NON-COMMERCIAL JOINT STOCK COMPANY
KAZAKH NATIONAL PEDAGOGICAL UNIVERSITY
NAMED AFTER ABAI

FACULTY OF SCIENCE AND GEOGRAPHY

APPROVED
Dean of the Faculty
K.D. Kalmuldinova
2023 y.

DEVELOPMENT PLAN OF THE EDUCATIONAL PROGRAM 8D05301-CHEMISTRY

2023-2029

ALMATY, 2023

The Development Plan of the Educational Program has been developed 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 26.02.2021 № 520) https://adilet.zan.kz/rus/docs/U2100000520/history Development Strategy «ABAI UNIVERSITY» 2023-2029 y.

https://www.kaznpu.kz/docs/docs/260224/Prog_ru.pdf

Approved
At the meeting of the Faculty Council of Natural Sciences and Geography
Minutes № 5 dated 25.01.2023

Reviewed
At the meeting of the Department of "Chemistry"
Minutes №6 dated 18.01.2023
Head of Department _____ Zh.S. Mukataeva

FOREWORD

Development Plan of the Educational Program 8D05301 – Chemistry

2023-2029

Code and Name of the Field of Education: 8D053 - natural Sciences, mathematics, and statistics
Code and Name of the Training Direction: 8D053 - Physical and Chemical Sciences
Group of Educational Programs: D053 - Chemistry

The program's strategy is aimed at the formation and implementation of an established competency model, as well as the expansion of the potential pool of employers.

Mission of the Educational Program:

To form a human resource potential of highly qualified specialists who are competitive in the domestic and international labor markets, in accordance with the demands and future development prospects of the country and the region.

Goal of the Educational Program:

To train competitive, competent scientific and pedagogical personnel - PhD doctors-possessing professional and scientific competencies, capable of self-education and continuous professional development throughout their lives.The Development Plan of 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 EP development plan	Department Representatives: Mukataeva Zh.S., Korganbaeva Zh.K., Chinibaeva N.S., Akylbekova T.N. Employers: Kudreeva L.K. (Al-Farabi Kazakh National University), Kadirbekov K.A. (A.B. Bekturov Institute of Chemical Sciences), Bektenov N.A. (Abai Kazakh National Pedagogical University) Students: Dyusembayeva G.T., PhD student of the educational program 8D05301 – Chemistry
Academic degree:	Doctor of Philosophy (PhD) in the Educational Program 8D05301 – Chemistry
Year of establishment:	2019
Language of instruction:	kazakh, russian
Form of study:	full-time
Duration of study:	3
Number of credits:	180
Uniqueness of the EP	Uniqueness and Advantages of the Educational Program 8D05301 – Chemistry: 1. Specialization in chemistry within the framework of the doctoral program allows for a deeper understanding of the fundamental principles and laws of chemical processes, which is crucial in the context of rapid scientific and technological development. 2. The university offers unique opportunities for research and practical work in the field of chemistry, supported by modern equipment and laboratories. 3. The doctoral program can be adapted to the specifics of the region and scientific areas relevant to the locality. For example, there may be an emphasis on research in ecology, new materials, or pharmaceuticals. 4. Participation of doctoral students in research projects and conferences within the doctoral program helps them gain experience and practical skills necessary for a successful scientific career. 5. The program is oriented towards preparing specialists who meet the university's strategic objectives, such as improving the quality of scientific research, attracting talented scientists, and ensuring the innovative development of the institution.
Graduate Model	➢ Ability to work effectively in a team and utilize strong scientific communication skills;

