NJSC SHAKARIM UNIVERSITY OF SEMEY

EDUCATIONAL PROGRAM

7M01 - Pedagogical sciences
(Code and classification of the field of education)

7M015 - Teacher training in natural science subjects
(Code and classification of the direction of training)

0114
(Code in the International Standard Classification of Education)

M011 - Training of physics teachers (kazakh, russian, english language)
(Code and classification of the educational program group)

7M01502 - Physics
(Code and name of the educational program)

Master
(Level of preparation)

Semey

Educational program

7M01 -- Pedagogical sciences
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7M015 - Training of teachers in Natural science subjects
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Semey 2024

PREFACE

Developed

The educational program 7M01502 - Physics in the direction of preparation 7M015 - 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 Faculty
Educational program manager	Zheldybayeva Balgyn	Senior Lecturer, Department of Physics, Ph.D.
Member of the AC	Kenbayev Dauyrzhan	Master of the Department of Physics and Informatics
Member of the AC	Bakhtina Togzhan	Master of the Department of Physics and Informatics
Member of the AC	Takirova Tolkun	Master of the Department of Physics and Informatics
Member of the AC	Sataeva Aigul	Director of the city of Semey "Secondary school No.16"
Member of the AC	Omarova Kenzhegul	Physics teacher at Secondary School No.25.
Member of the AC	Sumbembayeva Saltanat	Masters student OP 7M01502-Physics
Member of the AC	Rakymbekova Zhanerke	Masters student OP 7M01502-Physics

Reviewing

Full name of the reviewer	Position, place of work
Kuanychbayeva Aizhan	Director of the city of Semey "Secondary school No40"
Burkenov Narken	Director of the branch "Nazarbayev Intellectual Schools" in the city of Semey

Reviewed

At a meeting of the Academic Quality Commission of the Faculty Graduate School of Physical and Mathematical Sciences
Protocol No3 "09" _01_ 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

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

Educational program 7M01502 Physics, implemented by Shakarim University of Semey, Department of Physics and Informatics of the Faculty Higher School of Physical and Mathematical Sciences, was developed in accordance with the Professional Standard “Teacher” No. 133 of 2022, level - 7, State Educational Standard of the Republic of Kazakhstan No. 604 of 2022 (Order of the Ministry of Education and Science of the Republic of Kazakhstan No. 569 of 2022) taking into account the needs of the regional labor market, the requirements of regulatory documents of the Ministry of Science of Higher Education of the Republic of Kazakhstan and represents a system of documents for organizing the educational process.

The educational program regulates the goals, expected results, content, conditions and technologies for the implementation of the educational process, assessment of the quality of the graduate’s training in this area of training and contains characteristics of the program and areas of the graduates professional activity, learning outcomes and acquired competencies, policies for assessing learning outcomes, organization of the educational process, ensuring the quality of training for students, a description of the modules that make up the educational program, teaching materials that ensure the implementation of appropriate educational technologies.

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 for the preparation of masters of the scientific and pedagogical direction is the development of at least 88 credits of theoretical training, including 6 credits of pedagogical practice, 13 credits of research practice, as well as at least 24 credits of research work of a master`s student, including internships and the completion of a master`s thesis, at least 8 credits of the final attestations . A total of 120 credits

1.3.Typical study duration: 2 year

2.PASSPORT OF THE EDUCATIONAL PROGRAM

2.1.EP purpose	Training of highly qualified teaching staff in physics, with social and civic esponsibility, able to carry out professional activities in the following areas: education and the formation of a fully developed personality of the student; the formation of systematic knowledge in the field of physics; the organization of the pedagogical process in physics within the updated content of education.
2.2.Map of the training profile within the educational program	
Code and classification of the field of education	7M01 - Pedagogical sciences
Code and classification of the direction of training	7M015 - Training of teachers in Natural science subjects
Code in the International Standard Classification of Education	0114
Code and classification of the educational program group	M011 - Training of physics teachers (kazakh, russian, english language)
Code and name of the educational program	7M01502 - Physics
2.3.Distinctive features of the OP (double degree/joint, OVPO-partner, Double major, innovative)	-
2.4.Qualification characteristics of the graduate	
Degree awarded / qualification	Master of Pedagogical Sciences under the educational program 7M01502 -Physics
Name of professional standard	1 Professional standard: Teacher (faculty) of higher and (or) postgraduate education organizations 2 Teacher
Atlas of new professions	-
Regional standard	-
Name of the profession / list of positions of a specialist	Teacher of physics in educational institutions
OQF qualification level (industry qualification framework)	7
Area of professional activity	Education and development of children and students in general education organizations, educational institutions and centers; science; organizations, institutions and enterprises.
Object of professional activity	•activities implemented in the following areas: education and formation of a comprehensively developed personality, improvement of knowledge in the field of physics, organization of the educational process at the modern scientific level, implementation of scientific research and production activities.
Types of professional activity	- educational (pedagogical); - scientific research; - organizational and technological; - production and management.
2.5.Graduate Model	7M01502- Competencies that contribute to the achievement of the goals and objectives of the educational program in the specialty of Physics: - General cultural - professional,

