nature, topic and the range of those issues that will be considered in its course.

In the main part of the lecture, the content of educational issues should be disclosed, students' attention should be focused on the main categories, phenomena and processes, and the features of their course. To reveal the essence and content of various points of view and scientific approaches to the explanation of certain phenomena and processes. It is necessary to substantiate one's own position on controversial theoretical issues. Give examples. Ask rhetorical questions in the course of the presentation of the lecture material and give answers to them yourself. This contributes to the activation of the mental activity of students, increasing their attention and interest in the material of

the lecture, its content. The teacher should guide the work of students in taking notes of lecture material, emphasizing the need to reflect the main provisions of the topic under study in the notes, emphasizing the categorical apparatus.

In the final part of the lecture, it is necessary to formulate general conclusions on the topic, revealing the content of all the questions posed in the lecture. Announce the plan of the next laboratory lesson, give brief recommendations on preparing students for laboratory work.

The purpose of laboratory classes is to provide control over the assimilation of educational material by students, the expansion and deepening of the knowledge gained by them in lectures and in the course of independent work. Increasing the effectiveness of classes is achieved by creating a creative environment that encourages students to express their own views and opinions on the issues under discussion, the desire of students to work at the blackboard when solving problems.

After each lecture and laboratory session, make an appropriate entry in the student attendance registers, find out from the head of the study groups the reasons for the absence of students in the classroom. Conduct group and individual consultations of students on issues that arise for students in the course of their preparation for the current and intermediate certification in the academic discipline, recommend educational and other materials, as well as reference literature.

Guidelines for laboratory work

To perform the work, students are given the necessary methodological instructions and, if necessary, additional reference and regulatory materials, technical documentation for the devices.

Upon completion of the experimental part of the work, students formulate conclusions and recommendations based on the results of the measurements and studies, find oral answers to control questions on this topic and, as soon as they are ready, defend the work in front of the teacher as part of their team at the end of the four-hour lesson.

For part-time education, it is possible to perform work within two-hour classes on reduced tasks for measurements and research. Assignments for the study of theoretical information on the work performed, students of correspondence courses receive during the installation session. The experimental and computational parts are performed by distance learning students during review classes in the test session.

General safety requirements

Students are allowed to perform laboratory work only after they have been instructed on labor protection at the workplace of the laboratory.

The student must know the location in the laboratory of fire extinguishing equipment, electrical switchboard, places for switching on (off) electrical equipment, a first-aid kit and personal protective equipment.

Students are responsible for violation of labor protection rules.

Safety requirements before starting work

Students who have been instructed in labor protection and previously prepared for work, familiarized with its content, are allowed to perform laboratory work.

Before starting work, it is necessary to remove foreign objects and devices not used in this work from the workplace.

Check the freedom of access to the switchboard (packet switch), fire extinguishing equipment, the availability and serviceability of personal protective equipment.

Do not clutter up the workplace with unnecessary items (bags, folders, packages, etc.).

Safety requirements during work

You should only do the work that is provided for by the task of the teacher. During the execution of work, the following basic rules must be observed.

1. Any work in the laboratory should be done accurately, accurately, without haste.

2. Do not leave unattended operating installations, switched on electrical measuring and other devices.

3. Do not use faulty devices or devices with faults that cause doubts.

4. Faulty or unnecessary devices should be removed from the workplace.

Safety requirements in emergency situations

Any malfunction of the equipment or deviations from the normal course of work should be reported to the teacher immediately.

In case of ignition of combustible substances, it is necessary to use a fire extinguisher, or, if possible, cover the fire with sand; de-energize the laboratory using a package switch; immediately inform the teacher about the incident.In case of an accident (any injury), provide assistance to the victim and inform the teacher.

Safety requirements at the end of work

Switch off the power supply of all devices. Tidy up the workplace. Used materials and measuring instruments should be placed in the designated place (as directed by the teacher).