	➢ Formation of a personality capable of mobility in the modern world, critical thinking, and physical self-improvement; ➢ Ability to independently set specific research tasks in the field of chemistry and solve them using physicochemical research methods and information technologies, applying the latest domestic and international experience; ➢ Ability to carry out expert activities in accordance with the specialization (profile) of the doctoral program and present the results in the form of reports prepared according to established requirements; ➢ Professional and social responsibility, diligence; ➢ Emotional intelligence and emotional stability, respect for historical and cultural heritage, and tolerance; ➢ Multilingualism, ability for constructive interaction, and adaptability to global challenges; ➢ Ability to lead others, be a leader, make independent decisions, and engage in continuous professional growth and self-development.
Types of Professional Activities	1. Educational (Pedagogical) 2. Educational and Upbringing 3. Educational and Technological 4. Social and Pedagogical 5. Experimental and Research 6. Organizational and Managerial 7. Information and Communication
Partners in Academic Mobility	*Academic Mobility* *External Academic Mobility:* Students of the educational program have the opportunity to participate in academic mobility programs at leading international universities. These include: Pomeranian Academy in Słupsk (Poland), University of Poitiers (France), University of Lille (France), University of Lorraine (France), Heidelberg University (Germany), Adam Mickiewicz University (Poland), Mykolas Romeris University (Lithuania), Vilnius University (Lithuania), Vytautas Magnus University (Lithuania), University of Debrecen (Hungary), Nigde Omer Halisdemir University (Turkey), Muğla Sıtkı Koçman University (Turkey), Giresun University (Turkey), and Fırat University (Turkey). *Internal Academic Mobility:* Within the country, students can also enhance their academic experience by participating in internal mobility programs at partner institutions such as Aktobe University named after S. Baishev, Atyrau University named after H. Dosmukhamedov, K. Zhubanov Aktobe Regional University, and Korkyt Ata Kyzylorda University.
Employment of graduates	100 %
Availability of an appendix to the license for the training direction	№ 0137373
Main enterprises with which cooperation is carried out	oint Stock Company "D.V. Sokolsky Institute of Fuel, Catalysis and Electrochemistry", Joint Stock Company "A.B. Bekturov Institute of Chemical Sciences", Scientific and Production Enterprise LLP "Antigen", Al-Farabi Kazakh National University.
Expected final outcomes of the implementation of the educational program development plan:	Improvement of the educational, research, and professional activities of students and teaching staff; Professional development of teaching staff in the field of innovative teaching technologies; Development of educational and instructional literature; Participation of students and teaching staff in competitions and project implementation;

	Enhancement of the information and technical infrastructure; Development and implementation of joint educational programs with domestic and foreign universities.

Main risks of the educational program

Risk name	**Possible consequences**	**Management mechanisms and measures**
Competition in the Educational Services Market	Shaping Positive Public Opinion about the Educational Program	**Creating a Recognizable Image of the Educational Program, Increasing the Number of University Scholarships, and Generating Positive Feedback about the Program** Building trust, sparking interest, and encouraging the active involvement of the Alumni Association (including media appearances), as well as promoting the quality of education at ABAI UNIVERSITY to potential employers in order to increase the flow of attractive job opportunities for our students and graduates.
Contingent of students	Reduction of the number of students	Implementation of a set of measures aimed at retaining the student body, introducing more effective forms of career guidance work; establishing systematic interaction with graduates after university completion; increasing the number of practice-oriented courses within the educational program.
Economic crisis	Decrease in purchasing power	Providing opportunities for phased repayment of debts, individualizing the learning process, motivating students to continue their education, and offering individual and group psychological counseling.

SWOT analysis of the implementation of educational programs.

	Strengths	**Weaknesses**
Internal Factors	- The goals and strategy of the program are aimed at developing and implementing the established competency model, as well as expanding the potential pool of employers; - In-depth study of disciplines to achieve the necessary level of qualification in the student's chosen field of chemistry; - Highly qualified faculty members; - Research activities carried out in accordance with real industry demands; - Availability of a developed information infrastructure covering all types of activities; - Active involvement of the Student Council; - Marketing activities to ensure effective interaction between the university and employers; - High employment rate of graduates; - Practice-oriented approach and a wide range of implemented educational programs; - Availability of modern equipment and instruments; - Graduates working in their field of specialization; - Student-centered learning approach; - Continuous monitoring and periodic evaluation of programs.	- Insufficient number of enrolled students; - Lack of joint educational programs with foreign universities; - Low activity of the Alumni Association and absence of an endowment fund.
Favorable opportunities		**Threats and Risks**

External factors	- Utilization of academic freedom opportunities; - Availability of numerous research topics, within which graduation projects can be carried out; - Participation of the department's faculty in international educational exhibitions and fairs; - Informing students about vacancies, internships, and the labor market situation; - Focusing on developing the ability for self-education in various fields: academic and scientific activities, creativity, and professional careers; - A relatively high level of effectiveness in conducting educational activities, with an increase in student engagement; - Development of distance learning technologies.	- High competition in the educational services market; - Student attrition; - Pandemic; - Economic crisis; - General trend of increasing the cost of paid education.