	- Subject. 7M01502-Physics specialty, as a result of mastering the master s degree, the graduate should have the following competencies: 2.1 General cultural competences (CG): 2.1.1 - study of the ability to improve and develop the philosophical and methodological foundations of pedagogical culture; 2.1.2 - the ability to generalize, analyze, accept, set goals and choose ways to achieve scientific information, the ability to create logically correct, logical and clear oral and written speech according to the situation, the language and the required foreign language; 2.1.3 - understanding the social importance of one s future profession, having a high desire to perform professional-pedagogical activities; 2.1.4- knowledge of the system of standards in the field of nature protection and efficient use of natural resources, the system of labor safety standards; 2.1.5 - to know one s rights and obligations as a citizen of the Republic of Kazakhstan, to be ready to use the current legislation, other legal documents in one s service; 2.1.6 - willingness to communicate with colleagues, work in a team, find organizational and management solutions in non-standard situations and bear responsibility for them; 2.1.7 - preparation for formation of active citizenship, social responsibility, sense of patriotism, high morality and leadership qualities among young people. 2.2 Professional competences: 2.2.1 - preparing for the use of modern models of training (traditional, innovative, etc.) and designing the learning process in the educational institution, enabling the functioning of the lifelong learning system; 2.2.2 - the ability to develop the means of introducing information and communication technologies for teaching and the development of educational independence, creativity and research activity that allows them to meet the purpose of education, the age and personal characteristics of students; 2.2.3 - to be ready to introduce innovations in ones professional field and to develop a selection methodology and a mechanism to introduce the selected educational content into the educational process; 2.2.4 - the possibility of organizing a unified educational process at the educational institution; effective use of learning technologies to achieve the goals and skills of the organization, individual and collective learning activity of students; 2.2.5 - the need to improve professional-pedagogical activities on a scientific basis, to organize one s work, to conduct training-methodological, scientific-technical documentation, to collect, store and process information; 2.2.6 - educational process of readiness to use modern diagnostic technologies and quality

	management system for assessment; 2.2.7 - to be able to understand the laws of formation and development of scientific knowledge as a cultural phenomenon; 2.2.8 - a modern paradigm of education that can connect new conceptual ideas and directions of development of pedagogical science; 2.2.9 - pedagogic science capable of understanding the main categories of science, which allows the analysis of modern problems; 2.2.10 - owns the scientific research methodology; 2.2.11 - in the process of scientific research in the field, education can distinguish general, individual and special aspects; 2.2.12- studies in pedagogy that can understand the connection of scientific methodological, theoretical and applied levels; 2.2.13 - can connect the main scientific concepts of pedagogy with the general problems of science and society development. 2.3 Subject Competencies (PC): 2.3.1- to know the main physical concepts, laws, theories and the history of their emergence and development, to depict the scientific and physical pictures of the world and the current trends in the development of physics; 2.3.2 - the ability to solve scientific and applied physical problems that implement statistical calculations, process experimental results, implement physical and numerical modeling of properties of objects and technological processes; 2.3.3 - mastering the theory and system of physics teaching methodology, developing cognitive interest, forming students motives for physics and technology and teaching physics; 2.3.4 - technical design, creation and use of laboratory and demonstration facilities, physical education for solving educational and methodological problems; 2.3.5 - the ability to analyze the results of scientific and methodical research, distinguish generalization methods and use them in solving specific study and research problems; 2.3.6 - readiness to use personal creative abilities for original solutions

3.Modules and content of the educational program

Sociolinguistic and scientific-pedagogical activity

Brief description of the module content

Writing and defending aPromotes the formation of sociolinguistic competence and the application of fundamental scientific, pedagogical, managerial, communication knowledge and skills in professional activities. master`s thesis.

