NJSC SHAKARIM UNIVERSITY OF SEMEY

EDUCATIONAL PROGRAM

6B01 - Pedagogical sciences
(Code and classification of the field of education)

6B015 - Training of teachers in Natural science subjects
(Code and classification of the direction of training)

0114
(Code in the International Standard Classification of Education)

B010 - Physics teacher training
(Code and classification of the educational program group)

6B01514 - Physics (IP)
(Code and name of the educational program)

Bachelor
(Level of preparation)

Semey

Educational program

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Semey 2024

PREFACE

Developed

The educational program 6B01514 - Physics (IP) in the direction of preparation 6B015 - Training of teachers in Natural science subjects on the basis of the State Compulsory Standards of Higher and Postgraduate Education approved by the Order of the Ministry of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No 2 (as amended by the order) was developed by the Academic Committee dated 20.02.2023 No 66).

Members of the Academic Committee	Full name	Academic degree, academic title, position
Head of the Academic Committee	Ospanova Dinara	Dean of the Higher School of Physical and Mathematical Sciences
Educational program manager	Alipayeva Tolkyn	Senior Lecturer at the Department of Physics and Computer Science
Member of the AC	Kenbaev Daurzhan	Acting Head of the Department of Physics and Computer Science
Member of the AC	Zheldybayeva Balgyn	Senior Lecturer at the Department of Physics and Computer Science
Member of the AC	Malgezhdarova Zhazira	Teacher of Mathematics at KSU «Secondary school No. 23»
Member of the AC	Suleimenova Guldana	Physics teacher of Nazarbayev Intellectual School of Physics and Mathematics in Semey
Member of the AC	Zhakypbaeva Ainur	Student of the F-201group
Member of the AC	Yessenbek Akhmet	Student of the F-301 group

Reviewing

Full name of the reviewer	Position, place of work
Rakhymzhanov Sharipkhan	Director of KSU «Secondary school No. 21»
Burkenov Narken	Director of the Nazarbayev Intellectual School of Physics and Mathematics in Semey

Reviewed

At a meeting of the Academic Quality Commission of the
Natural and Mathematical of the faculty
Protocol No.3 "9" of January 2024

At a meeting of the Academic Quality Commission
of the Higher School of Physical and Mathematical Sciences
Recommended for approval by the Academic Council of the University
Protocol No.1 «06» june 2024

Agreed

Head of the education department of the city of Semey Bulabaev B.Z.

Approved

at a meeting of the University Academic Council by protocol No. 6/1 of January 19, 2024.

at a meeting of the University Academic Council by protocol No. 11 of June 28, 2024.

Content

1.Introduction

1.1.General data

Higher School of Physical and Mathematical Sciences, Department of Physics and Computer Science, Shakarim Semey University, which provides training in the educational program "6B01514 Physics (IP)".

The purpose of the OP - training of a highly professional competitive specialist of modern formation, possessing general cultural and professional competencies in the field of modern pedagogy, capable of creatively and professionally solving problems at a high scientific and practical level, trained to work as physics teachers in secondary schools, gymnasiums, lyceums, colleges, as well as training highly qualified teaching staff in physics, possessing social and civic responsibility, capable of to carry out professional activities in the following areas: education and formation of a comprehensively developed student`s personality; formation of systematized knowledge in the field of physics; organization of the pedagogical process in physics within the framework of the updated content of education.

As a result of mastering the educational program, the graduate must have the following competencies: possesses natural science, social and humanitarian knowledge, knows the content of the regulatory framework of the education system of the Republic of Kazakhstan, is able to plan and conduct training sessions taking into account the specifics of topics and sections of the program in accordance with the curriculum, as well as organizes a personality-oriented approach to education and development of students in order to create motivation for learning, uses experimental computational methods to solve various practical laboratory tasks of a scientific, laboratory and educational nature.

When implementing the educational program, it is envisaged to use artificial intelligence tools in the educational process, thereby developing digital competencies among students in a rapidly changing technological environment.