The work program was compiled on the basis of the Federal State Educational Standard of Higher Education in the direction of training bachelors on March 38, 02 "Management", approved by order of the Ministry of Education and Science of the Russian Federation of August 12, 2020 No. 970 (Registered in the Ministry of Justice of Russia on August 25, 2020 No. 59449).

The program was made by:

Associate Professor, Ph.D. /Kalpina N.Yu./

The program was approved at a meeting of the department "Environmental safety of technical systems" "___" August 2022, protocol No. 1
Department head
professor, d.t.s. /M.V.Grafkina/

Application

The structure and content of the discipline "Life Safety" in the direction of training 38.03.02 "Management" educational program "Business Process Management"(part-time form)

No. n/n	Chapter	Semester	A week semester	Types of educational work, including independent student work, and labor intensity in hours					Types of independent work students		Forms of attestation	
				L	F/N	Lab	SRS	DAC	T	abstract	E	Z
one	Introduction. Man and technosphere.	one		2	2	-	fourteen			+		
2	Psychophysiological and ergonomic bases of safety.	one		2		2	fourteen			+		
3	Identification of harmful and dangerous environmental factors.	one		2	2	2	13			+		
four	Impact on humans of harmful and dangerous environmental factors. Protection of humans and the environment from harmful and dangerous factors of natural, anthropogenic and technogenic origin	one		2		2	13			+		
	Appraisal Form	one								one		Z
	Total hours per discipline in the third semester			eight	four	6	54					

Annex to

work program

MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION

FEDERAL STATE AUTONOMOUS EDUCATIONAL INSTITUTION OF HIGHER EDUCATION

"MOSCOW POLYTECHNIC UNIVERSITY"

(MOSCOW POLYTECH)

Area of study: 38.03.02 Management

EP (Educational Programme): Business Process Management

Form of education: full-time, part-time,

Department: Ecological safety of technical systems

VALUATION FUND

BY DISCIPLINE

Life safety

Composition: 1. Passport of the fund of appraisal funds

2. Description of assessment tools: questions for the test, topics of abstracts, topics of laboratory work

Compiled by:

Kalpina N.Yu.

Moscow, 2022

Table 1

INDICATOR OF THE LEVEL OF FORMATION OF COMPETENCES

Life safety					
GEF VO 38.03.02 "Management"					
In the process of mastering this discipline, the student forms and demonstrates the following **general cultural competencies**:					
COMPETENCES		**List of components**	**Competence formation technology**	**Assessment Tool Form****	**Degrees of levels of development of competencies**
INDEX	**FORMULATION**				

UK-8	- the ability to create and maintain safe living conditions in everyday life and in professional activities to preserve the natural environment, ensure the sustainable development of society, including in the event of a threat and the occurrence of emergencies and military conflicts	IUK-8.1. Analyzes and identifies the factors of harmful influence on the life of the elements of the environment (technical means, technological processes, materials, buildings and structures, natural and social phenomena), as well as dangerous and harmful factors in the framework of the activities carried out IUK-8.2. Understands the importance of maintaining safe working and living conditions, preserving the natural environment to ensure the sustainable development of society, including when there is a threat of dangerous or emergency situations and military conflicts IUK-8.3. Explains the rules of conduct in the event of emergencies of natural and man-made origin and military conflicts, describes ways to participate in recovery activities	lecture, laboratory work, independent work	R, credit	**A basic level of:** reproduction of acquired knowledge in the course of current control **Advanced level:** practical application of the acquired knowledge, in the process of preparing for laboratory work, for seminars

Annex 2
to work program

List of assessment tools for the discipline Life safety

OS number	Name of the evaluation tool	Brief description of the evaluation tool	Presentation of the evaluation tool in the FOS
one	abstract (R)	The product of the student's independent work, which is a summary in writing of the results of the theoretical analysis of a certain scientific (educational and research) topic, where the author reveals the essence of the problem under study, gives different points of view, as well as his own views on it.	Essay topics
2	credit	The final form of knowledge assessment. In higher education institutions are held during the session.	Questions for the test

