

MINISTRY OF SCIENCES AND HIGHER EDUCATION OF THE REPUBLIC KAZAKHSTAN

M.O. AUEZOV SOUTH KAZAKHSTAN UNIVERSITY



Chairman of the Board-Rector
D.Zh. Ahmed-Zaki
2026.

EDUCATION PROGRAMME

8D11210 - Life Safety and Environmental Protection

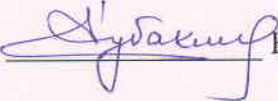
Registration Number	8D11200001
Code and Classification of Education	8D11 Services
Code and Classification of Areas of Training	8D112 - Hygiene and labor protection at work
Group of educational programs (EP)	D146 - Sanitary and preventive measures
Type of EP	<i>acting</i>
ISCE level	8
NQF level	8
IQF level	8
Language learning	English, Russian, Kazakh
The complexity of EP	180 credits
Distinctive features of EP	-
Partner University (JEP) -	-
University partner (DDEP) -	-

Shymkent, 2026

Compilers:

Name	Position	Signature
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The EP was considered at a meeting of the Academic Quality Committee of the «Architecture, construction and transport» faculty or the Higher School, Minutes # 3 «09» 01 2026.

Chairman of the Committee  F. Aubakirova

The EP was considered and recommended for approval at Educational-methodical meeting of M. Auezov SKU
Minutes # 9 «24» 02 2026.

Chairman of the EMM  E. Imangaliyev

The EP was approved by the decision of the Academic Council of the University
Minutes # 14 «26» 03 2026.

The educational program has been updated taking into account the new model of inclusive education and agreed with the City department of employment and social protection.

 K. Kaldykarayev

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1 CONCEPT EP

Mission of the University	We are focused on generating new competencies, training a leader who translates research thinking and culture.
University Values	– Openness - open to change, innovation and cooperation. – Creativity - generates ideas, develops them and turns them into values – Academic freedom - free to choose, develop and act. – Partnership - creates trust and support in a relationship where everyone wins. – Social responsibility - ready to fulfill obligations, make decisions and be responsible for their results.
Graduate Model	– Deep subject knowledge, their application and continuous expansion in professional activity – Information and digital literacy and mobility – Research skills, creativity and emotional intelligence – Entrepreneurship, independence and responsibility for their activities and well-being – Global and national citizenship, tolerance to cultures and languages
Uniqueness of the EP	the program was developed in accordance with the Atlas of New Professions and Competencies, and is aimed at training competent specialists for transport and logistics and scientific and pedagogical structures who are able to organize and manage the activities of a structural enterprise, independently determine the goals of professional activity, choose and justify methods and means to achieve them.
Academic Integrity and Ethics Policy	The University has taken measures to maintain academic integrity and academic freedom, protection from any kind of intolerance and discrimination: • Rules of academic integrity (Order No. 212-ҢҚ dated 10.10.2022); • Anti-Corruption Standard (Order No. 221-ҢҚ dated 07.12.2021). • Code of Ethics (order No. 212-ҢҚ dated 10.10.2022). • Anti-Corruption Policy of the NJSC “M. Auezov South Kazakhstan University.” (order No. 144 нқ dated 07.14.2022).
Regulatory and legal framework for the development of EP	1. Law of the Republic of Kazakhstan "On Education" No. 319-III dated July 27, 2007; 2. Standard rules of activity of educational organizations implementing educational programs of higher and (or) postgraduate education, approved by Order of the Ministry of Education and Science of the Republic of Kazakhstan dated October 30, 2018 No. 595 3. State obligatory standards of higher and postgraduate education, approved by order of the Ministry of Education and Science of the Republic of

Kazakhstan dated July 20.2022 No. 2;

4. Rules for the organization of the educational process on credit technology of training, approved by the Order of the Ministry of Education and Science of the Republic of Kazakhstan dated April 20, 2011 No. 152;

5. Qualification directory of positions of managers, specialists and other employees, approved by the Order of the Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan on December 30, 2020 No. 553.

6. Guidelines for the use of ECTS.

7. Guidelines for the development of educational programs of higher and postgraduate education, Appendix 1 to the order of the Director of the Central Research Institute No. 45 o/d dated June 30, 2021.

