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)

B009 - Math teacher training
(Code and classification of the educational program group)

6B01513 - Mathematics (IP)
(Code and name of the educational program)

Bachelor
(Level of preparation)

Semey

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Semey 2024

PREFACE

Developed

The educational program 6B01513 - Mathematics (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	Sakibayeva Sandugash	Senior lecturer
Member of the AC	Zholymbaev Oraltai	Associate Professor of the Department of Mathematics
Member of the AC	Berikkhanova Gulnaz	Associate Professor of the Department of Mathematics
Member of the AC	Mametreyeva Sana	Mathematics teacher of Nazarbayev Intellectual School of Physics and Mathematics in Semey
Member of the AC	Zhamalbayeva Zhuldyz	Mathematics teacher of KSU
Member of the AC	Yergaliyeva Aruzhan	Student of the M1-301 group
Member of the AC	Turysbekova Kuralay	Student of the M1-303 group

Reviewing

Full name of the reviewer	Position, place of work
Toktubaeva Gulfariza	Director of KSU Secondary School No. 49

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 the meeting of the Commission on Academic Quality
Recommended for approval by the Academic Council of the University
Protocol No. 6, dated June 6, 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

The educational program for the training of teaching staff has been developed in accordance with the professional standard of a teacher." OP "6B01513- Mathematics (IP)" is one of 30 innovative educational programs that are being implemented for a qualitative transformation into a Center of academic Excellence provided for under the state funding program, including STEAM technology for teacher training.

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 Mathematics Educational Program (OP) is a pedagogical education program for future teachers who want to specialize as a mathematics teacher (in schools, colleges, universities), in demand in modern society, who can quickly navigate constantly changing educational conditions and meets the requirements for a competitive teacher. The OP consists of a pedagogical component of 60 academic credits (including pedagogical practice), a mandatory component of 56 academic credits and a subject component of 124 academic credits (including final certification of 8 academic credits).

1.3.Typical study duration: 4 years

2.PASSPORT OF THE EDUCATIONAL PROGRAM

2.1.EP purpose	Training of future teachers who want to specialize as a mathematics teacher (in schools, colleges, universities), in demand in modern society, able to quickly navigate the constantly changing conditions in the field of education and meeting the requirements for a competitive teacher.
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	B009 - Math teacher training
Code and name of the educational program	6B01513 - Mathematics (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	Teacher. A high school teacher.
OQF qualification level (industry qualification framework)	6
Area of professional activity	Work in educational institutions (pedagogical colleges, gymnasiums, lyceums, colleges, special schools of mathematical profile), teaching mathematics at different levels of education, industrial production, etc. These areas of professional activity highlight the wide range of opportunities for graduates of the 6B01513-Mathematics (IP) program and help them navigate future employment.
Object of professional activity	research institutions; secondary schools and secondary vocational educational institutions; state educational authorities; organizations of various forms of ownership that use methods of teaching mathematics in their work.
Types of professional activity	1. Teachers of the school. 2. Teacher of the organization of technical and vocational, post-secondary education. 3. Teacher of additional education.
2.5.Graduate Model	- Professional, pedagogical and social responsibility; - Clarity of goals and value orientations; - Hard work, self-discipline, speech activity; - Emotional intelligence and emotional stability; - Practice-oriented and entrepreneurial skills; - Respect for historical and cultural heritage, tolerance; - Deep understanding of digital environments, new

	content awareness skills; - Multilingual; - Ability to interact constructively, adaptability to global challenges; - The ability to be a leader, to make independent decisions; - Creativity, the ability to create and creative social activity; - - The ability to continuous professional growth and self-development.