The educational program provides for the education of a student with special educational needs in a higher educational institution, as well as his socialization and integration into society.

When implementing the educational program, it is planned to use artificial intelligence tools in the educational process, thereby developing digital competencies among students in a rapidly changing technological environment.

The educational program provides for the education of a student with special educational needs in the conditions of a higher educational institution, as well as his socialization and integration into society.

1.2.Completion criteria

The main criterion for the completion of the educational process in the preparation of bachelors is the acquisition of at least 212 credits of theoretical training, as well as at least 21 credits of practice, not 8 credits for the preparation of diplomas.

Total 240 credits.

1.3.Typical study duration: 4 years.

2.PASSPORT OF THE EDUCATIONAL PROGRAM

2.1.EP purpose	Preparation of highly qualified pedagogical personnel in physics capable of solving creative and professional issues in higher education, gymnasiums, lyceums, colleges at the scientific and methodological level
2.2.Map of the training profile within the educational program	
Code and classification of the field of education	6B01 - Pedagogical sciences
Code and classification of the direction of training	6B015 - Training of teachers in Natural science subjects
Code in the International Standard Classification of Education	0114
Code and classification of the educational program group	B010 - Physics teacher training
Code and name of the educational program	6B01514 - Physics (IP)
2.3.Distinctive features of the OP (double degree/joint, OVPO-partner, Double major, innovative)	innovative
2.4.Qualification characteristics of the graduate	
Degree awarded / qualification	Bachelor of Education in the educational program
Name of professional standard	Teacher
Atlas of new professions	-
Regional standard	-
Name of the profession / list of positions of a specialist	Educator. High school teacher
OQF qualification level (industry qualification framework)	6
Area of professional activity	□ physics teacher □ research institutions; □ secondary schools, and secondary vocational educational institutions; □ government authorities; □ organizations of various forms of ownership, using the methods of physics in their work; □ state enterprises and institutions. □ officials in educational organizations (Director of a general educational institution, Deputy Directors for teaching and educational work, etc.) □ methodologist in educational organizations; specialist in the field of pedagogical sciences; in research institutions
Object of professional activity	- A physics teacher. - - Specialist in the implementation of STEAM learning elements, innovative technologies. - specialist in conducting physical research, using modern methods. processing, analysis and synthesis of physical information. - analytical and technological specialist in the field of experimental and theoretical physics.
Types of professional activity	□ Apply modern pedagogical technologies in teaching physics; □ plan and carry out research work in the field of pedagogical sciences;

	□ conducting scientific and pedagogical activities in educational institutions; □ organizational and managerial; □ socio-pedagogical; □ teaching and educational; □ educational and technological.
2.5.Graduate Model	As a result of mastering the educational program, the graduate must have the following competencies: he knows the natural sciences, social and humanitarian knowledge, knows the content of the legal framework of the education system of the Republic of Kazakhstan, knows how to plan and conduct training sessions, taking into account the specifics of topics and sections of the program in accordance with the curriculum, as well as organizes a student-centered approach to the education and development of students in order to create motivation for learning, applies experimental calculation methods to solve various practice-laboratory tasks of a scientific, laboratory and educational nature.

3.Modules and content of the educational program

Module 1Module of historical and ideological competence

Brief description of the module content

The purpose of the module "Worldview" is to introduce students to the circle of philosophical-anthropological, socio-historical, ethical-cultural and economic-legal problems of our time.

Module disciplines
Foreign language

History of Kazakhstan

Philosophy

Modul 2. Module of socio-political education (Sociology, Political Science, Cultural Studies)

Brief description of the module content

The module is based on the study of theories of sociology related to the names of key foreign and domestic scientists who have contributed to the development of sociology.