Organization of the educational process

- Implementation of the principles of the Bologna Process
- Student-centered learning
- Availability
- Inclusivity

Quality assurance of EP

- Internal quality assurance system
- Involvement of stakeholders in the development of the EP and its evaluation
- Systematic monitoring
- Updating the content (updating)

Requirements for applicants

They are established according to the Standard Rules of admission to training in educational organizations implementing educational programs of higher and postgraduate education Order of the Ministry of Education and Science of the Republic of Kazakhstan No. 600 dated 31.10.2018

Conditions for the implementation of educational programs (EP) for persons with disabilities and special educational needs(SSN)

For students with SEN (special educational needs) and persons with disabilities (PSI), tactile PVC tiles, specially equipped toilets, a mnemonic diagram, and shower bars have been installed in educational buildings and student dormitories. Special parking spaces have been created. Crawler lift installed. There are desks for people with limited mobility (PLM), signs indicating the direction of movement, ramps. In the educational buildings (main building, building No. 8) there are 2 rooms with six working places adapted for users with disorders of the musculoskeletal system (DMS).For visually impaired users, the SARA™ CE Machine (2 pcs.) is available for scanning and reading books. The library website is adapted for the visually impaired. There is a special NVDA audio program with a service. The JIC website <http://lib.ukgu.kz/> is open 24/7.

An individual differentiated approach is provided for all types of classes and in the organization of the educational process.

2. Passport of the educational program

Purpose of the EP	Preparation of PhD doctors for the system of higher and postgraduate education and the research sector, who have professional competencies in the field of life safety and environmental protection.
Tasks of the EP	- the formation of socially responsible behavior in society, an understanding of the significance of professional ethical norms and the adherence to these norms; - providing basic training that allows you to continue learning throughout life, to successfully adapt to changing conditions throughout their professional careers; - to provide graduates with the level of knowledge and skills that allows designing and constructing various means, methods and methods of industrial protection of a person from harmful and dangerous factors, its subsystems and elements using computer modeling tools, advanced experience in developing competitive products, with a feasibility study design solutions; - to provide graduates with the level of knowledge and skills that allows them to be in demand in the field of their professional activities in the highest positions in domestic and foreign enterprises; - creation of conditions for intellectual, physical, spiritual, aesthetic development to ensure the possibility of their employment; - creating conditions for the formation of in-demand knowledge and skills, a conscious attitude towards improving the well-being of the population and protecting the planet in the context of the sustainable development goal
Harmonization of EP	• The educational program is harmonized with the 8th level of the National Qualifications Framework of the Republic of Kazakhstan, • with Dublin descriptors, • the 3rd cycle of the Qualification Framework of the European Higher Education Area. (A Framework for Qualification of the European Higher Education Area), • also with an 8th level of the European Qualification Framework for Lifelong Education (The European Qualification Framework for Lifelong Learning).
Connection of the EP with the professional sphere	International standard ISO 45001:2018 «Management systems in the field of occupational safety and labor protection. Requirements and recommendations for use».
Name of the degree awarded	Persons who have mastered the PhD program and defended their doctoral dissertation, with a positive decision of the dissertation councils of the OVPO with a special status or the Committee for Quality Assurance in the Field of Education and Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan, are awarded the degree of Doctor of PhD in the OP 8D11210 – "Life safety and environmental protection"
List of qualifications and positions	- head of the labor protection department, - head of the fire safety department, - the head of the middle level of the emergency squad, - teacher of higher educational institutions; - Head of research and design and survey bureaus and institutes.
Field of professional activity	- life safety and environmental protection, - the science - education
Objects of professional activity	Military-industrial complex, production, state bodies in the field of life safety, research institutes, specialized secondary and higher educational