3.Modules and content of the educational program

1 module Historical and philosophical competencies

Brief description of the module content

The module is aimed at developing and deepening students` knowledge in the field of history and philosophy. As part of the module, students study key historical events, cultural and social processes, as well as the main philosophical concepts and movements that influenced the development of mankind

Module disciplines
Abaistudies

History of Kazakhstan

Philosophy

2module Socio-political knowledge (sociology, political science, cultural studies, psychology)

Brief description of the module content

The module covers key disciplines such as sociology, political science, cultural studies and psychology aimed at studying social structures, political processes and cultural phenomena. The purpose of this module is to provide students with a comprehensive understanding of the dynamics of society and the factors influencing its development.

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

3 module Instrumental and communication

Brief description of the module content

The module is aimed at developing the skills of effective communication and the use of modern tools for transmitting and processing information.

Module disciplines
Foreign language

Information and communication technology

Kazakh(Russian) language (1)

Foreign language

Kazakh(Russian) language (2)

4 module Health promotion

Brief description of the module content

The module is aimed at forming students` comprehensive understanding of health and methods of its maintenance and improvement.

Module disciplines
Physical Culture

Physical Culture

Physical Culture

Physical Culture

5 module Formation of interdisciplinary competencies

Brief description of the module content

The module is designed to develop students` skills and knowledge necessary to integrate various fields of knowledge and apply them to complex tasks. This module helps students understand how different disciplines interact with each other and how the integration of this knowledge can lead to a more holistic and in-depth understanding of the complex problems of our time.

Module disciplines
Advanced foreign language

6module Pedagogical competencies

Brief description of the module content

The module is aimed at developing the professional skills necessary for the effective implementation of the educational process.

Module disciplines

Age and physiological features of children s development

Education Science and Key Learning Theories

Psychology, interaction and communication in education

Complex analysis

Inclusive educational environment

Education Science and Key Learning Theories

Teaching Planning and Individualization of Learning

Module 7 The teacher as a reflective practitioner

Brief description of the module content

This module focuses on the methodological foundations of pedagogy and provides an understanding of how pedagogical research affects teaching practice. The module helps university students develop their reflection skills to become aware of themselves as teachers and develop their own teaching, as well as the ability to set new goals for pedagogical development in order to ensure lifelong learning. The module also examines the ethical aspects of the teacher`s work and their development.

Module disciplines

Pedagogical research

Pedagogical methods

Research, Development, and Innovation

8 module Mathematical problems and solutions in society

Brief description of the module content

The module is designed to study the application of mathematical methods and models in various aspects of public life.

Module disciplines

Linear algebra and analytic geometry

Theory of probability and mathematical statistics

Algebra and numbers theory

Plane and spatial geometric constructions

Foundations of geometry

Mathematic

Logics and discrete mathematics

Econometrics

Module 9 Mathematical thinking and teaching mathematics

Brief description of the module content

The module is aimed at developing students` mathematical thinking based on studying the history of mathematics and solving standard and non-standard mathematical problems. The study of the role and influence of mathematics and the evolution of the development of mathematics on the development of society and science in general. Consideration of current problems of modern teaching methods for solving mathematical problems and identification of their interests in this field. Determining the role and place of educational materials, including mathematical problems (historical problems, Olympiad problems, etc.) in teaching mathematics, instilling skills in their development for use in future professional activities.

Module disciplines

Elementary mathematics (algebra)

Elementary mathematics (geometry)

Mathematics teaching methods

Mathematical statements proof methods

Problem solving practicum: Trigonometry

Mathematically based teaching method

Algebra problem solving practicum

Problem solving practicum: Geometry

Mathematically based teaching method

Algebra problem solving practicum

Problem solving practicum: Geometry

Mathematics history

Olympiad problems methods solving

Mathematically based non-conventional methods

10 module Research and interdisciplinary connections

Brief description of the module content

The module is aimed at understanding the interdisciplinary connections of mathematics with other subjects, as well as at developing a research component in the field of professional interests of a future specialist. The formation of an understanding of the stages of the evolution of research in the field of mathematical education, the skills of organizing and conducting pedagogical research and the development of skills in organizing student learning based on the results of their own research. Integrating their knowledge in the field of mathematics-related disciplines into the planning and implementation of the educational process.