Module disciplines

Foreign language (professional)

History and philosophy of science

Higher Education Pedagogy

Psychology of management

Vocational training

Brief description of the module content

Collection, description, analysis, generalization and assimilation of facts of methodological activity in scientific research. Study the methodology of writing a scientific paper, research methods in teaching physics. Studying the essence of physical theories, laws, phenomena and processes. Forecasting attitudes towards the physical environment, worldview, phenomena and processes. Approval of directions and forms of practical application of acquired physical and scientific knowledge.

Module disciplines

Study of crystal modification issues

Using elements of folk pedagogy in physics at secondary school

Methods of teaching physics with elements of folk pedagog

Modification of crystals in solid state physics

Classical and quantum theory of motion of charged particles and radiation

Relativistic quantum theory of particle motion and radiation

Theory of electronic devices with curvilinear bunches

Physics of semiconductors and their applications

Methods of teaching physics with elements of folk pedagogy

Actual problems of modern physics

Research activities of students in the study of physic

Physical concept formation technique

The research work of a student, including an internship and the implementation of a masters thesis I

Credit technology in teaching physics

Equilibrium properties of substances

Modern methods of teaching general physics course

Heat engines and their applications

Thermodynamic phenomena in animate and inanimate nature

Level of fundamental and professional training

Brief description of the module content

Has the ability to collect and analyze scientific knowledge in the field of modern physics, collect and analyze the results obtained. Mastered the basics of modern research methods in the field of physical theories, laws, phenomena, and teaching problems. Students can demonstrate their knowledge of the worldview as a holistic system that interacts with the environment and regulates nature through physical mechanisms. Taking into account the basic strategies for restoring physical diversity, its conservation, ensuring sustainable human interaction with the natural environment and the environment.

Module disciplines

Pedagogical practice

Methods of teaching physics using new technologies

The methodof forming fungdamentalnyh conceptsin solvingphysics problems

The problems of maintaining updated physics in the educational system of higher education

Ways to use learning technologies in physics

The content of the renewed physics in the educational system of higher education

Interaction of neutrons with matter

Sources of radiation

Methodology of decision of olimpiad tasks on physics

Methodology of decision of experimental tasks on physics

Methods of teaching content of updated content in the secondary education system

The mechanism of formation of radiating defects in firm bodies

The research work of a student, including an internship and the implementation of a masters thesis II

New educational technologies in the process of teaching physics

Practice research

The research work of a student, including an internship and the implementation of a masters thesis III

Final examination

Brief description of the module content

Writing and defending a master`s thesis

Module disciplines

Master`s dissertation

4.Summary table on the scope of the educational program

«7M01502 - Physics»

Name of discipline	Cycle/ Component	Term	Number of credits	Total hours	Lec	SPL	LC	IWST	IWS	Knowledge control form
Sociolinguistic and scientific-pedagogical activity										
Foreign language (professional)	BS/US	1	3	90		30		20	40	Examination
History and philosophy of science	BS/US	1	5	150	15	30		35	70	Examination
Higher Education Pedagogy	BS/US	1	3	90	15	15		20	40	Examination
Psychology of management	BS/US	1	3	90	15	15		20	40	Examination
Vocational training										
Study of crystal modification issues	BS/CCh	1	5	150	15	30		35	70	Examination
Using elements of folk pedagogy in physics at secondary school	BS/CCh	1	5	150	15	30		35	70	Examination
Methods of teaching physics with elements of folk pedagog	BS/CCh	1	5	150	15	30		35	70	Examination
Modification of crystals in solid state physics	BS/CCh	1	5	150	15	30		35	70	Examination
Classical and quantum theory of motion of charged particles and radiation	BS/CCh	1	5	150	15	30		35	70	Examination
Relativistic quantum theory of particle motion and radiation	BS/CCh	1	5	150	15	30		35	70	Examination
Theory of electronic devices with curvilinear bunches	BS/CCh	1	5	150	15	30		35	70	Examination
Physics of semiconductors and their applications	BS/CCh	1	5	150	15	30		35	70	Examination
Methods of teaching physics with elements of folk pedagogy	BS/CCh	1	5	150	15	30		35	70	Examination
Actual problems of modern physics	AS/US	2	5	150	15	30		35	70	Examination
Research activities of students in the study of physic	AS/US	2	5	150		15	30	35	70	Examination
Physical concept formation technique	AS/CCh	2	5	150	15	30		35	70	Examination
The research work of a student, including an internship and the implementation of a masters thesis I	AS/US	2	11	330						Total mark on practice
Credit technology in teaching physics	AS/CCh	2	5	150	15	30		35	70	Examination
Equilibrium properties of substances	AS/CCh	2	5	150	15	30		35	70	Examination
Modern methods of teaching general physics course	AS/CCh	2	5	150	15	30		35	70	Examination
Heat engines and their applications	AS/CCh	2	5	150	15	30		35	70	Examination
Thermodynamic phenomena in animate and inanimate nature	AS/CCh	2	5	150	15	30		35	70	Examination
Level of fundamental and professional training										
Pedagogical practice	BS/US	3	6	180						Total mark on practice
Methods of teaching physics using new technologies	AS/CCh	3	5	150	15	30		35	70	Examination
The methodof forming fungdamentalnyh conceptsin solvingphysics	AS/CCh	3	5	150	15	30		35	70	Examination