	institutions.
Subjects of professional activity	The subjects of the doctoral student's professional activity are engineering structures, equipment that ensures life safety, protection in emergency situations (ES), the educational process.
Types of professional activity	- independent research work; - management of a group of researchers; - pedagogical work in high school; - management of undergraduates and doctoral Doctors in the direction of the specialty; - leading work in research organizations; - leading work in high school
Learning outcomes	LO 1 Apply information technology in the implementation of experimental research and their results, the formation of management decisions of information processes and be able to work with information in global computer networks. LO 2 To use elements of artificial intelligence in the analysis, assessment of environmental, economic, and social consequences of industrial waste and the application of disposal methods that minimize their negative impact on the environment. LO 3 Manage the organization of the safety of the operation of equipment and technological processes to protect the population from the dangers of fire, industrial, energy and environmental safety. LO 4 Make scientific contributions with your own original research in the field of life safety and the environment, with the publication of the results at the national and international levels, applying the principles of academic writing and scientific ethics. LO 5 Organize and take part in the introduction of pedagogical innovations into the educational process in accordance with global trends, taking into account the results of research and development work in the field of life safety and environmental protection. LO 6 Assess and analyze the impact of hazardous and harmful production factors on human health, proposing measures to reduce risk and improve working conditions.

3. Competencies of a graduate of the EP

General competencies (SOFT SKILLS). Behavioral skills and personal qualities	
GC 1. Competence in managing one's literacy	GC1.1. The ability to self-study, self-develop and constantly update their knowledge within the chosen trajectory and in an interdisciplinary environment. GC1.2. The ability to express thoughts, feelings, facts and opinions in the professional sphere. GC1.3. The ability to mobility in the modern world and critical thinking.
GC 2. Language competence	GC2.1. Ability to build communication programs in the state, russian and foreign languages. GC 2.2. The ability to interpersonal social and professional communication in the conditions of intercultural communication.
GC 3. Mathematical competence and competence in the field of science	GC 3.1. The ability and willingness to apply the educational potential, experience and personal qualities acquired during the study of mathematical, natural science, technical disciplines at the university to solve professional problems.
GC 4. Digital competence, technological literacy	GC4.1. The ability to demonstrate and develop information literacy through the mastery and use of modern information and communication technologies in all spheres of your life and professional activity. GC4.2. The ability to use various types of information and communication technologies: Internet resources, cloud and mobile services for the search, storage, protection and dissemination of information.
GC 5. Personal, social and educational competencies	GC5.1. The ability to physical self-improvement and orientation to a healthy life to ensure full-fledged social and professional activities through methods and means of physical culture. GC 5.2. The ability to socio-cultural development based on the manifestation of citizenship and morality. GC5.3 The ability to build a personal educational trajectory throughout life for self-development, career growth and professional success. GC 5.4. The ability to successfully interact in a variety of socio-cultural contexts during study, at work, at home and at leisure.
GC 6. Entrepreneurial competence	GC6.1. The ability to be creative and enterprising in different environments. GC 6.2. Ability to work in the mode of uncertainty and rapid change of task conditions, make decisions, allocate resources and manage your time. GC 6.3. Ability to work with consumer requests.
GC 7. Cultural awareness and self-expression	GC7.1. The ability to show ideological, civic and moral positions. GC7.2. The ability to be tolerant of the traditions and culture of other peoples of the world, to possess high spiritual qualities.
Professional competencies (HARDSKILLS). Theoretical knowledge and practical skills specific to this field. Ability to demonstrate professional values: professionalism; innovativeness; creativity; meritocracy; integrity	

3.1 Matrix of correlation of learning outcomes on the EP as a whole with the competencies being formed

	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6
GC 1	+	+		+	+	
GC 2	+	+	+			
GC 3		+		+	+	
GC 4			+		+	+
GC 5	+	+		+		
GC 6	+		+	+		+
GC 7		+		+	+	

4. Matrix of the influence of disciplines on the formation of learning outcomes and information about labor intensity

№	Module name	Cycle	Component	Name of discipline	Short description of discipline	Credits	The formed educational outcomes (codes)					
							LO 1	LO 2	LO 3	LO 4	LO 5	LO 6
1	Scientific basis and research methods in life safety	BD	UC	Academic writing	The goal is the formation of professional competence and the expansion of communicative competence associated with analytical textual activity; the formation of linguistic and pragmatic thinking skills in doctoral students, the ability to analyze the expressive units of the language and competently select the desired unit depending on the goals and conditions of communication. Contents: Rules for scientific citation. Requirements for a bibliographic description. Features of the genres of academic writing (AP): essay, abstract, abstract, review; AP stages: planning, writing, editing, reviewing. The structure of the scientific manuscript: title, abstract, keywords, introduction, results and discussion, conclusion, links.	3				v		
2		BD	UC	Research methods	The goal is to form doctoral students' creative ability to choose and apply modern and innovative theoretical and experimental research methods that ensure fundamental and applied scientific research at a high level. Contents: Scientific research and its specificity in modern science. Methodology and methodology of scientific research. Modern means, methods and techniques of scientific research in oil refining, computer programs for checking the comparability of virtual data and the results of analytical and computer calculations. Stages of scientific research. Research program and design. Design of a dissertation research, its structure. Conducting and processing an experiment based on the use of elements of artificial intelligence to optimize the processing of the obtained data and identify the most significant variables	4				v	v	