Module disciplines

Phenomena based mathematical disciplines teaching

Programming

Digital technologies in education

Lesson Study and Action Research

Physics

Basics of scientific research

Applied packages in mathematics learning

Design of learning resources in mathematics

Module 11 The nature of functions: cause and effect

Brief description of the module content

The module focuses on the ability of future teachers to produce new scientific results in the future and determine the global development of mathematics. Future teachers learn to apply the basic concepts, ideas and methods of mathematical analysis, as well as to carry out analogy, comparison, collection and processing of information in the current situation throughout their lives.

Module disciplines

Single variable differential calculus of functions

Single variable integral calculus of functions

Multivariable differential and integral calculus of functions of series

Differential equations

Complex analysis

Theory of series

Differential geometry

Mathematical model basis

Differential equations

Complex analysis

Theory of series

Module 12 The teacher as a facilitator of learning

Brief description of the module content

This module is aimed at transforming theoretical knowledge into practical skills through pedagogical practice during two training courses, as well as at forming a teacher`s professional identity that meets the requirements for the teaching profession today and in the future

Module disciplines

Training Practice

Teaching Practice

Innovation and Research in Education

Final certification

Brief description of the module content

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

Module disciplines

Comprehensive exam

Diploma work

4.Summary table on the scope of the educational program

«6B01513 - Mathematics (IP)»

Name of discipline	Cycle/ Component	Term	Number of credits	Total hours	Lec	SPL	LC	IWST	IWS	Knowledge control form
1 module Historical and philosophical competencies										
Abaistudies	BS/US	1	2	60	15	15		10	20	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
2module Socio-political knowledge (sociology, political science, cultural studies, psychology)										
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
3 module Instrumental and communication										
Foreign language	GER/CC	1	5	150		45		35	70	Examination
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
4 module Health promotion										
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
5 module Formation of interdisciplinary competencies										
Advanced foreign language	BS/CCh	6	4	120		36		28	56	Examination
6module Pedagogical competencies										
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
Complex analysis	BS/CCh	4	5	150	15	30		35	70	Examination

Inclusive educational environment	BS/US	5	4	120	15	30		25	50	Examination
Education Science and Key Learning Theories	BS/US	5	4	120	30	15		25	50	Examination
Teaching Planning and Individualization of Learning	BS/CCh	6	4	120	15	30		25	50	Examination
Module 7 The teacher as a reflective practitioner										
Pedagogical research	BS/US	4	5	150	30	15		35	70	Examination
Pedagogical methods	BS/US	6	6	180						Total mark on practice
Research, Development, and Innovation	BS/CCh	7	4	120	30	15		25	50	Examination
8 module Mathematical problems and solutions in society										
Linear algebra and analytic geometry	BS/CCh	2	6	180	30	30		40	80	Examination
Theory of probability and mathematical statistics	BS/CCh	3	6	180	30	30		40	80	Examination
Algebra and numbers theory	BS/CCh	4	5	150	15	30		35	70	Examination
Plane and spatial geometric constructions	BS/CCh	7	5	150	15	30		35	70	Examination
Foundations of geometry	BS/CCh	7	5	150	15	30		35	70	Examination
Mathematic	BS/CCh	7	5	150	15	30		35	70	Examination
Logics and discrete mathematics	BS/CCh	8	5	150	15	30		35	70	Examination
Econometrics	BS/CCh	8	5	150	15	30		35	70	Examination
Module 9 Mathematical thinking and teaching mathematics										
Elementary mathematics (algebra)	BS/CCh	1	4	120		45		25	50	Examination
Elementary mathematics (geometry)	BS/CCh	2	4	120		45		25	50	Examination
Mathematics teaching methods	BS/CCh	5	5	150	15	30		35	70	Examination
Mathematical statements proof methods	BS/CCh	5	4	120		45		25	50	Examination
Problem solving practicum: Trigonometry	BS/CCh	5	4	120		45		25	50	Examination
Mathematically based teaching method	BS/CCh	6	5	150	15	30		35	70	Examination
Algebra problem solving practicum	BS/CCh	6	5	150	15	30		35	70	Examination
Problem solving practicum: Geometry	BS/CCh	6	5	150	15	30		35	70	Examination
Mathematically based teaching method	BS/CCh	7	5	150	15	30		35	70	Examination
Algebra problem solving practicum	BS/CCh	7	5	150	15	30		35	70	Examination
Problem solving practicum: Geometry	BS/CCh	7	5	150	15	30		35	70	Examination
Mathematics history	AS/CCh	8	5	150		45		35	70	Examination
Olympiad problems methods solving	AS/CCh	8	5	150		45		35	70	Examination
Mathematically based non-conventional methods	AS/CCh	8	5	150		45		35	70	Examination
10 module Research and interdisciplinary connections										
Phenomena based mathematical disciplines teaching	AS/CCh	4	5	150	15		30	35	70	Examination

