

**NON-PROFIT JOINT-STOCK COMPANY ABAI KAZAKH NATIONAL
PEDAGOGICAL UNIVERSITY**

FACULTY OF NATURAL SCIENCES AND GEOGRAPHY



Approved by

Dean of the Faculty

R.D. Kaimuldinova

2024

DEVELOPMENT PLAN OF THE EDUCATIONAL PROGRAM

8D05301-Chemistry

for the years 2023-2029

Almaty, 2024

The development plan of the educational program was formulated based on the following documents: "On the Nationwide Priorities of the Republic of Kazakhstan until 2025" (Decree of the President of the Republic of Kazakhstan dated February 26, 2021, No. 520) <https://adilet.zan.kz/rus/docs/U2100000520>, and the "ABAI UNIVERSITY" Development Strategy for 2022-2025 (approved by the decision of the Board of Directors of Abai Kazakh National Pedagogical University dated December 9, 2021, Protocol No. 12)

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Approved

At the meeting of the Faculty Council of Natural Sciences and Geography
Protocol No. 5 dated "25" 01, 2024

Reviewed

At the meeting of the Department of "Chemistry"
Protocol No. 5 dated "18" 01, 2024
Head of the Department Zh.S. Mukataeva



PREFACE

Educational program development plan 8D05301 – Chemistry for 2023-2029.

Code and name of the field of education: 8D05- Natural sciences, mathematics and statistics

Code and name of the training area: 8D053-Physical and Chemical Sciences

Group of educational programs: D053 – Chemistry.

The program strategy is aimed at the formation and implementation of the established competency model, as well as at expanding the possible circle of employers.

Mission educational program: Formation of human resources potential - highly qualified specialists competitive in the domestic and international labor market in accordance with their needs and development prospects of the country and the region

The purpose of the educational program: Preparation competitive, competent scientific and teaching staff – doctors PhD, who possess professional and scientific competencies and are capable of self-education and advanced training throughout their lives.

The development plan for the educational program was developed taking into account the requirements of employers, in accordance with the national development priorities of the Republic of Kazakhstan until 2029 and the development strategy of "Abai University" for 2023-2029.

ANALYSIS OF THE CURRENT SITUATION

General information about the educational program

Developers of the development plan of the EP	Representatives of the department: Mukataeva Zh.S., Korganbaeva Zh.K., Chinibaeva N.S., Akylbekova T.N. Employers: Kudreeva L.K. KazNU named after al-Farabi, Bektenov N.A., KazNPU named after Abay, Students: Dyusembayeva G.T., OP 7M05301 – Chemistry
Academic degree:	Doctor of Philosophy (PhD) in the educational program 8D05301 – Chemistry
Year of opening:	2008
Language of instruction:	Kazakh, Russian
Form of study:	full-time
Duration of training:	3
Volume of credits:	180
Uniqueness of the EP	<p>The uniqueness and advantages of the educational program 8D05301-Chemistry:</p> <ol style="list-style-type: none"> 1.Specialization in chemistry within the framework of doctoral studies allows for a deeper study of the basic principles and laws of chemical processes, which is important in the context of the rapid development of science and technology. 2.The university may offer unique opportunities for research and practical work in the field of chemistry, thanks to the availability of modern equipment and laboratories. 3.The doctoral program can be adapted to the specifics of the region and the scientific areas relevant to the area. For example, the region may focus on research in the field of ecology, new materials, or pharmaceuticals. 4.Doctoral students' participation in research projects and conferences as part of their doctoral program helps them gain the experience and practical skills necessary for a successful scientific career. 5.The program may be aimed at training specialists who meet the university's strategic objectives, such as improving the quality of scientific research, attracting talented scientists and ensuring the university's innovative development.
Model Graduate	<ul style="list-style-type: none"> ➤ Ability to work effectively in a team, using strong scientific communication skills; ➤ They form a personality capable of mobility in the modern world, critical thinking and physical self-improvement; ➤ Able to independently set specific tasks for scientific research in the field of chemistry and solve them using physical and chemical research methods and information technologies using the latest domestic and foreign experience; ➤ Capable of conducting expert work in accordance with the focus (profile) of his doctoral program and presenting its results in the form of reports prepared in accordance with existing requirements; ➤ Professional and social responsibility, hard work; ➤ Emotional intelligence and emotional stability, respect for historical and cultural heritage, tolerance; ➤ Multilingualism, ability to constructive interaction, adaptability to global challenges;