Module disciplines
The module of socio-political knowledge (sociology, political science, cultural studies, psychology)

Research skills in law and anti-corruption culture

Economic and Business Research Methods

Fundamentals of research in ecology and safe life

Modul 3 Instrumental and communicative module

Brief description of the module content

Instrumental competencies include cognitive abilities - the ability to understand and use ideas and considerations.

Module disciplines
Information and communication technology

Kazakh(Russian) language (1)

Foreign language

Kazakh(Russian) language (2)

Модуль 4Healthy Lifestyle Module

Brief description of the module content

Module "Generation of healthy lifestyle" Task: to promote the development of students` motivation to make an informed choice of the value of life and health, skills of a safe and creative lifestyle.

Module disciplines
Physical Culture

Physical Culture

Physical Culture

Physical Culture

Модуль 5 Module for the formation of interdisciplinary competencies

Brief description of the module content

Special competence is related to the professional activity of a teacher, his knowledge and skills.

Module disciplines

Модуль 6 Module of pedagogical competencies

Brief description of the module content

Special competence is related to the professional activity of a teacher, his knowledge and skills.

Module disciplines
Abaistudies

Advanced foreign language

Модуль 7 The teacher as a reflexive practitioner

Brief description of the module content

"The reflexive practice of a teacher as a factor in improving the teaching process." This is either a division of the whole into parts, or a mental or written description of the action.

Module disciplines

Age and physiological features of children``s development

Education Science and Key Learning Theories

Psychology, interaction and communication in education

Methods and technologies of teaching physics

Pedagogical studies

Inclusive educational environment

Methods of teaching physics: private issues

Assessment and development

Pedagogical methods

Planning of teaching and individualization of teaching physics

Research, development and innovation of physics.

Digital technologies in education

Модуль 8 General Physics: Physical laws in the world around us

Brief description of the module content

The module "Physical laws around us" has a practice- oriented orientation: it involves solving applied tasks that are personally significant for the student, contribute to expanding his horizons, increasing interest in the science of physics.

Module disciplines

Mechanics

Molecular physics

Electricity and magnetism

Optics

Physics of the atom, atomic nucleus and solid body

Модуль 9 Research in Physics: observation, experiment, hypothesis

Brief description of the module content

Methodological development is a description of the organization of the system of work on project and research activities in order to form natural science knowledge and skills

Module disciplines

Workshop on mechanics

Workshop on molecular physics and thermodynamics

Workshop on electricity and magnetism

A workshop on optics

Workshop on the physics of the atom and atomic nucleus.

Модуль 10-1 Fundamental Physics

Brief description of the module content

Fundamental Physics is a unique educational program that aims at in– depth professional training in the field of theoretical and experimental fundamental physics.

Module disciplines

Methods of mathematical physics

Модуль 10-2 Fundamental Physics

Brief description of the module content

Fundamental Physics is a unique educational program that aims at in– depth professional training in the field of theoretical and experimental fundamental physics.

Module disciplines

Special functions and their applications

Theoretical mechanics

Physics of micro-objects

Модуль 11 - 1 Theory and technology of teaching physics

Brief description of the module content

Theory and technology of teaching physics is a discipline in the system of methodical and professional training of a physics teacher. 4 It describes the patterns and features of studying a school physics course.

Module disciplines

Workshop on solving physical problems 1

A school physics experiment.

Theoretical Physics-1

Workshop on solving physical problems 2

Модуль 11-2 theory and technology of teaching physics

Brief description of the module content

Theory and technology of teaching physics is a discipline in the system of methodical and professional training of a physics teacher. 4 It describes the patterns and features of studying a school physics course

Module disciplines

Technique of the school experiment

Physical practice 1

Physical practicum 2

Модуль 12-1 Interdisciplinary interaction

Brief description of the module content

Interdisciplinary interaction helps to expand the boundaries of the subject area and form a common professional subject field.

