



Ministry of Science and Higher Education of the Republic of Kazakhstan
ELN "Pavlodar Pedagogical University named after Alkey Margulan"

Approved
at a meeting of the Council of the Higher
School
Protocol No. 7
from 28.05 2024 year



**DEVELOPMENT PLAN
EDUCATIONAL PROGRAM
6B01552 "Biology" (IP)
FOR 2024-2028**

Pavlodar, 2024

The form of the educational program development plan

F. 4-100

1 Passport of the development plan EP

1	The grounds for developing a development plan for the educational program, consistency with the regulatory legal acts and the university development strategy	<ol style="list-style-type: none">1. Law of the Republic of Kazakhstan "On Education" dated July 27, 2007 No. 319-III in the current version;2. Law of the Republic of Kazakhstan "On Science" dated February 18, 2011 No. 407-IV in the current version;3. The concept of development of higher education and science in the Republic of Kazakhstan for 2023-2029 dated March 28, 2023 No. 248;4. Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No. 2 "On approval of state mandatory standards of higher and postgraduate education" (hereinafter referred to as SCES);5. Order of the Minister of Education and Science of the Republic of Kazakhstan dated April 20, 2011 No. 152 "On approval of the Rules for organizing the educational process using credit technology of education in organizations of higher and (or) postgraduate education";6. Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 30, 2018 No. 595 "On approval of the Model Rules for the activities of higher and postgraduate education organizations";7. Joint order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated May 28, 2024 No. 260 and the Deputy Prime Minister - Minister of National Economy of the Republic of Kazakhstan dated June 7, 2024 No. 30 "On Amendments to the Joint Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated December 1, 2022 No. 166 and the Minister of National Economy of the Republic of Kazakhstan dated December 2, 2022 No. 116 "On Approval of Risk Assessment Criteria and Checklists for the Education System, in Part of Higher and Postgraduate Education";8. Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated January 5, 2024 No. 4. Registered in the Ministry of Justice of the Republic of Kazakhstan on January 8, 2024 No. 33892 "On approval of qualification requirements for the educational activities of organizations providing higher and (or) postgraduate education, and the list of documents confirming compliance with them";9. Development program of ELN "Pavlodar Pedagogical University named after Alkey Margulan" for 2023-2029 dated March 28, 2024.10. Development program of the Higher School of Natural Sciences for 2024-2029.
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2	The main developers of the development plan of the EP	<p>The working group consists of the following members:</p> <p>Head of the working group – Head of the EP Tulindinova G.K., candidate of biological sciences Teaching staff of EP – Geldymamedova E.A., candidate of biological sciences Teaching staff of EP – Shakeneva D.K.-K., PhD Teaching staff of EP – Kabieva S.Zh., candidate of biological sciences</p> <p>External stakeholders (employers, experts) – Moldasapar Sh.M., Deputy Director for Educational Work, Secondary Comprehensive School No. 7, Pavlodar Chaikovskaya E.L., biology and chemistry teacher, highest qualification category, master teacher, KSU "School-Lyceum named after Amanzhol Shamkenov of Pavlodar" of the Education Department of Pavlodar Region Students studying in this specialty Lee M. – 2nd year student Zhunusov I. – 3rd year student</p>
3	The implementation period of the development plan of the EP	2024-2028 years
4	Volume and sources of funding	Financing from the state budget, attraction of external sources of financing. The amount of funding for the educational program is determined taking into account the formation of a contingent of students on a fee-based basis (at the expense of students' own funds) and based on the sources of implemented and funded projects of the department.
5	Expected final results of the implementation of the development plan of the EP	<ol style="list-style-type: none"> 1. Development of scientific skills and independence; 2. Improving the quality and competitiveness of scientific publications; 3. Strengthening the research base; 4. Development of interdisciplinary competencies; 5. Strengthening ties with international scientific communities; 6. Preparation for teaching activities; 7. Development of project work and scientific management skills.

2 Analytical justification of the program

2.1 Information about the educational program

Educational program 6B01552 Biology is developed in accordance with the State Educational Standard of the Republic of Kazakhstan, Professional standard for teachers (teaching staff) of higher and/or postgraduate education institutions, the National Qualifications Framework, and is consistent with the Dublin Descriptors and the European Qualifications Framework. This ensures the quality and uniformity of education at this level.

The aim of the educational program 6B01552 "Biology" (IP) is to prepare a qualified biology teacher who is capable of using innovative technologies, including STEM, CLIL, and IT technologies in their professional activities, who has

pedagogical and subject competencies in the field of conceptual and theoretical knowledge, conducting scientific research and applying it in science.