1. MAIN OBJECTIVES OF THE EDUCATIONAL PROGRAM DEVELOPMENT

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

№	Performance indicators	Unit	2023	2024	2025
1.	Student Enrollment for the Educational Program 8D05301 - Chemistry.	unit	4	7	10
2.	Admission to the Educational Program.	unit	3	3	3

Direction 2. Innovative support of educational activities

№	Performance indicators (share, percentage, quantity)	Unit	2023	2024	2025	Responsible executors	Form of completion
1.	Decision on the type of the Educational Program (existing, new, innovative, interdisciplinary, additional (minor), joint Educational Program).	units	Д -1	Д – 1	Д- 1	Graduating department	Educational Program
2.	Participation of the Educational Program in program rankings	fact	+	+	+	Graduating department	Ranking results of the Educational Program
3.	Accreditation of the Educational Program	fact			+	Graduating department	Accreditation result
4	Post-accreditation monitoring	fact	+			Graduating department	Post-accreditation monitoring results
5.	Updating the Educational Program in line with labor market requirements	fact	+	+	+	Graduating department	Updated Educational Program
6.	Analysis of the Educational Program for alignment with the university's strategic development plan	fact	+	+	+	Graduating department	Expert conclusions
7.	Conducting round tables on the integration of competencies into the educational process	fact	+	+	+	Graduating department, employers	Department meeting protocols
8.	Number of industry specialists involved in the educational process	person	2	3	4	Graduating department	Report, protocol
9.	Analysis of the availability of faculty with the relevant potential for the development of the Educational Program	%	100 %	100 %	100 %	Graduating department	Contracts, memorandums

10.	Number of faculty members who have completed professional development courses in the subject area	%	100 %	100 %	100 %	Graduating department	Staffing chart of the department's faculty
11.	Proportion of graduates employed within the first year after completion of the program (out of the total number of graduates)	%	100 %	100 %	100 %	Faculty members (PPS)	Certificates, diplomas
12.	Proportion of state-funded graduates employed within the first year after graduation from the program	%	100 %	100 %	100 %	Graduating department	Employment results
13.	Proportion of university graduates participating in the evaluation of educational quality (full-time education)	fact	+	+	+	Graduating department	Employment results
14.	Participation of doctoral students in defining the content of the program	fact	+	+	+	Graduating department	Presence in the commission
15.	Number of employers involved in evaluating the quality of specialist training	units	2	5	5	Graduating department, students	Composition of the Educational Program developers
16.	Proportion of students participating in the evaluation of faculty pedagogical activities	%	50	50	50	Employers of the Educational Program	Contracts, memorandums, expert conclusions
17.	Number of educational-methodical complexes	%	100	100	100	Graduating department, students	Survey results
18.	Provision of Educational and Methodological Support	%	100	100	100	Graduatingdepartment, students	Course developments

Direction 3. Internationalization of the program

№	**Performance indicators (share, percentage, quantity)**	**Unit**	**2023**	**2024**	**2025**	**Responsible executors**	**Form of completion**
1.	Inter-university partnership within the framework of the Educational Program: Double-degree Educational Programs	units	-	-	1	Graduating departmentGraduating department	Educational Program, Double-degree Educational Programs Contracts Order, report
	with a foreign university	units	-	-	1		
	with a Kazakhstani university	units	-	1	1		
2.	Conclusion of strategic partnership agreements with foreign universities on priority areas for doctoral training	units	+	+	+	Graduating department	Order, transcript of students
3.	Number of students who have completed research internships at leading foreign universities, research centers, and companies	units	1	1	1	Graduating department	Order, transcript of students
4.	Number of students in the Educational Program participating in the internal outgoing academic mobility program	units	-	1	2	Graduating department, Center for Academic Mobility	Order, report