Questions for the test in the discipline "Life safety"
formation of competence UK-8

1. Working environment and working conditions.
2. Dangerous and harmful production factors. Classification.
3. Noise. The main characteristics of noise.
4. Industrial injuries, the main causes of industrial injuries.
5. Noise classification (GOST 12.1.003). Effect of noise on the human body.
6. Air pollution in the working area of the production facility. The influence of harmful substances on the human body.
7. Noise regulation.
8. Rationing of the content of harmful substances in the air of the production room. Classification of harmful substances.
9. Methods and means of protection against noise.
10. Microclimate parameters and their influence on the human body. Normalization of microclimate parameters.
11. Methods of sound insulation and sound absorption.
12. Heat exchange of man with the environment.
13. Basic parameters of vibrations.
14. Methods of protection against sources of radiant heat
15. Types of electrical networks. Analysis of electric shock in electrical networks.
16. Definition and types of ventilation. Requirements for the ventilation system.
17. Categories of works.
18. Vibration protection methods.
19. Subject, purpose and tasks of life safety.
20. Classification of harmful substances.
21. Rationing of constant and intermittent noise.
22. Methods of protection against electric shock.
23. Types of natural ventilation. essence of aeration. Aeration calculation.
24. Protective ground. Types of grounding devices. Rationing of the resistance of grounding devices in electrical networks
25. Types of mechanical ventilation. Scheme.
26. Categories of enterprises by fire hazard. Fire resistance and fire resistance of structures.
27. Methods for calculating the amount of air in general ventilation.
28. combustion process. Factors necessary for the combustion process.
29. Tasks and classification of industrial lighting. Requirements for the lighting system.
30. Types and indicators of emergency situations.
31. Lighting characteristics of lighting.
32. Protective nulling. Safety shutdown.
33. Methods for calculating artificial lighting.
34. The main causes of human injury by electric current at work.

35. System of labor safety standards.
36. Classification of industrial premises according to the degree of danger of electric shock.
37. Protection against electromagnetic radiation.
38. Factors affecting the outcome of human electric shock. Help a person who is under the influence of current.
39. Protection against infrared and ultraviolet radiation.
40. Types of effects of electric current on the human body. Types of electrical injuries.
41. Methods for the analysis of industrial injuries.
42. Methods of vibration damping and vibration isolation.
43. Classification of hazardous and harmful production factors.
44. The effect of vibration on the human body. Technical and hygienic regulation of vibration
45. Physical characteristics of vibration.
46. Axioms about the potential danger of the technosphere.
47. Definition of vibration. Sources and causes of vibration. Vibration classification
48. Basic concepts and risk classification. Acceptable risk.
49. Sources of infra- and ultrasound. Protection methods.
50. Rationing of artificial and natural lighting.
51. Types of electrical networks. Analysis of electric shock in electrical networks.

Topics of essays on the discipline "Life safety"

(formation of competence UK-8)

1. Subject, purpose and tasks of life safety.
2. Axioms about the potential danger of the technosphere.
3. Basic concepts and risk classification. Acceptable risk.
4. Principles, methods and means of ensuring security.
5. Protection when working with pressure vessels.
6. Working environment and working conditions. Dangerous and harmful production factors. Classification.
7. Industrial injuries, the main causes of industrial injuries.
8. Investigation and accounting of accidents. Quantitative characteristics of traumatism.
9. Rationing of the content of harmful substances in the air of the production room. Classification of harmful substances.
10. Heat exchange of man with the environment.
11. Methods of protection from sources of radiant heat.