					Planning, preparation and sequence of writing an article.							
3		BD	EC	Information systems for assessing and forecasting emergency situations at work	Purpose: formation of skills in the analysis and application of information systems aimed at ensuring safety and protecting the environment. Content: Consideration of the principles of preventive risk management and minimization of negative impact on the environment. Study of methodological approaches to conducting research in the field of information systems for ensuring life safety and environmental protection. Research and application of modern information technologies such as artificial intelligence, machine learning, Internet of things and big data to improve the efficiency of information systems for security and environmental protection.	6	v					
4		BD	EC	Systems of information support of the state of life safety and environmental protection	Purpose: the formation of deep research skills to improve and apply information systems capable of assessing and predicting emergency situations at industrial enterprises. Content: Analysis of existing information systems and methods used to assess and predict risks in production. Consideration of the principles of preventive risk and safety management in industrial enterprises. Development of new methods and algorithms for effective analysis and visualization of data in information systems. Practical application of the developed information systems in production and assessment of their impact on improving security and reducing risks.		v					
5				Pedagogical practice	Purpose: the formation of professional and personal competencies necessary for the organization of the educational process in higher education. Contents: Global trends in the development of education and the modernization of higher and postgraduate education in the Republic of Kazakhstan; modern pedagogical theories and educational technologies for	10				v		

					teaching and training at universities, taking into account inclusive education; innovative forms of organization and management of the educational process in higher education; psychological foundations of teaching and training future specialists.							
6		PD	UC	Waste of Kazakhstan and problems of their disposal	Objective: to deepen knowledge in the field of industrial waste, focused on various industries in Kazakhstan, and explore new methods of environmental engineering. Contents: Analysis of legislation and regulations governing waste management in Kazakhstan. Study of problems associated with waste in various sectors of the economy and regions of Kazakhstan. Development of new innovative approaches and technologies for efficient waste disposal, taking into account the peculiarities of Kazakhstan. Development of strategies and solutions for sustainable development and transition to a green economy in the context of waste management.	6		v				
7	Actual problems of life safety and labor protection	PD	EC	Modern aspects of diagnostics of buildings and structures for real seismic resistance and sustainability	Purpose: formation of deep research skills and development of new approaches, methods and technologies for diagnostics of buildings and structures in order to assess their actual seismic resistance and stability. Contents: Analysis of modern standards and regulations governing the design, construction and diagnostics of buildings, taking into account seismic activity. Assessment of the influence of various factors, such as soil conditions, on the seismic stability of buildings and structures. Identification of vulnerable areas and structural elements that may be subject to damage or destruction in the event of a seismic impact.	6			v			
8		PD	EC	Methods for assessing the impact of hazardous	Purpose: deepening knowledge in the field of assessment and analysis of the impact of hazardous and harmful production factors on human health and well-being. Content: Consideration of advanced methods and							v

				and harmful production factors on humans	approaches to risk assessment and analysis of the impact of production factors on humans. Assessment of the magnitude and duration of the impact of production factors on the health of workers using appropriate measures and indicators. A study of the influence of various factors, such as the individual characteristics of workers and the nature of the working environment, on the effectiveness of risk control and management measures.							
11				Research Practice	Purpose: to master the latest theoretical, methodological and technological achievements of domestic and foreign science, as well as to consolidate practical skills, apply modern methods of scientific research, process and interpret experimental data in a dissertation research. Contents: Introduction. Conducting an analytical review of literary sources. Conducting experimental research work. Research results for optimizing the regime and design parameters of the object under study. Information technologies and computer programs in the processing of research results. Modern methods of scientific research. Methods of analysis and processing of experimental and empirical data.	10				v		
12	Module of Scientific - research work and Final Certification			Research work of a doctoral student, including passing an internship and completing a doctoral dissertation	Purpose: to demonstrate a systematic understanding of the field of study, mastering the skills and research methods used in the field of mechanical engineering. Contents: Choice of the thesis topic. Proceedings of domestic and foreign scientists. Participation in conferences, projects of young scientists. Writing articles. Reference - bibliographic system. Modern IT technologies and online platforms. Domestic and foreign electronic database. Scientific internship. Empirical basis of the study. Dissertation. National Center for State Scientific and Technical Expertise.	123				v	v	