5.	Number of students in the Educational Program participating in the internal incoming academic mobility program	units	-	1	1	Graduating department, student	Report
6	Number of faculty members participating in the internal outgoing academic mobility program	units	1	1	1	Graduating department, faculty members (PPS), Center for Academic Mobility	Report
7.	Number of faculty members participating in the internal incoming academic mobility program	units	1	1	1	Graduating department, faculty members (PPS), Center for Academic Mobility	Report
8.	Number of foreign scholars involved	units	-	1	1	Graduating department, faculty members (PPS)	Educational Program, Double-degree Educational Programs
9.	Number of faculty members participating in the external outgoing academic mobility program	units	1	1	1	Graduating department, faculty members (PPS)	Contracts

Direction 4. Expansion of the scope of scientific research and innovations

№	**Performance indicators (share, percentage, quantity)**	**Unit**	**2023**	**2024**	**2025**	**Responsible executors**	**Form of completion**
1.	Number of faculty members (PPS) involved in educational and research projects	units	2	2	3	Graduating department	Report
2.	Number of faculty members (PPS) involved in fundamental and applied research	units	2	2	3	Graduating department	Report
3.	Number of publications in journals that are in the 1st, 2nd, and 3rd quartiles according to the Journal Citation Reports by Clarivate Analytics or have a percentile score in Cite Score in the Scopus database	units	1	2	3	Graduating department	Database indicator
4.	Number of publications by doctoral students in journals with a non-zero impact factor listed in Thomson Reuters/Scopus databases	units	1	2	3	Graduating department doctoral students **(or** PhD 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	-	+	-	Graduating department	Journal collection

6	Round table "Path to Science" - a scientific-methodological seminar with outstanding chemists-scientists	fact	+	+	+	Graduating department	Information in the media and links on social networks
7	Number of research projects (R&D) conducted within the framework of international cooperation	units	1	1	1	Graduating department	Information in the media and links on social networks
8	Number of publications in journals recommended by the Committee for Quality Control of Education (KKSON)	units	3	6	8	Graduating department	Report
9	Number of faculty members participating in the National Competition for Best Teacher	units	1	1	1	Graduating department	Report
10	Number of publications by students	units	1	1	1	Graduating department, student	Competition result
11	Number of students participating in scientific research and competitions	units	1	1	1	Graduating department, student	Report
12	Functioning of scientific centers and laboratories:	fact	+	+	+	Graduating department, student	Report

Direction 5. Improvement of infrastructure and material-technical base.

№	**Performance indicators (share, percentage, quantity)**	**Unit**	**2023**	**2024**	**2025**	**Responsible executors**	**Form of completion**
1	Development of the computer park.	fact	+	+	+	Graduating department	Infrastructure modernization.
2	Acquisition of software.	fact	+	+	+	Graduating department	Infrastructure modernization.
3	Acquisition of laboratory equipment and others.	fact	+	+	+	Graduating department	Infrastructure modernization.
4	Replenishment of the library collection.	fact	+	+	+	Graduating department	Infrastructure modernization.
5	Purchase of furniture.	fact	+	+	+	Graduating department	Infrastructure modernization.

Direction 6. Career guidance work within the framework of the educational program.

№	**Performance indicators (share, percentage, quantity)**	**Unit**	**2023**	**2024**	**2025**	**Responsible executors**	**Form of completion**
1	Providing presentations to students and teachers on online and offline platforms, distributing materials with information about the educational program, list of subjects for the UNT, list of documents required for admission, as well as the university ranking, material and technical base, and admission opportunities to ABAI UNIVERSITY.	fact	+	+	+	Graduating department	Graduating department

2	Holding meetings of the Career Guidance Council and preparing for the enrollment of applicants, organizing the work of task groups on key directions.	fact	+	+	+	Responsible Executors	Graduating department	tR
3	Roundtable "Career Guidance – an Investment in the Future.	fact	+	+	+	Graduating department	Graduating department	tR

Direction 7. Educational Work within the Framework of the Educational Program

№	**Performance indicators (share, percentage, quantity)**	**Unit**	**2023**	**2024**	**2025**	**Responsible executors**	**Form of completion**	R
1	Conducting activities within the framework of the Program and according to the educational work plan of the institute	fact	+	+	+	Graduating department	Report, social media links	