Module disciplines

Analytical geometry and linear algebra

Mathematical analysis

Programming

Project approach in scientific education

Theoretical physics-2

Educational Robotics and Mechatronics

Astronomy

Electronics

Модуль12-2 Interdisciplinary interaction

Brief description of the module content

Interdisciplinary interaction helps to expand the boundaries of the subject area and form a common professional subject field.

Module disciplines

Algebra and numbers theory

Pedagogical practice

Mathematical logic and discrete mathematics

Computer graphics

Physics on STEM

Basics of Radio Electronics

Problems of cosmology

Physics and Sustainable Development Education

Final Certification

Brief description of the module content

Writing and defending a thesis or preparing and passing a comprehensive exam.

Module disciplines

4.Summary table on the scope of the educational program

«6B01514 - Physics (IP)»

Name of discipline	Cycle/ Component	Term	Number of credits	Total hours	Lec	SPL	LC	IWST	IWS	Knowledge control form
Module 1Module of historical and ideological competence										
Foreign language	GER/CC	1	5	150		45		35	70	Examination
History of Kazakhstan	GER/CC	2	5	150	15	30		35	70	Qualification examination
Philosophy	GER/CC	3	5	150	15	30		35	70	Examination
Modul 2. Module of socio-political education (Sociology, Political Science, Cultural Studies)										
The module of socio-political knowledge (sociology, political science, cultural studies, psychology)	GER/CC	3	8	240	30	45		55	110	Examination
Research skills in law and anti-corruption culture	GER/CCh	5	5	150	15	30		35	70	Examination
Economic and Business Research Methods	GER/CCh	5	5	150	15	30		35	70	Examination
Fundamentals of research in ecology and safe life	GER/CCh	5	5	150	15	30		35	70	Examination
Modul 3 Instrumental and communicative module										
Information and communication technology	GER/CC	1	5	150	15	15	15	35	70	Examination
Kazakh(Russian) language (1)	GER/CC	1	5	150		45		35	70	Examination
Foreign language	GER/CC	2	5	150		45		35	70	Examination
Kazakh(Russian) language (2)	GER/CC	2	5	150		45		35	70	Examination
Модуль 4Healthy Lifestyle Module										
Physical Culture	GER/CC	1	2	60		60				Passed
Physical Culture	GER/CC	2	2	60		60				Passed
Physical Culture	GER/CC	3	2	60		60				Passed
Physical Culture	GER/CC	4	2	60		60				Passed
Модуль 5 Module for the formation of interdisciplinary competencies										
Модуль 6 Module of pedagogical competencies										
Abaistudies	BS/US	1	2	60	15	15		10	20	Examination
Advanced foreign language	BS/US	6	4	120		36		28	56	Examination
Модуль 7 The teacher as a reflexive practitioner										
Age and physiological features of children``s development	BS/US	2	3	90	15	15		20	40	Examination
Education Science and Key Learning Theories	BS/US	3	4	120	15	30		25	50	Examination
Psychology, interaction and communication in education	BS/US	3	5	150	15	30		35	70	Examination