problems										
The problems of maintaining updated physics in the educational system of higher education	AS/CCh	3	5	150	15	30		35	70	Examination
Ways to use learning technologies in physics	AS/CCh	3	5	150	15	30		35	70	Examination
The content of the renewed physics in the educational system of higher education	AS/CCh	3	5	150	15	30		35	70	Examination
Interaction of neutrons with matter	AS/CCh	3	5	150	15	30		35	70	Examination
Sources of radiation	AS/CCh	3	5	150	15	30		35	70	Examination
Methodology of decision of olimpiad tasks on physics	AS/CCh	3	5	150	15	30		35	70	Examination
Methodology of decision of experimental tasks on physics	AS/CCh	3	5	150	15	30		35	70	Examination
Methods of teaching content of updated content in the secondary education system	AS/CCh	3	5	150	15	30		35	70	Examination
The mechanism of formation of radiating defects in firm bodies	AS/CCh	3	5	150	15	30		35	70	Examination
The research work of a student, including an internship and the implementation of a masters thesis II	AS/US	3	4	120						Total mark on practice
New educational technologies in the process of teaching physics	AS/CCh	3	5	150	15	30		35	70	Examination
Practice research	AS/US	4	13	390						Total mark on practice
The research work of a student, including an internship and the implementation of a masters thesis III	AS/US	4	9	270						Total mark on practice
Final examination										
Master`s dissertation		4	8	240						

Non -Profit Limited Company «Shakarim University of Semey»

DEVELOPMENT PLAN OF THE EDUCATIONAL PROGRAM

7M01502 - Physics
for 2024-2026

Semey 2024

Content

1. Passport of the Development Plan of the Bachelor's / Master's Program 7M01502-Physics

1	Basis for development	- "On approval of the Rules for organizing the educational process on credit technology of education" Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 12, 2018 No. 563. On amendments to the order of the Minister of Education and Science of the Republic of Kazakhstan dated April 20, 2011 No. 152; - "On approval of the Model Rules for the Activities of Educational Organizations of the Relevant Types" Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 30, 2018 No. 595; - Strategic development plan of Shakarim University for 2022 - 2025, approved by the Academic Council on September 24, 2020 protocol No. 2.
2	Implementation timeline	2024-2026 g.
3	Expected implementation results	Training of highly qualified physicists who ensure the implementation of pedagogical and research, expert-analytical, organizational and managerial activities and the formation of an intellectual elite for the educational, cultural and scientific sphere

2. Analytical substantiation of the EP

2.1 Information about the educational program

The educational program is developed in accordance with the National Qualifications Framework and professional standards, in accordance with the Dublin Descriptors and the European Qualifications Framework. The typical term for mastering the educational program of the master's program is 2 years.

OP "7M01502-Physics" was developed by the Academic Committee.

the degree of Master of Pedagogical Sciences in the educational program 7M01502-Physics.

The purpose of the educational program is to train competent personnel who own modern pedagogical technologies and teaching methods, capable of conducting scientific research, applying and implementing promising results of scientific research in the field of informatization of education.