12. Definition and types of ventilation. Requirements for the ventilation system.
13. Types of natural ventilation. essence of aeration. Aeration calculation.
14. Types of mechanical ventilation. Scheme.
15. local ventilation.
16. Types of lamps. Their characteristics and functions.
17. Methods for calculating artificial lighting.
18. Types of natural industrial lighting. Methods of calculation.
19. Noise. The main characteristics of noise.
20. Noise classification (GOST 12.1.003). Effect of noise on the human body.
21. Noise regulation.
22. Methods and means of protection against noise.
23. Methods of sound insulation and sound absorption.
24. Sources of infra- and ultrasound. Protection methods.
25. Air pollution in the working area of the production facility.
26. Characteristics of the main forms of human activity. Reliability of a person as a link in a complex technical system.
27. The influence of harmful substances on the human body.
28. Microclimate parameters and their influence on the human body. Normalization of microclimate parameters.
29. Methods for calculating the amount of air in general ventilation.
30. Determination of air flow during aeration. Advantages and disadvantages of aeration.
31. Heating and air conditioning.
32. Tasks and classification of industrial lighting. Requirements for the lighting system.
33. Lighting characteristics of lighting. Regulation of artificial lighting.
34. Definition of vibration. Sources and causes of vibration. Vibration classification (GOST 12.1.012).
35. Physical characteristics of vibration.
36. The effect of vibration on the human body. Technical and hygienic regulation of vibration (GOST 12.1.012).
37. Vibration protection methods.
38. Methods of vibration damping and vibration isolation.

39. Types of effects of electric current on the human body. Types of electrical injuries.
40. Factors affecting the outcome of human electric shock. Help a person who is under the influence of current.
41. The main causes of human injury by electric current at work. Classification of industrial premises according to the degree of danger of electric shock.
42. Phenomena when electric current flows into the ground. Distribution of potential on the surface of the earth.
43. Touch voltage. Step tension.
44. Types of electrical networks. Analysis of electric shock in electrical networks.
45. Methods of protection against electric shock.
46. Protective ground. Types of grounding devices. Rationing of the resistance of grounding devices in electrical networks.
47. Protective nulling. Safety shutdown.
48. Protection against infrared and ultraviolet radiation.
49. Protection when working with lasers.
50. Protection against electromagnetic radiation.
51. Fire prevention. Measures taken to prevent fire in enterprises.
52. combustion process. Factors necessary for the combustion process.
53. Categories of enterprises by fire hazard. Fire resistance and fire resistance of structures.
54. Fire-fighting measures that are carried out during the design of an industrial facility.
55. Fire extinguishing agents. Fire extinguishers.
56. Fire alarm.
57. Types and indicators of emergency situations.
58. General information about the means of destruction in military operations.
59. Stability of the functioning of economic objects in emergency situations.
60. The main ways to protect the population in emergency situations.
61. Elimination of the consequences of emergency situations.
62. Life safety management. State and public supervision of the state of labor protection.
63. Organization of labor safety at work.

64. System of labor safety standards.
65. Organization of attestation of workplaces in terms of working conditions.
66. The cost of protective measures for labor safety.

abstract- a product of the student's independent work, which is a summary in writing of the results of the theoretical analysis of a certain scientific (educational and research) topic, where the author reveals the essence of the problem under study, gives different points of view, as well as his own views on it.

Criteria for evaluation:

- the grade "passed" is given to the student if the topic of the abstract is generally disclosed, the current legal acts (UK-8 - "know") are used in the work, there is an analysis of different points of view on the issue under consideration and / or one's own position is logically stated (UK -8 - "be able"); the basic requirements for external design are met. The student has the skills to search, analyze and use the normative legal acts regulating relations in the field of innovation activity (UK-8 - “own”)

- the mark "not passed" is given to the student if the topic of the abstract is not disclosed, during the defense a significant misunderstanding of the problem is revealed. The student demonstrates knowledge, skills, skills below the threshold level in accordance with the criteria for scoring the formation of competencies given in the table in the context of the “know / be able / possess” descriptors.

In the case of using a point-rating system, the following evaluation criteria are applied:

1. **Independent nature of work**– 2 points
2. **Knowledge and understanding of theoretical material - 4 points(UK-8 - "Know")**:

- defines the concepts under consideration clearly and completely, giving appropriate examples;
- the concepts used strictly correspond to the topic;
- Uses up-to-date normative-legal acts.