13				Writing and defending a doctoral thesis	Writing and defending a doctoral dissertation are the final stages of doctoral studies and require a high level of scientific knowledge, research skills and analytical ability. The goal of this stage is to create original and meaningful scientific research in the chosen field and successfully present it before the scientific council. Determining the relevance and significance of the study. Review of existing scientific works and literature on the chosen topic. Rationale for the choice of conceptual and methodological approaches for the study.	12				v	v	
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5. Summary table reflecting the volume of loans disbursed in the context of EP modules

Course of Study	Semester	The number of doctored modules	The number of studied disciplines			Number of credits KZ					Total at for hours	Total credits KZ	amount	
			OC	HSC	EC	Theoretical training	Teaching practice	Research practice	SRWD	Writing and defending a doctoral dissertation			exz	differential offset
1	1	3		3	3	25			5		900	30	6	1
	2	2					10		20		900	30		2
2	3	2						10	20		900	30		2
	4	1							30		900	30		1
3	5	1							30		900	30		1
	6	1							18	12	900	30		1
Total		3		3	3	25	10	10	123	12	5400	180	6	8

6. Learning strategies and methods, control and evaluation

Learning strategies	Doctor–centered learning: The Doctor is the center of teaching/learning and an active participant in the learning and decision-making process. Practice-oriented training: orientation to the development of practical skills.
Teaching methods	Conducting lectures, seminars, various types of practices with: • the use of innovative technologies: • problem-based learning; • case study; • work in a group and creative groups; • discussions and dialogues, intellectual games, olympiads, quizzes; • reflection methods, projects, benchmarking; • Bloom's taxonomies; • presentations; • rational and creative use of information sources: • multimedia training programs; • electronic textbooks; • digital resources. Organization of independent work of Doctors, individual consultations.
Monitoring and evaluation of the achievability of learning outcomes	Current control on each topic of the discipline, control of knowledge in classroom and extracurricular classes (<i>according to syllabus</i>). Assessment forms: • survey in the classroom; • testing on the topics of the discipline; • control works; • protection of independent creative works; • discussions; • trainings; • colloquiums; • essays, etc. Boundary control at least twice during one academic period within the framework of one academic discipline. Intermediate certification is carried out in accordance with the working curriculum, academic calendar. Forms of holding: • exam in the form of testing; • oral examination; • written exam; • combined exam; • project protection; • protection of practice reports. Final state certification.