2.2 Information about students

Academic year / Foundation of learning	2024-2025 academic year	2025-2026 academic year
Grant	10	10
Treaty	4	4
Total	14	14

2.3 Internal and external conditions for the development of EP

The educational program is aimed at studying the most modern achievements in pedagogy. Teachers implementing the educational program have the potential for development, that is, the desire for improvement and self-development through the integration of educational, scientific and innovative activities in their work. The teaching staff of the department systematically improves their qualifications through courses, classes of the scientific and methodological seminar of the department. The result of this is the use of various methods and forms in the learning process. The following teaching methods are widely used in the content of lectures and seminars:

- game methods (role-playing games, developing, business, reflective, imitation, etc.);
- brainstorm;
- collective cognitive activity;
- group work;

- video method;
- multimedia technology;
- round table;
- debate;
- problem-search method.

In the classroom, not only traditional forms of education are used, but also modern ones:

- integrated lecture;
- problematic lecture;
- lecture conversation;
- seminar-training.

For the implementation of the EP, pedagogical and research practice is organized and carried out in institutions, organizations with which contracts are concluded. The objects of research practice of students are secondary schools, lyceums: "NIS Semey", KSU "Secondary School No. 25" of the Department of Education of the City of Semey of the Department of Education of the Abay Region, KSU "Secondary School No. 30" of the Department of Education of the City of Semey of the Department of Education of the Abay Region .

The scientific internship of undergraduates is carried out in cooperation with the NJSC "VKU im. S. Amanzholov" and NAO "Pavlodar Pedagogical University" named after Alkey Margulan.

2.4 Information about the teaching staff implementing the educational program

№	Indicators	Unit of measurement	2024-2025 academic year	2025-2026 academic year
1	Share of teaching staff with a degree in EP	%	**82%**	**91%**
2	Including the share of teaching staff with a scientific degree in the BD/VK cycle	%	**91%**	**91%**

2.5 Characteristics of the achievements of the EP

The implementation of EP 7M01502-Physics is provided by scientific and pedagogical personnel with a higher basic education corresponding to the profile of the disciplines taught, and successfully engaged in scientific and scientific and methodological activities.

The educational process management system and the implementation of distance learning technologies are used by the AIS program. The university constantly conducts training seminars on the above IS.

For the implementation of the EP, professional practice is organized and conducted in institutions, organizations with which contracts are concluded. The objects of professional practice of students are general education schools, lyceums.

3. The main objectives of the EP development plan

For the effective implementation of the EP, the following tasks are defined:

- improving the training of undergraduates who own the methods and techniques of the main areas of activity in the professional field.
- updating the content of the EP, which forms the main professional competencies of future specialists;
- creation of prerequisites for independent research activities of the student.
- Improving the conditions for obtaining high-quality professional education.

The expected end results are:

- development of educational and educational-methodical literature;
- activity of teaching staff in terms of publications in rating publications with a non-zero impact factor;
- increasing the level of information and technical base;
- advanced training of teaching staff in the field of innovative learning technologies;
- demonstrate the formed worldview as the basis of readiness for professional activity;
- apply a variety of teaching methods;
- the implementation of psychological and pedagogical support, support, establishing contacts and interaction with other subjects of the educational process;
- ways of orienting in professional sources of information (magazines, websites, educational portals, etc.);

4. EP risk analysis

№	Name of risks	Measures to eliminate
1	Insufficient level of language knowledge for the introduction of trilingual education	Expansion of relations with foreign partners in order to implement joint scientific research and publish educational and methodological literature
2	Insufficient development of external and internal academic mobility of students and teaching staff	Implementation of academic mobility of students and teachers
3	The risk of reducing the degree of teaching staff for EP	Advanced training, degree of teaching staff through PhD doctoral studies, internships and the involvement of foreign teachers with academic degrees

5. Action plan for the development of the EP

№	Criteria	Expected Results	Unit of measurement	2024-2025	2025-2026
1.1	Updating the educational program based on professional standards, taking into account the recommendations of employers	Conducting an examination of the Educational Program "7M01502-Physics" in order to increase the practice orientation and develop the professional competencies of graduates	fact.	+	
1.2	Monitoring and updating catalogs of elective disciplines in accordance with the development of key and professional competencies, labor market demands	Improving the quality of the content of educational programs by including elective courses aimed at developing the key and professional competencies of graduates in accordance with the demands of the labor market.	fact.	+	
1.3	Introduction into the educational process of modern learning technologies that contribute to the development of cognitive activity, communicative ability of students	Improving the quality of teaching academic disciplines, taking into account the novelty and diversity of forms of work that contribute to the development of cognitive activity.	fact.	+	