Programming	AS/CCh	4	5	150	15		30	35	70	Examination
Digital technologies in education	AS/CCh	5	5	150		45		35	70	Examination
Lesson Study and Action Research	AS/CCh	6	5	150	15	30		35	70	Examination
Physics	AS/CCh	6	5	150	15	30		35	70	Examination
Basics of scientific research	BS/CCh	7	5	150		45		35	70	Examination
Applied packages in mathematics learning	AS/CCh	7	4	120		45		25	50	Examination
Design of learning resources in mathematics	AS/CCh	7	4	120		45		25	50	Examination
Module 11 The nature of functions: cause and effect										
Single variable differential calculus of functions	BS/CCh	1	6	180	30	30		40	80	Examination
Single variable integral calculus of functions	BS/CCh	3	3	90	15	15		20	40	Examination
Multivariable differential and integral calculus of functions of series	BS/CCh	4	4	120	30	15		25	50	Examination
Differential equations	BS/CCh	5	5	150	15	30		35	70	Examination
Complex analysis	BS/CCh	5	5	150	15	30		35	70	Examination
Theory of series	BS/CCh	5	5	150	15	30		35	70	Examination
Differential geometry	BS/CCh	6	5	150	15	30		35	70	Examination
Mathematical model basis	BS/CCh	6	5	150	15	30		35	70	Examination
Differential equations	BS/CCh	8	5	150	15	30		35	70	Examination
Complex analysis	BS/CCh	8	5	150	15	30		35	70	Examination
Theory of series	BS/CCh	8	5	150	15	30		35	70	Examination
Module 12 The teacher as a facilitator of learning										
Training Practice	BS/US	2	2	60						Total mark on practice
Teaching Practice	BS/US	4	2	60						Total mark on practice
Innovation and Research in Education	AS/US	8	15	450						Total mark on practice
Final certification										
Comprehensive exam		8	8	240						
Diploma work		8	8	240						

NPJSC «Shakarim University of Semey»

6B01513 - «Mathematics (IP)»
Educational program development plan
for 2024-2028 years

Semey, 2024

Content

1. Passport of the educational program development plan 6B01513 - Mathematics

1	The basis for the development	Strategic Plan of Shakarim University for 2023-2029 School work plan
2	Terms of implementation	2024-2028
3	Expected results of implementation	- ensuring the quality of the implementation of educational programs, taking into account the individual needs of students; - professional development of teaching staff in the field of innovative learning technologies; - ensuring the career development and long-term competitiveness of university graduates; - participation of students and teaching staff in competitions, project implementation; - achieving a high level of digital maturity of students and teaching staff; - development and operation of joint educational programs by domestic and foreign universities; - ensuring the continuous professional development of teachers.

2. Analyticaljustificationofthe EP

2.1 Information abouttheeducationalprogram

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 period of mastering the bachelor's degree program is 4 years.