Methods and technologies of teaching physics	BS/CCh	4	5	150	15	30		35	70	Examination
Pedagogical studies	BS/US	4	5	150	15	30		35	70	Examination
Inclusive educational environment	BS/US	5	4	120	15	30		25	50	Examination
Methods of teaching physics: private issues	BS/US	5	5	150	15	30		35	70	Examination
Assessment and development	BS/US	5	4	120	15	30		25	50	Examination
Pedagogical methods	BS/US	6	6	180						Total mark on practice
Planning of teaching and individualization of teaching physics	BS/CCh	6	4	120	15	30		25	50	Examination
Research, development and innovation of physics.	BS/CCh	7	4	120	15	30		25	50	Examination
Digital technologies in education	BS/CCh	8	3	90	15	15		20	40	Examination
Модуль 8 General Physics: Physical laws in the world around us										
Mechanics	AS/US	1	6	180	15	30	15	40	80	Examination
Molecular physics	AS/CCh	2	5	150	15	15	15	35	70	Examination
Electricity and magnetism	AS/US	3	7	210	15	30	30	45	90	Examination
Optics	AS/US	4	6	180	15	30	15	40	80	Examination
Physics of the atom, atomic nucleus and solid body	AS/US	5	6	180	15	30	15	40	80	Examination
Модуль 9 Research in Physics: observation, experiment, hypothesis										
Workshop on mechanics	AS/US	3	3	90		30		20	40	Examination
Workshop on molecular physics and thermodynamics	AS/US	4	3	90		30		20	40	Examination
Workshop on electricity and magnetism	AS/US	5	3	90	15	15		20	40	Examination
A workshop on optics	AS/US	6	3	90		30		20	40	Examination
Workshop on the physics of the atom and atomic nucleus.	AS/US	7	3	90		30		20	40	Examination
Модуль 10-1 Fundamental Physics										
Methods of mathematical physics	AS/CCh	5	3	90	15	15		20	40	Examination
Модуль 10-2 Fundamental Physics										
Special functions and their applications	AS/CCh	5	3	90	15	15		20	40	Examination
Theoretical mechanics	AS/CCh	6	6	180	15	45		40	80	Examination
Physics of micro-objects	AS/CCh	7	6	180	15	45		40	80	Examination
Модуль 11 - 1 Theory and technology of teaching physics										
Workshop on solving physical problems 1	BS/CCh	6	4	120		45		25	50	Examination
A school physics experiment.	BS/CCh	6	3	90	15	15		20	40	Examination
Theoretical Physics-1	AS/CCh	6	6	180	15	45		40	80	Examination
Workshop on solving physical problems 2	BS/CCh	7	5	150		45		35	70	Examination
Модуль 11-2 theory and technology of teaching physics										

Technique of the school experiment	BS/CCh	6	3	90	15	15		20	40	Examination
Physical practice 1	BS/CCh	6	4	120		45		25	50	Examination
Physical practicum 2	BS/CCh	7	5	150		45		35	70	Examination
Модуль 12-1 Interdisciplinary interaction										
Analytical geometry and linear algebra	AS/CCh	1	5	150	30	15		35	70	Examination
Mathematical analysis	AS/CCh	2	5	150	30	15		35	70	Examination
Programming	AS/CCh	4	5	150	15	30		35	70	Examination
Project approach in scientific education	BS/CCh	7	5	150	15	30		35	70	Examination
Theoretical physics-2	BS/CCh	7	6	180	15	45		40	80	Examination
Educational Robotics and Mechatronics	BS/CCh	8	4	120	15	15	15	25	50	Examination
Astronomy	AS/CCh	8	3	90	15	15		40		Examination
Electronics	AS/CCh	8	4	120	15	30		25	50	Examination
Модуль12-2 Interdisciplinary interaction										
Algebra and numbers theory	AS/CCh	1	5	150	30	15		35	70	Examination
Pedagogical practice	BS/US	2	2	60						Total mark on practice
Mathematical logic and discrete mathematics	AS/CCh	2	5	150	30	15		35	70	Examination
Computer graphics	AS/CCh	4	5	150	15	30		35	70	Examination
Physics on STEM	AS/CCh	7	5	150	15	30		35	70	Examination
Basics of Radio Electronics	AS/CCh	8	4	120	15	30		25	50	Examination
Problems of cosmology	AS/CCh	8	3	90	15	15		20	40	Examination
Physics and Sustainable Development Education	AS/CCh	8	4	120	15	30		25	50	Examination
Final Certification										

NAO "SHAKARIM UNIVERSITY OF SEMEY"

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EDUCATIONAL PROGRAM DEVELOPMENT PLAN

6B01514 Physics (IP)

(OP code and name)

for 2024-2028

Semey 2024 y.