	➤ The ability to lead others, be a leader, make independent decisions and continuously professional growth and self-development;
Types of professional activity	1. Educational (pedagogical) 2. Educational and training 3. Educational and technological 4. Social and pedagogical 5. Experimental research 6. Organizational and managerial 7. Information and communication
Academic Mobility Partners	<i>External academic mobility.</i> Pomeranian Academy in Slupsk (Poland); University of Poitiers (France); Lille University (France); University of Lorraine (France); Heidelberg University (Germany); Adam Mickiewicz University (Poland); Mykolas-Romiris University (Lithuania); Vilnius University (Lithuania); Vytautas Magnus University (Lithuania); University of Debrecen (Hungary); Nigde Omer Halisdemir University (Turkey); MuğlaSıtkı Koçman üniversitesi (Turkey); Giresun University (Turkey); Firat University (Turkey); <i>Internal academic mobility.</i> Aktobe University named after. S. Baisheva; Atyrau University named after Kh. Dosmukhamedov; ARU named after K. Zhubanov; Kyzylorda University named after. KorkytAta.
Employment of graduates	100%
Availability of an appendix to the license for the direction of personnel training	No. 0137373
MAIN ENTERPRISES WITH WHICH COOPERATION IS CARRIED OUT:	JOINT-STOCK COMPANY "INSTITUTE OF FUEL, CATALYSIS AND ELECTROCHEMISTRY NAMED AFTER D.V. SOKOLSKY", JOINT-STOCK COMPANY "INSTITUTE OF CHEMICAL SCIENCES NAMED AFTER A.B.BEKTUROV, SCIENTIFIC AND PRODUCTION ENTERPRISE TOO "ANTIGEN", KAZAKH NATIONAL UNIVERSITY NAMED AFTERAL-FARABI
Expected final results of the implementation of the development plan of the OP	- improving the educational, research and professional activities of students and teaching staff; - improving the qualifications of teaching staff in the field of innovative teaching technologies; -development of educational and teaching-methodological literature; - participation of students and teaching staff in competitions and project implementation; -increasing the level of the information technology base; -development and operation of joint educational programs with domestic and foreign universities

The main risks of the educational program

Risk name	Possible consequences	Mechanisms and measures of management
Competition in the educational services market	Formationpublic opinion about this EP	Creating a recognizable image of the educational program,increase in the number of university grants, positive feedback about this EP, trust, interest, activity of the Alumni Association (media appearances),advertising the quality of educationABAI UNIVERSITYpotential employers in order to increase the flow of interesting vacancies for our students and graduates.
Contingent of students	Reduction of the number of students	implementation of a set of measures aimed at retaining the contingent, introducing more effective forms of career guidance work;systematic interaction with graduates after graduation, increasing the number of practice-oriented courses in the EP
Economic crisis	Decrease in solvency	providing the opportunity to pay off debts in stages, individualization of training, motivation to continue training, individual and group psychological consultations.

SWOT analysis of the implementation of educational programs

	Strengths	Weaknesses
Internal factors	<ul style="list-style-type: none"> - The goals and strategy of the program are aimed at the formation and implementation of the established competency model, as well as at expanding the possible circle of employers; - In-depth study of disciplines to achieve the required level of qualification in the student's chosen field of chemistry. - Highly qualified teaching staff; - Research and development activities carried out in accordance with the actual needs of the enterprise; - Availability of a developed information infrastructure covering all types of activities; - Active position of the Student Council; - Marketing activities for effective interaction between the university and the employer; - High level of employment of graduates; - Practice-oriented and a wide range of implemented educational programs; - Availability of modern equipment and devices; - Work of graduates in their specialty - Student-centered learning; - Continuous monitoring and periodic evaluation of programs. 	<ul style="list-style-type: none"> - Insufficient number of students; - Lack of joint educational programs with foreign universities; - Low activity of the Alumni Association and lack of an endowment fund.
	Favorable opportunities	Threats and risks
External factors	<ul style="list-style-type: none"> - Using the opportunities of academic freedom; - The presence of a large number of initiative research topics within which final theses can be completed; - Participation of the department's teaching staff in international educational exhibitions and fairs; - Informing students about vacancies and internships and the situation on the labor market; - Orientation of the individual towards the formation of the ability for self-education in various areas: educational and scientific activities, creativity, professional career; - A fairly high level of effectiveness of educational activities, increased activity of students. - Development of distance learning technologies. 	<ul style="list-style-type: none"> - high competition in the educational services market; - economic crisis and its consequences - decrease in the population's solvency;