7. Training and resource support

Information Resource Center	The structure of the Educational Information Center includes 6 subscriptions, 16 reading rooms, 2 electronic resource centers (ERC). The basis of the network infrastructure of the Educational and Information Center is 180 computers with Internet access, 110 workstations, 6 interactive whiteboards, 2 video doubles, 1 video conferencing system, 3 A-4 format scanners, JIC software - AIBS «IRBIS-64» under MS Windows (basic set of 6 modules), stand-alone server for uninterrupted operation in the IRBIS system. The library fund is reflected in the electronic catalog available to users on the site http://lib.ukgu.kz on-line 24 hours 7 days a week. Thematic databases of their own generation: «Almamater», «Proceedings of SKSU scientists», «Electronic archive» have been created. Online access from any device 24/7 via the external link http://articles.ukgu.kz/ru/pps. Catalogs are processed electronically. EC consists of 9 databases: «Books», «Articles», «Periodicals», «Proceedings of the teaching staff of SKSU», «Rare Books», «Electronic Fund», «SKGU in Print», «Readers» and «SKU». The EIC provides its users with 3 options for accessing its own electronic information resources: from the “Electronic Catalog” terminals in the catalog hall and in the EIC subdivisions; through the information network of the university for faculties and departments; remotely on the library website http://lib.ukgu.kz/. Open access to international and republican resources: «SpringerLink», «Polpred», «Web of Science», «EBSCO», «Epigraph», to electronic versions of scientific journals in the public domain, «Zan», «RMEB», «Adebiet», Digital library «Aknurpress», «Smart-kitar», «Kitar.kz», etc. For people with special needs and disabilities, the library website has been adapted to the work of visually impaired users
Material and technical complex	The material and technical base of the educational program 8D11210 «Life safety and environmental protection» currently consists of three academic buildings, which house a library, reading and subscription halls, laboratories, specialized classrooms and classrooms equipped with modern technical training facilities. The laboratories have an aquadistillator DE-25 «SPb», a thermostat, an electric microscope N.A.125, laboratory scales square VLKT-500, a dose rate meter (X-ray meter) DP-5B, a dosimeter DRGZ-02, a manual cup anemometer MS-13, a meteorological aneroid type barograph M-22, an aspiration psychrometer MV-4M, current measuring tongs, infrared gas analyzer PGA-7, psychrometric hygrometers VIT-1, laboratory pH meter millivoltmeter pH-121, luxmeter Yu117, luxmeter type Yu-16, apparatus for determining the flash point in a closed crucible TV-3, ionometric converter I-500 «Aquilon». Analytical instrument I-160 MI (laboratory ionomer), Computer included, Robot Simulator, (2 pcs), Direct-indicating Dosimeter, Thermal imager, Radiometer, Noise meter VSV-003, Electric aspiration meter M-34M, Direct-indicating Dosimeter, Computer system unit, Samsung LED monitor 23(58), pH meter pH-222.2 to determine the acidity and alkalinity of solutions, a fume hood. All computer classes are equipped with new generation computers and liquid crystal monitors, connected to a local network and connected to

	the Internet, the services of which all employees and undergraduates use for free and without time limit. The departments of «Life safety and Environmental protection» are equipped with computers, printers, audio-video equipment. Interactive whiteboards, multimedia projectors, panoramic screens are available for classes. The classroom fund, which includes lecture halls, seminar rooms, laboratory facilities, workplaces for undergraduates, as well as facilities, tools and equipment, a modern instrument base, meet the requirements of each implemented educational program. According to all requirements and indicators, such as illumination, acoustics, temperature, technical equipment, environmental and aesthetic indicators of the classrooms are comfortable and comply with sanitary and epidemiological norms and rules. So, in particular, auditorium 108 – computer class (36m²), the following types of work are carried out: conducting lectures, practical work, certain types of laboratory work, conducting classes using computer programs and applications. The auditorium is equipped with an interactive whiteboard. Auditorium 111 – electrical safety laboratory (36m²) the following types of work are carried out: conducting practical work, certain types of laboratory work. Auditorium 113 – Labor and Environmental Protection Laboratory (42m²) the following types of work are carried out: practical work, all types of laboratory work, SRMP. At the Department of «Life Safety and Environmental Protection», the educational process and scientific research are carried out in two laboratories and two subject classrooms, including a computer classroom. The computer classroom of the department is equipped with 13 computers, two interactive whiteboards that allow using information technology in the performance of laboratory and practical classes, diploma and term papers, as well as in the preliminary defense of master's and doctoral dissertations. The material and technical base makes it possible to ensure the qualitative growth of the human capital of the region, through the development of an innovative scientific and educational environment and the training of competitive highly qualified personnel with high personal and professional competencies in accordance with the needs of the market. The laboratory base is represented by the following organizations: Research and Production Center «PromBez-Archstroy-Expert» LLP, «Petro Kazakhstan Oil Products» LLP, «InEU» LLP, «Kainar» LLP, «ANB KAZSTROYSERVICE» LLP, which allows doctoral students to actively engage in experimental research the work of doctoral students (EIRD), the research work of doctoral students (NIRD) under the guidance of teachers. The university has a regional laboratory for collective use «IRLIP» and a test center «SAPA», where undergraduates conduct research and experiments on their dissertations.
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APPROVAL SHEET

on the Educational program
8D11210 - Life safety and environmental protection

Director of the Department of
Academic Affairs and Quality
of the Educational Process



A.S. Naukenova

Deputy of the Department of
Academic Science



U.B. Nazarbek