3. Analysis and evaluation of information - 2 points (UK-8 - "be able", "own"):

- the range of information space used (the student uses a large number of different sources of information);
- skillfully uses the techniques of comparison and generalization to analyze the relationship between concepts and phenomena;
- is able to explain alternative views on the problem under consideration and come to a balanced conclusion;

4. Way of presenting the material - 1 point:

the presence of a logically clear and well-structured plan corresponding to the formulated goal and tasks;

- clarity and clarity of presentation;
- logic of evidence structuring;
- the proposed theses are accompanied by competent argumentation;

5. Design of work - 1 point:

- the work meets the basic requirements for the design and use of citations;

- observance of lexical, phraseological, grammatical and stylistic norms of the Russian literary language;

- design of the text in full compliance with the rules of Russian spelling and punctuation;

- compliance with formal requirements.

6. Timeliness of work

– 2 points are deducted for submitting an abstract after the date indicated in the schedule.

The maximum score for an essay is 10 points.

Topics of laboratory work on the discipline "Life safety"

Formation of competence UK-8

Laboratory work 1. Protection from industrial vibrations.

Basic concepts and definitions. Physical characteristics of vibrations. Causes and sources of vibrations. The effect of vibrations on the human body. Hygienic and technical regulation of vibrations (GOST 12.2.012). Methods and means of protection against vibration (influence on the source on the excitation source, vibration damping, dynamic vibration damping, passive and active vibration isolation). Vibration protection equipment. Measurement of vibration parameters.

Laboratory work 2. Protection from industrial noise, infra- and ultrasound.

Basic concepts and definitions. Physical characteristics of noise. Noise sources and their classification (GOST 121.1.029). Effects of noise on the human body. Graph of human perception of acoustic sounds. Regulation of noise at workplaces (GOST 12.1.003). Methods and means of protection against industrial noise (sound insulation and sound absorption, noise suppressors). Methods and means of protection against infra- and ultrasound. Noise characteristics of machines. Acoustic calculation.

Laboratory work 3. Protection from EM fields and infrared radiation, laser radiation, ionizing radiation.

The impact of electromagnetic radiation on humans. Rationing, basic characteristics, protection against EM fields, IR radiation, laser and ionizing radiation.

Laboratory work 4. Fundamentals of electrical safety.

Basic concepts and definitions. Factors affecting the outcome of electric shock. The action of electric current on the human body. Classification of premises for electrical safety. The phenomenon of current flowing into the ground. Touch voltage. Step tension.

Laboratory work 5.Analysis of electrical networks and electric shock in various networks.

Protective grounding, grounding, protective shutdown. Static electricity, its effect on a person. Lightning protection.

Laboratory work 6. Safety of industrial equipment. Ergonomic requirements for technology.

Accounting for safety requirements in the preparation of production. Protective, warning means, blocking and signaling devices, remote control systems. Operational safety of automated and robotic production. Safety in emergency situations. Tests, verification of compliance of equipment with safety requirements. Surveys and testing of compressors, cranes and hoists, gas supply systems, heating, ventilation, pressure systems. ergonomic requirements. Increased safety through functional diagnostics of machines and systems.

Laboratory work 7. Fire safety.

Basic concepts and definitions. Dangerous and harmful factors of fires and explosions. The reasons for their occurrence. Fire prevention. Fire forecasting. Analysis of the conditions for the cessation of combustion. Fire extinguishers. Their characteristics and scope. Means of notification and signaling about the fire.

Criteria for evaluation of laboratory work

"5" (excellent): all tasks of practical (laboratory) work were completed, the student answered all control questions clearly and without errors.

"4" (good): all tasks of practical (laboratory) work were completed; the student answered all control questions with comments.

"3" (satisfactory) "3" (satisfactory): all tasks of practical (laboratory) work were completed with comments; the student answered all control questions with comments.

"2" (not counted): the student did not complete or performed incorrectly the tasks of practical (laboratory) work; the student answered the control questions with errors or did not answer the control questions.