1. MAIN TASKS OF DEVELOPMENT OF THE EDUCATIONAL PROGRAM

Direction 1. Expanding access to the university's educational services

No.	Performance indicators	Unit change	2023	2024	2025
1.	Contingent of students in EP 8D05301 - Chemistry	Unit	4	7	10
2.	Admission to the EP	Unit	3	3	3

Direction 2. Innovative support for educational activities

No.	Performance indicators (share, percentage, quantity)	Unit change	2023	2024	2025	Responsible persons	Completion form
1.	Making a decision on the type of EP (current, new, innovative, interdisciplinary, additional (minor), joint EP	unit	D -1	D - 1	D- 1	graduation department	EP
2.	Participation of the EP in the EP ratings	fact	+	+	+	graduation department	EP rating results
3.	Accreditation of the EP	fact			+	graduation department	Result Accreditation
4.	Post-accreditation monitoring	fact	+			graduation department	Results of post-accreditation monitoring
5.	Updating the EP taking into account the requirements of the labor market	fact	+	+	+	graduation department	Updated EP, Expert opinion

6.	Analysis of the EP for compliance with the university's strategic development plan	fact	+	+	+	graduation department	Minutes of department meetings
7.	Conducting round tables on the implementation of competencies in the educational process	fact	+	+	+	graduation department, employers	Help . protocol
8.	The number of specialists from the relevant industry involved in the educational process	man	2	3	4	graduation department	Agreements, memorandums
9.	Analysis of the availability of PPS with the corresponding potential for the development of EP	%	100%	100%	100%	graduation department	Staff form of the department's teaching staff
10.	Number of teaching staff who have completed advanced training courses in the subject area	%	100%	100%	100%	graduation department PPS	Certificates, diplomas
11.	The share of graduates of the EP employed in the first year after completing their studies (from the total number of graduates)	%	100%	100%	100%	graduation department	Employment results
12.	The share of graduates of the educational program, trained under state orders, employed in the first year after graduation from the university under the educational program	%	100%	100%	100%	graduation department	Employment results
13.	Percentage of university graduates participating in the assessment of the quality of educational services (full-time education)	fact	+	+	+	graduation department	Presence in the commission
14.	Participation of doctoral students in determining the content of the program	fact	+	+	+	graduation department, students	Among the authors of the EP
15.	Number of employers participating in the assessment of the quality of training of specialists	ed	2	5	5	Employers of the EP	Agreements, memoranda, expert opinions
16.	The proportion of students participating in the assessment of the teaching activities of the teaching staff	%	50	50	50	graduation department students	Poll results
17.	Number of teaching and methodological complexes	%	100	100	100	graduation department students	Developments by disciplines
18.	Providing UMP	%	100	100	100	graduation department	library collection

Direction3.ANDInternationalization of the program

No.	Performance indicators (share, percentage, quantity)	Unit change	2023	2024	2025	Responsible persons	Completion form
1.	Interuniversity partnership within the framework of the EP: Double-degree EP	unit	-	-	1	graduation department	SOP, Double-degree EP
	with a foreign university	unit	-	-	1		
	with a Kazakh university	unit	-	1	1		
2.	Conclusion of strategic partnership agreements with foreign universities in priority areas of doctoral training	fact	+	+	+	graduation department	Contracts
3.	The number of students who completed scientific internships at leading foreign universities and research centers, companies	ed	1	1	1	graduation department	Order, report
4.	Number of students of the educational program participating in the internal outgoing academic mobility program	ed	-	1	2	graduation department, academic mobility center	Order, transcript of students
5.	Number of students of the educational program participating in the internal incoming academic mobility program	ed	-	1	1	graduating department student	Order, transcript of students