1.3.1	Implementation of Massive Open Online Courses (MOOCs) in the educational process under the educational program "7M01502-Physics"	Introduction of disciplines into the educational process Improving the quality of teaching academic disciplines, taking into account the novelty and diversity of forms of work that contribute to the development of cognitive activity.	unit		1
1.4	Involvement of social partners and employers in the development, examination of the implementation of educational programs	Improving the quality of ongoing educational programs, taking into account market demands and employers' recommendations	unit	1	
1.5	Development and implementation of elective courses in English	Introduction to the educational process of disciplines in English	unit		1
1.6	Conducting seminars and round tables on the application of innovative technologies in the educational process	Implementation of innovative technologies in the educational process	unit	1	
1.7	Publication of educational, educational-methodical and scientific literature on implemented EPs	Improvement of educational and methodological support in the disciplines of ongoing educational programs	unit		1
1.8	Conclusion of agreements with foreign and domestic universities - partners in order to develop the academic exchange of students of all levels and teaching staff	Creation of a database of foreign and domestic universities - partners for the development of academic exchange of students of all levels and faculty	unit		1
1.9	Invitation of students from partner universities to study for a semester, short-term internships, practice, etc.	Development of international recognition of educational programs, implementation of academic mobility programs for students	human	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 "7M01502-Physics"	human		1
1.11	Development of outgoing academic mobility of teaching staff and students in the direction "7M01502-Physics"	Improving the educational program based on the use of experience in the implementation of similar programs in the leading universities of the Republic of Kazakhstan	human		1
Direction 2. Teaching staff					
2.1	Raising the professional level and training of scientific and pedagogical personnel for the implementation of educational programs once every 5 years	Доля ППС, прошедших повышение квалификации на республиканском уровне не менее 20%	human	1	
2.2	Passage of advanced training, retraining, internships of teaching staff at the international level	Passage of at least 2 teachers of the advanced training program, retraining, internship of teaching staff at the international level	human		1
2.3	Promotion of publications of the teaching staff's works in international publications indexed by the Web of Science and Scopus databases	Increase in the share of teaching staff who 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	%	5	5
Direction 3. Internationalization of educational programs					
3.1	Conclusion of agreements on international cooperation with foreign universities	Implementation of joint projects, preparation of scientific publications with foreign partners, creation of bases for scientific internships for students	unit		1

3.2	Attracting foreign students to study under the educational program "7M01502-Physics"	Increasing the number of foreign students	human		1
3.3	Organization of joint scientific and practical events with international partners	Increasing the efficiency of scientific and scientific-methodical activities of teaching staff, exchange of experience with foreign partners	unit		1
3.4	Invitation of foreign experts for lectures and consultations on master's projects and dissertations	Improving the content component of educational programs based on the introduction of the experience of foreign specialists in the implementation of educational programs	unit		1
3.5	Expansion of cooperation with leading foreign scientific and educational organizations in order to attract the most qualified foreign specialists to the implementation of educational programs	Formation of key and professional competencies in accordance with the practice of leading universities	human		1
Direction 4. Logistics and digitalization					
4.1	Stage-by-stage equipping of classrooms with technical teaching aids (projectors, panels, interactive and multimedia boards, multifunctional devices, webcam, projector screen, etc.)	Equipping classrooms assigned to the department with technical teaching aids (projectors, panels, interactive and multimedia boards, multifunctional devices, webcam, projector screen, etc.)	unit	1	
4.2	Carrying out automation of the educational process (testing, session management, movement of the undergraduate contingent, dean's office, department, teaching staff load, schedule, library, syllabuses)	Information management based on the automation of the educational process (testing, session management, movement of undergraduates, dean's office, department, teaching staff load, schedule, library, syllabuses)	fact.	+	

4.3	Replenishment of the full-text database of the results of scientific research 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		1
4.4	Expansion of the fund of scientific and educational literature, including on electronic media on ongoing educational programs	Ensuring the implementation of educational programs based on modern educational and information resources, including on electronic media	%		5
4.5	Monitoring the filling and improvement of the faculty website	Formation of the website of the faculty on various aspects of the implementation of educational programs.	%	100	100

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

CONSIDERED
at a meeting of the Commission for Quality Assurance of the Natural and Mathematical Faculty
Minutes of the meeting No. 6 dated 06.06.2024
Chairman of KOC _____ Zheldybayeva B.S.

AGREED

Dean of the school _____ D. Ospanova
June 06, 2024