

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

**Institute of Mathematics, Physics and Computer Science
Department of «Methods of Teaching Mathematics, Physics and Computer Science»**

«APPROVE»
Acting Director of IMFI
Khamraev Sh.I.
_____ 2022 year



**EDUCATIONAL PROGRAM DEVELOPMENT PLAN
8D01504 – «Physics»
for 2022-2025**

Almaty, 2022

The development plan of the OP was developed on the basis of documents: On National priorities of the Republic of Kazakhstan until 2025 (Decree of the President of the Republic of Kazakhstan dated 02/26/2021 No. 520) <https://adilet.zan.kz/rus/docs/U2100000520>, The development strategy of "ABAI UNIVERSITY for 2022-2025" (approved by the decision of the Board of Directors of NAO KazNPU. Abaya from 09.12.2021, ave. No. 12) https://www.kaznpu.kz/docs/str_rus.pdf

Approved

at the meeting of the Council of the Institute of Mathematics, Physics and Computer Science

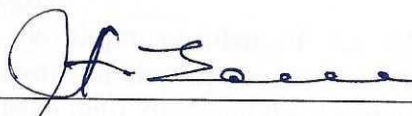
Protocol № 5 from « 31 » 01 2022 year.

Considered

at the meeting of the department «Methods of teaching mathematics, physics and computer science»

Protocol № 4 from « 13 » 12 2021 year.

Head

 A.E. Abylkassymova

PREFACE

Development plan of the educational program 8D01504 – Physics for 2022-2025

Code and names of the field of education: 8D01 – Pedagogical sciences

Code and names of the direction of training: 8D015 – Training of teachers in natural science subjects

Group of educational programs: D011 - Training of physics teachers

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

The mission of the educational program: Formation of human resources—highly qualified specialists competitive in the domestic and international labor market in accordance with their requests and prospects for the development of the country and the region.

The purpose of the educational program: Preparation of PhD doctors in the field of physics who have the skills to organize research work in a new direction of scientific research, analytical generalization of the results of scientific activity, allowing to prepare a qualifying scientific work for a PhD degree.

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 2025 and the development strategy of Abai University for 2022-2025.

ANALYSIS OF THE CURRENT SITUATION

General information about the educational program

Developers of the OP development plan	Representatives of the department: Abylkasymova A.E., Sydykova Zh.K., Yerzhenbek B., Nametkulova F.D., Sugirbekova A.K. Employers: Tileubai S.O. director of gymnasium No.140 named after M.Makataev, Dzhumadillaev K.N. Physics teacher of the NIS FMN Almaty Students: Shakirov A.K. OP 8D01504 – Physics
Academic degree:	Doctor of Philosophy (PhD) in the educational program 8D01504 – Physics
Year of opening:	2013
Language of instruction:	kazakh, russian
Form of training:	очная
Duration of training:	3
Volume of loans:	180
Uniqueness of the OP	Training of qualified, competitive personnel who meet the modern requirements of the labor market and possess advanced technologies in the field of teaching methods and scientific and methodological research. The opportunity to conduct all types of classes at the university using innovative technologies for the formation of professional competencies of students and researchers; to determine individual trajectories of students' education, taking into account global trends and strategies for the development of higher education; to develop new knowledge in the field of physics, theory and methods of vocational education.
Graduate Model	<ul style="list-style-type: none">- generation of new knowledge in the form of sound and reliable results of doctoral research- understands the principles of physics teaching in educational institutions of higher professional education, has information about the modern methodology of higher school pedagogy, knows the psychological foundations of active teaching methods and educational work at the university, organizational forms and principles of the learning process and pedagogical control- knows and uses the basic theories, concepts and principles in the chosen field of activity, has the ability to system thinking- able to demonstrate a comprehensive understanding of the fundamental laws of physics and various research methods used in testing scientific theories

	- possesses managerial and leadership abilities: critical thinking, creativity, innovative approach and willingness to make decisions in any life situations
Types of professional activity	1. Educational (pedagogical) 2. Educational and educational 3. Educational and technological 4. Socio-pedagogical 5. Experimental research 6. Organizational and managerial 7. Information and communication
Partners in the ranking of doctoral students	<i>Partner universities</i> Kuwait International University, Kyrgyz National University named after J.Balasagyn (Bishkek, Kyrgyzstan), Riga Technical University (Riga, Latvia), Belarusian State University (Minsk, Belarus)
Employment of graduates	100 %
Availability of an appendix to the license for the direction of training	№ KZ29LAA00018497, issued on July 28, 2020, appendix to the license for educational activities
Expected final results of the implementation of the OP development plan	<ul style="list-style-type: none"> – improvement of educational, research and professional activities of students and teaching staff; – advanced training of teaching staff in the field of innovative learning technologies; – development of educational and methodical literature; – participation of students and teaching staff in competitions, project implementation; – improving the level of the information and technical base; – development and operation of joint educational programs with domestic and foreign universities