6	Number of faculty members participating in the internal outgoing academic mobility program	ed	1	1	1	graduation department PPS academic mobility center	Order, report
7.	Number of faculty members participating in the internal incoming academic mobility program	ed	1	1	1	graduation department PPS academic mobility center	report
8.	Number of foreign scientists attracted	ed	-	1	1	graduation department PPS	report
9.	Number of faculty members participating in the external outgoing academic mobility program	ed	1	1	1	graduation department PPS academic mobility center	report

Direction 4. Expanding the scope of scientific research and innovation

No.	Performance indicators (share, percentage, quantity)	Unit change	2023	2024	2025	Responsible persons	Completion form
1.	Number of faculty members participating in educational and research projects	ed	2	2	3	graduation department	report
2.	Number of teaching staff involved in the implementation of fundamental and applied research	ed	2	2	3	graduation department	report
3.	Number of publications in journals ranked in the 1st, 2nd, and 3rd quartiles of the Clarivate Analytics Journal Citation Reports or having a Cite Score percentile in the Scopus database	unit	1	2	3	graduation department	Base indicator
4.	Number of publications of scientific articles by doctoral students in journals with non-zero impact factor included in the databases Thomson Reuters/Scopus	unit	1	2	3	graduation department doctoral students	Database indicators
5	International scientific and practical conference "Modern aspects of chemical science and chemical education: theory and practice". Almaty, (December 6-7, 2022)	fact	-	+	-	graduation department	Collection of the magazine, Information in the media and links in social networks
6	Round table "The Path to Science" scientific-methodical seminar meeting of outstanding chemists and scientists	fact	+	+	+	graduation department	Information in the media and links in social networks
7	The number of R&D projects carried out within the framework of international cooperation	unit	1	1	1	graduation department	report
8	Number of publications in editions recommended by the Committee for Control of Social and Economic Affairs (KKSON)	unit	3	6	8	graduation department	report
9	Number of teachers participating in the Republican competition Best Teacher	unit	1	1	1	graduation department	Competition result
10	Number of publications by students	unit	1	1	1	graduation department student	report
11	Number of students participating in	unit	1	1	1	graduation	report

	scientific research and competitions					department student	
12	Functioning of scientific centers, laboratories: <ul style="list-style-type: none"> • Laboratory of organic synthesis • Laboratory of physical and chemical research methods • Laboratory of Inorganic Chemistry • Laboratory of Analytical Chemistry • Laboratory of chemical technology • Laboratory of Petrochemistry and Organics 	fact	+	+	+	graduation department student	Auditorium fund

Direction5. Improving infrastructure and material and technical base

No.	Performance indicators (share, percentage, quantity)	Unit change	2023	2024	2025	Responsible persons	Completion form
1	Development of the computer park	fact	+	+	+	graduation department	infrastructure modernization
2	Purchasing software	fact	+	+	+	graduation department	infrastructure modernization
3	Purchase of laboratory equipment, etc.	fact	+	+	+	graduation department	infrastructure modernization
4	Replenishment of the library collection	fact	+	+	+	graduation department	infrastructure modernization
5	Furniture purchase	fact	+	+	+	graduation department	infrastructure modernization

Direction6. Career guidance work within the framework of the OP

No.	Performance indicators (share, percentage, quantity)	Unit change	2023	2024	2025	Responsible persons	Completion form
1	Providing presentations to students and school teachers on online and offline platforms, handouts with information about this educational program, the list of subjects for passing the UNT, the list of documents required for admission, as well as the university rating, its material and technical base and the possibilities of admission to ABAI UNIVERSITY	fact	+	+	+	graduation department	Report, links in social networks
2	Conducting meetings of the Council on career guidance and preparation of applicants, organizing the work of working groups in key areas.	fact	+	+	+	graduation department	Report on the contingent of students
3	Round table "Career guidance – an investment in the future".	fact	+	+	+	graduation department	Report

Direction7. Educational work within the framework of the EP

No.	Performance indicators (share, percentage, quantity)	Unit change	2023	2024	2025	Responsible persons	Completion form
1	Conducting events within the framework of the Programs and in accordance with the educational work plan of the Institute	fact	+	+	+	graduation department	Report, links in social networks