Tasks of the EP:

- development of professional competencies in the field of teaching biology;
- creating conditions for self-development, self-study and self-education of students;
- development of skills in using innovative pedagogical approaches and methods, including problem-based learning, project activities, and the use of multimedia and digital technologies.
- to promote the integration of scientific knowledge and educational practices, providing students with the opportunity to apply their acquired knowledge in real educational situations.

2.2 Information about students

The number of students currently consists of 8 people, all of whom are studying in the 1st year. Language of instruction is Russian.

The educational program 6B01552 "Biology" (IP) offers students a wide range of opportunities to acquire both theoretical and practical knowledge. It lays the foundation for a further professional career, scientific research or academic activity, and also provides an opportunity for an interdisciplinary approach in the study of biological and related sciences.

2.3 Internal conditions for the implementation of the EP

For implementation 6B01552 "Biology" (IP), there is the necessary auditorium fund, computer classes, sports halls, a rich book fund. Students and teaching staff use the auditorium fund, computer classes, lecture halls, multimedia auditoriums available at the university.

EP 6B01552 "Biology" (IP) equipped with the necessary educational laboratories, 9 computer classrooms, including 8 classrooms; 5 lecture halls; 7 multimedia classrooms, 10 specialized rooms and 3 specialized educational laboratories.

A serious scientific platform for writing graduate work are specialized educational laboratories equipped in accordance with the requirements and a museum complex, which provide the opportunity not only to conduct laboratory and practical classes, but also to conduct scientific research of the teaching staff.

2.4. Competitiveness and uniqueness of the EP

Educational program 6B01552 "Biology" (IP) was developed within the framework of the project "Implementation of the model of pedagogical education and strengthening of its content." The Ministry of Science and Higher Education of the Republic of Kazakhstan, with the support of the World Bank, participated in the development16 experts from Finland (HAMK and JAMK), 11 experts from

Nazarbayev University, 25 pedagogical developers and 80 members of institutional teams from 17 universities in different regions of Kazakhstan.

For the first time, personnel training for working with children with autism spectrum disorders is being considered.

The IEP provides for the creation of digital content, work with digital footprints and the analysis of educational data, and the use of learning technology in the context of digitalization.

The disciplines and their content are designed to reduce the gap between global and local practices of management in education.

Training meta-researchers in education.

The program includes an introduction to new technologies in the field of education, such as the use of interactive learning tools, virtual laboratories, multimedia materials and other tools for more engaging and effective learning. The educational program provides students with a solid scientific basis in all key areas of biology: from cellular and molecular biology to ecology and evolution. This allows graduates to become experts in their field. The program also focuses on methods and techniques for teaching biology. Students master various pedagogical approaches, get acquainted with current educational standards and technologies, including the use of digital educational resources and laboratory workshops.

2.5 Information about the teaching staff implementing the EP

The share of full-time faculty with academic degrees and titles in the biological profile is 100%. The faculty of the EP consists of 14 full-time teachers, including: 3 doctors of biological sciences, 6 candidates of sciences, 3 PhD.

- 3 doctors of biological sciences: professor Tarasovskaya N.E., professor Zhumabekova B.K., professor Abimuldina S.T.;

- 6 candidates of biological sciences: head of the educational program Tulindinova G.K., professor Darzhuman G.K., professor Gabdul Khaeva B.B., associate professors Korogod N.P., associate professor Kabieva S.Zh. and senior lecturer Geldymamedova E.A.;

- Candidate of Cultural Studies V.N. Aliasova;

- 3 PhD doctors: Dean of the Higher School Gabdullin E.S., Associate Professor Asylbekova G.E., Research Teacher Shakeneva D.K.-K.;

- Master of Biology, Baymurzina B.Zh.

Teachers annually improve their qualifications through advanced training courses and short-term seminars. Advanced training of teaching staff is carried out in accordance with the university plan in various areas in order to enhance the scientific and pedagogical, educational and methodological levels of training of teaching staff.

Teachers are planning various forms of advanced training: taking courses at leading universities in the Republic of Kazakhstan and in countries near and far abroad.

The teaching staff conducts open classes using modern innovative technologies. Conducting open classes allows not only to control the teaching process, but also to obtain useful information about the quality of the level of conducting classes.