The main risks of the educational program

Name of the risk	Possible consequences	Management mechanisms and measures
Competition in the educational services market	Formation of public opinion about this OP	Creating a recognizable image of the educational program, increasing the number of university grants, positive feedback about this OP, trust, interest, activity of the Alumni Association (speeches in the media), advertising the quality of education of ABAI UNIVERSITY to potential employers in order to increase the flow of interesting vacancies for our students and graduates.
Contingent of students	Reducing the number of students	the implementation of a set of measures aimed at maintaining the contingent, the introduction of more effective forms of career guidance; systematic interaction with graduates after graduation, increasing practice-oriented courses on OP
Economic crisis	Reduced solvency	provision of the possibility of step-by-step payment of debts, 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 competence model, as well as at expanding the possible range of employers – In-depth study of disciplines to achieve the necessary degree of qualification in the field of physics and teaching methods chosen by students – Highly qualified teaching staff – Availability of a developed information infrastructure covering all types of activities; – High level of employment of graduates – Practical orientation of the OP – Sufficient level of material, technical and information security – The work of graduates in their specialty – Student-oriented 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
	Blogging opportunities	Threats and risks
Внешние факторы	<ul style="list-style-type: none"> – The presence of a large number of initiative topics of research works, within which research dissertations can be carried out; – Informing students about vacancies and internships and the situation on the labor market; – Orientation of the individual to the formation of the ability to self-education in various fields: educational and methodical, scientific activity, professional career; – Development of distance learning technologies. 	<ul style="list-style-type: none"> – Pandemic – Economic crisis – The general trend of increasing the cost of paid education.

1. THE MAIN OBJECTIVES OF THE DEVELOPMENT OF THE EDUCATIONAL PROGRAM

Direction 1. Expanding access to educational services of the University

№	Performance indicators	Ed. ed.	2022	2023	2024	2025
1.	Contingent of trainees in OP 8D01504 - Physics	ed.	5	5	5	5
2.	Reception by OP	ed.	3	4	3	5

Direction 2. Innovative provision of educational activities

№	Indicators of results (share, percentage, quantity)	Ed. ed.	2022	2023	2024	2025	Responsible performers	Completion Form
1.	Making a decision on the type of OP (current, new, innovative, joint OP)	ed.	D -1	D -1	D – 1	D - 1	graduating department	OP
2.	OP's participation in OP ratings	fact	+	+	+	+	graduating department	Results of the rating OP
3.	Accreditation of the OP	fact		+			graduating department	Result Accreditation
4.	Post-accreditation monitoring	fact			+		graduating department	Results of post-accreditation monitoring
5.	Updating the OP taking into account the requirements of the labor market	fact	+	+	+	+	graduating department	Updated OP, Expert opinion

6.	Analysis of the OP for compliance with the strategic development plan of the university	fact	+	+	+	+	graduating department	Minutes of meetings of the department
7.	Conducting round tables on the implementation of competencies in the educational process	fact	+	+	+	+	graduating department, employers	reference, protocol
8.	The number of specialists involved in the educational process in the relevant industry	human	2	2	3	4	graduating department	Agreements, memoranda
9.	Analysis of the availability of a PPP with the appropriate potential for the development of OP	%	100%	100%	100%	100%	graduating department	Staff form of the faculty of the department
10.	The number of teaching staff who have completed advanced training courses in the subject area	%	100%	100%	100%	100%	graduate department of teaching staff	Certificates, diplomas
11.	The share of graduates of the OP employed in the first year after graduation (from the total number of graduates)	%	100%	100%	100%	100%	graduating department	Results employment
12.	The share of graduates of the OP, trained by state order, employed in the first year after graduation from the university of the OP	%	100%	100%	100%	100%	graduating department	Results employment
13.	The proportion of university graduates participating in the assessment of the quality of educational services (full-time study)	fact	+	+	+	+	graduating department	Presence in the commission
14.	Participation of doctoral students in determining the content of the program	fact	+	+	+	+	graduating department, students	As part of the compilers of the OP
15.	The number of employers participating in the assessment of the quality of training of specialists	ed.	2	2	3	4	Employers OP	Contracts, memoranda, expert opinion
16.	The proportion of students participating in the assessment of teaching activities of teaching staff	%	100	100	100	100	graduating department students	Survey results
17.	Number of UMKD	%	100	100	100	100	graduating department students	Developments in disciplines
18.	Providing UMP	%	100	100	100	100	graduating department	library fund