Content

1. Passport of the OP Development Plan, bachelor's 6B01514 Physics (IP)
(name of the OP)

1	The basis for the development	The development program of the NAO "Shakarim University of Semey" for 2023-2029 The work plan of the higher school
2	Terms of implementation	2024-2028 yy.
3	Expected results of the implementation	ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technologies taking into account current trends in the development of society. ON 2 Apply modern teaching technologies and criteria-based assessment, taking into account the individual, physiological and psychological characteristics of students. ON 3 Use fundamental knowledge of physics in solving basic problems of physics, physical phenomena, in explaining basic physical terms, quantities, their mathematical expression and units of measurement. ON 4 Develop electronic learning materials in specialized environments or based on existing electronic libraries, using specialized packages. ON 5 To form personal qualities that provide in-depth special empirical and theoretical knowledge, skills and abilities of practical and theoretical actions on the theory and technology of teaching physics, on innovative pedagogical technologies. ON 6 Plan the current tasks of the development of the education system, training sessions, taking into account the principles of integration and continuity of education at all levels of secondary education. ON 7 Apply modern information and communication technologies in the educational process and develop didactic materials, virtual experiments and demonstrations in physics. ON 8 To develop the ability to theoretical and experimental research in a chosen field of physics, to take into account current trends in the development of physics in their professional activities. ON 9 To conduct experiments in the field of classical sections of physics, to describe research methods in physics. ON 10 To carry out pedagogical, research and educational work.

		activities. ON 9 To conduct experiments in the field of classical sections of physics, to describe research methods in physics. ON 10 To carry out pedagogical, research and educational work.

2. Analytical justification of the OP

2.1 Information about the educational program

The educational program has been developed in accordance with the National Qualifications Framework and Professional Standards, according to the Dublin Descriptors and the European Qualifications Framework. The typical duration of the Bachelor's degree program is 4 years.

A total of 62 subjects are studied in the OP. The total number of OOD is 56 (including the mandatory component OK-51); DB – 176 (including universities -97, KV-58), PD total – 21 (including universities – 3), professional practices – 2.

OP 6B01514 Physics (IP) was developed by the Academic Committee.
(OP code and name)

Reviewed at a meeting of the Academic Quality Commission of the Higher School of Physical and Mathematical Sciences
(Protocol No.3 «09» January 2024.)

Approved at the meeting of the Academic Council of the University (Protocol No. 6/1 «19» January 2024.)

The main criterion for the completion of the educational process is the development of at least 240 credits, with the award of a bachelor's degree.

2.2 Information about students

Academic year / The basis of learning	2024-2025 academic year	2025-2026 academic year	2026-2027 academic year	2027-2028 academic year
Grant	30	32	35	36
Contract	1	4	5	6
Total	31	38	40	42

Applicants for OP training can be applicants who have scored more than 75 points.

2.3 Internal and external conditions of OP development

There is a high demand for graduates of the OP.

In order to improve the quality of education, as well as the number of bases for students undergoing pedagogical practice, is increasing every year. For the same purpose, contracts have been concluded with the №7 Lyceum school. Next year, it is planned to conclude contracts with schools №27.

According to the OP "6B01514 – Physics (IP)" according to the program of internal academic mobility for students in physics at the Higher School of Economics named after S. Amanzholov (Ust-Kamenogorsk). In the future, it is planned to establish relations with Zhetysu University named after I. Zhansugurov (Taldykorgan), PSU named after Alkey Margulan (Pavlodar).According to the program of external academic mobility, students of the OP have the opportunity to study at the University named after Jan Amos Komensky (Leszno, Poland).

The fund of the university's scientific library is provided with textbooks, teaching aids, and electronic textbooks on the educational program.

2.4 Information about teaching staff implementing the educational program

№	Indicators	unit/ meas.	2024-2025 academic year	2025-2026 academic year	2026-2027 academic year	2027-2028 academic year
1	The share of teaching staff with an academic degree in OP	%	49	50	51	53
2	Including the share of teaching staff with a degree in the OOD cycle	%	62	63	65	66

2.5 Characteristics of the achievements of the OP

Training of worthy holders of the scholarship of the President of the Republic of Kazakhstan from among the students of the OP.