In order to develop key competencies of graduates and learning outcomes in the educational program, the teaching staff uses both traditional technologies and teaching methods, such as role-playing and business games, work in small groups, as well as innovative ones: blended learning, project technology, case study, inquiry-based learning, modular learning, contextual learning, flipped classroom, problem-based learning, individual learning, advanced independent work, interdisciplinary learning

SWOT analysis external and internal environment for the implementation of the EP

S (strength) – strengths (potential positive internal factors)	W (weakness) – weaknesses (potentially negative internal factors)
- Availability of reference and information resources about the EP.	- Weak representation of students in the university's collegial organs.
- Availability of a material and technical base that ensures the implementation of all types of practical training and research work of teaching staff and graduate students.	- Lack of academic mobility of students.
- Availability of integrated disciplines.	
- Involvement of experienced specialists to conduct an examination of the program and regular updating and updating taking into account the latest scientific achievements, technological developments and social needs.	
O (opportunity) – favorable opportunities (potentially positive external factors)	T (threat) – threats (potentially negative external factors)
- Close cooperation with educational institutions in the organization and implementation of career guidance events, educational and methodological meetings and seminars.	- Increased competition due to the growth of similar educational programs in other universities in Kazakhstan.
- Attracting practicing teachers and leading scientists from foreign universities to development and strengthening of relations	- Demographic changes - falling demand for EP

with foreign educational institutions and educational organizations	
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4 Main risks of implementing the educational program and measures to minimize risks

This section defines the main risks of implementing the educational program, their possible consequences and establishes mechanisms and management measures to minimize risks.

Risk name	Possible consequences	Mechanisms and measures of management
Decrease in the number of students	Reduction of the contingent	Strengthen career guidance work. Conduct meetings and round tables with potential applicants.
Lack of academic mobility	Decrease in competitiveness of graduates of the EP	Creation of academic exchange programs with universities in nearby regions. To raise awareness of academic mobility opportunities. Organizing local events to expand intercultural interaction.

5 The main goals and objectives of the development plan of the EP and ways to achieve them.

1. **Ensuring a high level of quality education:**
 - o Development of students' competencies that meet modern scientific and professional requirements.
 - o Increasing the competitiveness of graduates in the labour market.
2. **Adaptation of the educational process to modern challenges:**
 - o Implementation of innovative approaches and technologies in the educational process.
 - o Promoting the formation of environmental and scientific culture.
3. **Strengthening the practical focus of training:**
 - o Creating conditions for carrying out research and design work.
 - o Developing relationships with employers, research institutions and professional communities.
4. **Supporting the professional development of teachers:**
 - o Improving the qualifications of teaching staff.
 - o Implementation of new methods and approaches to teaching.

6 Expected results from the implementation of the development plan of the EP by 2027

The expected results of the implementation of the development plan for the educational program in biology are related to the improvement of the quality of education, the increase in the interest of students and the readiness of graduates for modern challenges of science and society. They include changes at the level of the educational process, professional training and personal development of students.

7 Development plan educational program 6B01552 "Biology" (IP) for 2024-2028

This section contains a plan for the development of the educational program until 2027, in which the criteria for the effectiveness and efficiency of the implementation of the EP are defined by the current strategic goals of the University Development Program for 2023-2024.


Criteria for the effectiveness and efficiency of the implementation of the EP	Target indicators	Unit of measurement	2024	2025	2026	2027	2028
Strategic Direction 1. Academic Excellence							
1. Improving the quality of educational services	Development of MOOCs on EP	unit					
	Use of MOOCs, including the COURSERA platform, in the educational process of the EP	%	7	7	7	7	7
	Compliance of the educational program with the professional standard "Teacher"		+	+	+	+	+
	Participation of industry associations and enterprises and other external stakeholders in the process of developing the EP		+	+	+	+	+
	Number of employers participating in the assessment of the quality of training of specialists	person	3	3	3	3	3
	Completion of the international accreditation procedure for the educational institution for a period of at least 5 years			+			
	Successful implementation of post-accreditation monitoring of the EP					+	
	Entry of the EP into the TOP-3 of international and national subject rankings		+	+	+	+	+
	Degree in EP	%	60	60	60	60	60
	The share of practicing teachers from the total number of teaching staff of the educational institution	%	14	14	14	14	14
	The share of teaching staff who have undergone advanced training and/or foreign internships in the last three years in the profile of the taught disciplines, from the total number of teaching staff of the EP	%	44	44	44	44	44
	Number of teaching staff with English language proficiency confirmed by an international certificate	person	-	-	-	-	-
	The share of teaching staff teaching in English from the total number of teaching staff of educational institutions	%	-	-	-	-	-
	2. Ensuring accessibility of higher education	The share of students of the EP who have the Altyn Belgi badge, as well as winners of international Olympiads and competitions of scientific projects	%	3			