Direction 3. Internationalization of the program

№	Indicators of results (share, percentage, quantity)	Ed. ed.	2022	2023	2024	2025	Responsible performers	Completion Form
1.	Interuniversity partnership within the framework of the with a foreign university with a Kazakh university	ed.	-	-	-	1	graduating department	SOP
		ed.	-	-	-	1		
		ed.	-	-	-	1		
2.	Conclusion of strategic partnership agreements with foreign universities on priority areas of doctoral training	fact	+	+	+	+	graduating department	Contracts

3.	The number of students who have completed a scientific internship at leading foreign universities and research centers, companies	ed.	-	2	2	2	graduating department	Order, report
4.	The number of students participating in the internal outgoing academic mobility program	ed.	-	-	-	1	graduate department, center for academic mobility	Order, transcript of students
5.	The number of students participating in the internal incoming academic mobility program	ed.	-	-	-	1	graduating department student	Order, transcript of students
6.	Number of teaching staff participating in the internal Outgoing Academic mobility program	ed.	-	-	1	1	graduating department PPS academic mobility center	Order, report
7.	Number of teaching staff participating in the internal Incoming Academic mobility program	ed.	-	-	1	1	graduating department PPS academic mobility center	report
8.	Number of foreign scientists involved	ed.	-	-	-	1	graduate department of teaching staff	report
9.	Number of teaching staff participating in the external Outgoing Academic mobility program	ed.	-	-	1	1	graduating department PPS academic mobility center	report

Direction 4. Expansion of the sphere of scientific research and innovation

<i>Nº</i>	Indicators of results (share, percentage, quantity)	Ed. ed.	2022	2023	2024	2025	Responsible performers	Completion Form
1.	Number of teaching staff participating in educational and research projects	ed.	2	2	2	3	graduating department	report
2.	The number of teaching staff involved in the implementation of fundamental and applied research	ed.	-	-	-	1	graduating department	report
3.	The number of publications in the publications included in the 1st, 2nd and 3rd quartiles according to the Journal Citation Reports of Clarivate Analytics or having a percentile indicator in the Scopus database according to the Cite Score	ed.	1	1	2	2	graduating department	Base indicator
4.	The number of publications of scientific articles of doctoral students in journals with a non-zero impact factor included in databases Thomson Reuters/Scopus	ed.	1	1	2	2	the graduating department of doctoral students	Database metrics
5.	International scientific and practical conference «Actual problems of teaching	fact	-	-	+	+	graduating department	Collection of the magazine,

	mathematics and physics at school and university» Almaty, (November 25-26, 2021)							Information in the media and links in social networks
6	Methodological seminar «Problems of continuity of teaching mathematics and physics at school and pedagogical university in a digital educational environment»	fact	-	+	+	+	graduating department	Information in the media and links in social networks
7	Number of publications in publications recommended by COXON	ed.	3	3	6	7	graduating department	report
8	The number of teachers participating in the Republican contest «The best teacher»	ed.	-	-	-	1	graduating department	The result of the contest
9	Number of student publications	ed.	2	2	2	2	graduating department student	report
10	Number of students taking part in scientific research and competitions	ed.	1	1	1	1	graduating department student	report

Direction 5. Improvement of infrastructure and material and technical base

№	Indicators of results (share, percentage, quantity)	Ed. ed.	2022	2023	2024	2025	Responsible performers	Completion Form
1	Purchase of laboratory equipment, etc.	fact	+	+	+	+	graduating department	infrastructure modernization
2	Replenishment of the library fund	fact	+	+	+	+	graduating department	infrastructure modernization

Direction 6. Career guidance work within the framework of the OP

№	Показатели результатов (доля, процент, количество)	Ед. изм.	2022	2023	2024	2025	Ответственные исполнители	Форма завершения
1	Providing presentations to students and teachers of schools on online and offline platforms, handouts with information about this educational program, a list of subjects for passing the UNT, a list of documents required for admission, as well as the rating of the university, its material and technical base and the possibility of admission to ABAI UNIVERSITY	fact	+	+	+	+	graduating department	Report, social media links
2	Holding meetings of the Council for Career Guidance and preparation of applicants, organizing the work of working groups in key areas.	fact	+	+	+	+	graduating department	Report on the contingent of students
3	Round table «Career guidance – investment in the future».	fact	+	+	+	+	graduating department	report