Work on improving the knowledge of students under the program of external academic mobility in foreign universities. Increasing the activity of students of the OP "6B01514 Physics (IP)" according to the program of internal academic mobility.

Replenishment of the OP with the necessary disciplines, taking into account the proposals of employers.

Improving the research work of students and teaching staff involved in scientific Start-Up projects, work on scientific research. Training of students participating in the subject Olympiad among students of republican universities in their specialty.

An increase in the number of scientific papers indexed by the scientometric databases Web of Science and Scopus.

Participation in the National ranking of Higher Education institutions of the Republic of Kazakhstan, conducted by the National Chamber of Entrepreneurs "Atameken".

Increasing the number of branches of the department in order to improve the quality of education, work closely with schools and expand the base of professional practice.

Development and implementation of a plan for the preparation of textbooks, teaching aids, methodological guidelines and electronic textbooks on OP.

3. The main objectives of the OP development plan

The main purpose of the OP is to train highly qualified teaching staff in physics with social and civic responsibility, capable of carrying out professional activities in the following areas: education and formation of a comprehensively developed student's personality; formation of systematized knowledge in the field of physics; organization of the pedagogical process in physics within the framework of the updated educational content.

The main criterion for completing the educational process "Physics Teacher" is the mastering by students of bachelor's degree 205 credits of theoretical training, as well as 27 credits of practice (other types of educational / scientific work), 8 credits for preparation or passing a comprehensive exam. There are 240 credits in total.

4. Risk analysis of OP

№	Name of risks	Elimination measures
1	Decrease in the number of students enrolled in the OP	Attracting students on a contractual basis due to a decrease in the number of students enrolled in the OP
2	Insufficient knowledge of the language for the introduction of trilingual education	Replenishment of the staff of teaching staff who are fluent in three languages, and organization of language courses for students
3	Decrease in the level of employment	Широкая организация мероприятий с работодателями
4	Insufficient development of external and internal academic mobility of students and teaching staff	Wide organization of events with employers
5	The risk of reducing the stability of the PPP in the PLO	Referral of young specialists for targeted PhD training. Participation in competitions announced by the Ministry of Science and Higher Education Work on the publication of scientific work on the basis of "Web of science" and "Scopus". Activation of advanced training of faculty of the department in foreign universities and research institutes

5. Action plan for the development of the OP

№	Criteria	Expected results	unit/ meas.	2024-2025	2025-2026	2026-2027	2027-2028
Direction 1. Educational and methodological support							

1.1	Updating the educational program based on professional standards, taking into account the recommendations of employers	Conducting an examination of the Educational program "6B01504-"Physics"" in order to increase the practice orientation and development of professional competencies of graduates	fact	+	+	+	+
1.2	Monitoring and updating catalogs of elective disciplines in accordance with the development of key and professional competencies, and the demands of the labor market	Improving the quality of the content of educational programs by including elective courses aimed at developing key and professional competencies of graduates in accordance with the demands of the labor market.	fact	+	+	+	+
1.3	The introduction of modern learning technologies into the educational process that contribute to the development of cognitive activity and the communicative ability of students	Improving the quality of teaching academic disciplines, taking into account the novelty and variety of forms of work that contribute to the development of cognitive activity.	fact	+	+	+	+
1.3.1	Introduction of mass open online courses (MOOCs) into the educational process according to the educational program 6B01504-"Physics"	The introduction of disciplines into the educational process is to improve the quality of teaching academic disciplines, taking into account the novelty and variety of forms of work that contribute to the development of cognitive activity.	unit	-	1	1	1
1.4	Involvement of social partners and employers in the development and examination of the implementation of educational programs	Improving the quality of educational programs implemented, taking into account market demands and recommendations from employers	unit	1	1	1	2
1.5	Development and implementation of elective courses in English	The introduction of disciplines in English into the educational process	unit	-	-	-	-
1.6	Conducting seminars and round tables on the application of innovative technologies in the educational process	The introduction of innovative technologies in the educational process	unit	-	1	1	2