Criteria for the effectiveness and efficiency of the implementation of the EP	Target indicators	Unit of measurement	2024	2025	2026	2027	2028
	over the past three years, from the total number of those admitted to the EP						
	The share of winners of the presidential, republican Olympiads and competitions of scientific projects of the current academic year (awarded with diplomas of the first, second and third degrees), from the total number of students in the EP	%	3				
	Percentage of grades "A", "A-" in relation to the total number of positive grades and "F" in relation to the total number of grades for the academic period in the EP	%	20	20	20	20	20
	Passing the threshold score of the ATK by graduates of the EP	%					90
	The share of employed graduates in the first year after graduation from the university, from the total number of graduates of the EP	%					90
	Level of employer satisfaction with the training of graduates of the EP	%					95
Strategic Direction 2: Research and Innovation Leadership							
1. Development of university science	The share of teaching staff engaged in research work from the total number of teaching staff of educational institutions	%	36	36.5	37	37.5	38
	The share of young teaching staff engaged in research work from the total number of teaching staff of the EP	%	7	7	7	7	7
	The number of scientific publications in international indexed journals included in the international scientometric databases Web of Science and Scopus/International Patents	unit	1	1	1	1	1
	Number of publications of the teaching staff EP in publications recommended by the Science and Higher Education Quality Assurance Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan/Monographs	unit	1	1	1	1	1
	Number of scientific researches/projects, implemented at the EP (grant, contractual, international)	unit	1	1	1	1	1
	The number of teaching aids developed in the Kazakh language	unit	-	-	1	1	1
	The number of educational and methodological publications developed by teaching staff on the specifics of the educational program	unit	-	-	1	1	1
	The share of students of the educational program involved in the	%	-	-	3	4	5

Criteria for the effectiveness and efficiency of the implementation of the EP	Target indicators	Unit of measurement	2024	2025	2026	2027	2028
	implementation of scientific projects through participation in grant, program-targeted and contractual research, from the total number of students of the educational program						
2. Commercialization of scientific results	Number of startup projects implemented by students and teaching staff of the EP	unit	0	0	1	1	2
	Volume of private co-financing of commercialized projects of the Russian Scientific and Technical Department and applied scientific research (MIO, business representatives)	tenge	0	500,000	500,000	500,000	500,000
Strategic Direction 3. The Third Mission of the University							
1. Education for all	Level of satisfaction of students and teachers of the educational program with the ecosystem	%	90	90	90	90	90
2. Harmonious development of students	The share of students participating in student government from the total number of students in the educational program	%	2	4	5	6	7
	The share of students involved in the activities of organizations for intellectual development and creativity (Zhaidarman, art, music, debates, etc.), from the total number of students in the educational program	%	5	7	10	12	15
	The share of students involved in socially significant activities (volunteering, charity, environmental projects, sacred geography, etc.) from the total number of students in the educational program	%	10	12	15	17	19
	The share of students involved in mass sports and healthy lifestyles from the total number of students in the educational program	%	13	15	17	20	23
Strategic direction 4. Sustainable development of the university							
1. Contingent	Number of students enrolled in state educational programs	person	7	7	7	7	7
	Number of students on a fee-paying basis	person	1	1	1	1	1
	Total number of first-year students admitted	person	8	8	8	8	8
	Implementation of the indicative plan for recruiting applicants to the EP	%	100	100	100	100	100
	Preservation of the contingent at the EP	%	93	93	93	93	93
	Level of satisfaction of students of the educational program with the quality of educational services	%	90	90	90	90	90

Criteria for the effectiveness and efficiency of the implementation of the EP	Target indicators	Unit of measurement	2024	2025	2026	2027	2028
2. Internationalization	The share of students who went abroad under the academic mobility program for a period of at least a trimester, semester, or academic year from the total number of students in the educational program	%	0	0.2	0.3	0.3	0.3
	The share of students who entered the academic mobility program from abroad for a period of at least a trimester, semester, or academic year from the total number of students in the educational program	%	0	0.2	0.3	0.3	0.3
	The share of foreign students from the total number of students in the educational program	%	3	3	3	3	3
	Number of invited foreign teachers	person	1	-	1	-	1
	Number of teaching staff included in academic mobility programs, including universities of the Republic of Kazakhstan, foreign universities	person	-	-	1	-	-
3. Financial development	Provision of teaching and methodological materials, educational literature	%	100	100	100	100	100
	Purchasing software	Unit/tenge	-	-	-	-	-
	Purchase of laboratory equipment	Unit/tenge	5	5	5	5	5
	Replenishment of the library collection	Unit/tenge	20	20	20	20	20
	Furniture purchase	Unit/tenge	5	5	5	5	5

Head of the EP


(signature) G.K. Tulindinova
(initial of name, surname)

Agreed:

Dean of the Higher School


(signature) E.S. Gabdullin
(initial of name, surname)