1.7	Publication of educational, methodical and scientific literature on the implemented OP	Improvement of educational and methodological support in the disciplines of the implemented educational programs	unit	1	1	1	2
1.8	Conclusion of agreements with foreign and domestic partner universities in order to develop academic exchange of students of all levels and teaching staff	Creation of a database of foreign and domestic partner universities for the development of academic exchange of students of all levels and teaching staff	unit	-	1	1	1
1.9	Inviting students from partner universities to study for a semester, short-term internships, internships, etc.	Inviting students from partner universities to study for a semester, short-term internships, internships, etc.	human	1	1	1	1
1.10	Participation of teaching staff and students in international academic exchange programs	Development of international cooperation with foreign universities implementing educational programs in the direction 6B015 - Teacher training in natural science subjects	human	1	1	1	1
1.11	Development of outgoing academic mobility of teaching staff and students in the direction 6B01504-"Physics"	Improving the educational program based on the experience of implementing such programs in leading foreign universities	human	-	-	1	1
Direction 2. Teaching staff							
2.1	Professional development and training of scientific and pedagogical personnel for the implementation of educational programs once every 5 years	The share of teaching staff who have completed advanced training at the national and international levels is at least 20%	human	2	3	4	4
2.2	Advanced training, retraining, internships of teaching staff at the international level	Completion of at least 2 teachers of the advanced training program, retraining, internships of teaching staff at the international level	human	1	1	1	1

2.3	Promotion of publications of the works of the Faculty in international publications indexed by the Web of Science and Scopus databases	An increase in the share of teaching staff who have published the results of scientific research in publications indexed by the Web of Science and Scopus databases – at least 30% of the total number of teaching staff	%	10	10	10	15
2.4	Involvement of practical specialists in teaching and scientific activities	Participation of practitioners in the implementation of educational programs (at least 20% of specialists)	%	20	20	20	20
Direction 3. Internationalization of educational programs							
3.1	Organization of joint scientific and practical events with international partners	Improving the effectiveness of scientific and methodological activities of teaching staff, exchange of experience with foreign partners	unit	-	-	1	1
Direction 4. Logistics and digitalization							
4.1	Step-by-step equipment of classrooms with technical training tools (projectors, panels, interactive and multimedia whiteboards, multifunction devices, webcam, projector screen, etc.)	Equipping classrooms assigned to the department with technical training tools (projectors, panels, interactive and multimedia whiteboards, multifunction devices, webcam, projector screen, etc.)	unit	2	3	3	3
4.2	Automation of the educational process (testing, session management, student body movement, dean's office, department, teaching staff workload, schedule, library, syllabuses)	Information management based on automation of the educational process (testing, session management, student body movement, dean's office, department, teaching staff workload, schedule, library, syllabuses)	fact	+	+	+	+
4.3	Replenishment of the full-text database of research results of teaching staff and students, teaching staff (articles, monographs, etc.)	An increase in the number of results of scientific works of scientists, research of teaching staff and students, teaching staff (articles, monographs, etc.)	unit	19	20	22	25
4.4	Expansion of the fund of scientific and educational literature, including on electronic media for ongoing educational programs	Ensuring the implementation of educational programs based on modern educational and information resources, including on electronic media	%	50	50	65	70

4.5	Monitoring the content and improvement of the faculty's website	The formation of the faculty's website on various aspects of the implementation of educational programs.	%	50	50	65	70

Head of the Department _____ **Kenbayev D.**

REVIEWED
At a meeting of the Academic Quality Commission
Chairman of the Commission _____ Zheldybayeva B.S.
Protocol No.6 «06» June 2024

Agreed
Dean of the Higher School _____ Ospanova D.M.
«06» June 2024y.