EP "6B01513 - Mathematics" was developed by the Academic Committee

Reviewed at the meeting of the Commission for Quality Assurance of the Faculty of Natural Sciences and Mathematics

Purpose of the EP: Training of future teachers who want to specialize as a mathematics teacher (in schools, colleges, universities), in demand in modern society, able to quickly navigate the constantly changing conditions in the field of education and meeting the requirements for a competitive teacher.

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 aboutstudents

Academic year / The basis of trainig	2024-2025	2025-2026	2026-2027	2027-2028
Grant	35	35	35	35

Contract	2	2	2	2
Total	37	37	37	37

The minimum score for admission to EP "6B01501 - Mathematics" is 75 points.

2.3 Internal and external conditions of EP development

Graduates of the EP, in addition to the schools of the region, are in great demand at the level of the region, the Republic.

In order to improve the quality, the range of practice bases has also been expanded, an agreement has been concluded with schools: №3, 32, 39, 27, 7, 16, 30, №47, 49, 23, 25, NIS FMB Semey, Shakarim high school. Next year, it is planned to conclude contracts with the schools of the districts.

Constant replenishment of the library's book fund.

2.4 Information about teaching staff implementing the educational program

№	Indicators	Units	2024-2025	2025-2026	2026-2027	2027-2028
1	The share of teaching staff with a degree in EP	%	50	50	53	53
2	Including the share of teaching staff with a degree in the general disciplines cycle	%	56	58	60	60

2.5 Characteristics of the achievement of the EP

Identify the holders of the Presidential Scholarship among the students of the EP.

Referral of students under the program of external academic mobility to study at universities of the near and far abroad. Referral of students under the internal academic mobility program to study at universities preparing EP 6P01501-Mathematics.

Taking into account the opinion of employers, making additions to the EP for the new academic year.

Participation of students and teaching staff in Start-Up projects, scientific research works. Participation in the regional, Republican, international Olympiad in the specialty.

Equipping classrooms with modern equipment.

Increase the number of scientific papers Web of the Science and Scopus.

Participation in the National ranking of EP universities of the Republic of Kazakhstan.

Increasing the number of branches of the department, in order to improve the quality of the EP, as well as to communicate with schools and expand the base of professional practice,.

Development and implementation of a plan for the preparation of textbooks, manuals, methodological guidelines and electronic textbooks on the EP

3. The main objectives of the EP development plan

Preparation of a highly professional competitive specialist in accordance with modern requirements, prepared for the work of mathematics teachers in secondary schools, gymnasiums, lyceums, colleges, as well as capable of creatively and professionally solving problems at a high scientific and practical level, possessing general cultural and professional competencies in the field of modern pedagogy.

4. EP riskanalysis

№	Name ofrisks	Measurestoeliminate
1	Insufficient level of language knowledge for the introduction of trilingual education	Conducting specialized courses, training seminars
2	Insufficient development of external and internal academic mobility of students and teaching staff	Close interaction with partner universities, explanatory work with students and teachers
3	The risk of a decrease in the settlement of Teaching staff by EP	Stimulating teaching staff to improve professional training, using the opportunities of a targeted PhD doctoral program

5.Action plan for the development of the EP

№	Criteria	Expected results	Units	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 "6B01513-mathematics" in order to improve 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, the demands of the labor market	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 of modern technologies into the educational process 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	Introduction of mass open online courses (MOOCs) in the educational process according to the educational program "6B01513-mathematics"	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	-	-	-	-
1.4	Involvement of social partners and employers in the development, examination of the implementation of educational programs	Improving the quality of implemented educational programs taking into account market demands and recommendations of employers	unit.	2	2	2	2
1.5	Development and implementation of elective courses in English	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	Introduction of innovative technologies in theeducational process	unit.	2	2	2	2
1.7	Publication of educational, methodical and scientific literature on the implemented EP	Improvement of educational and methodological support in the disciplines of the implemented educational programs	unit.	1	1	2	2
1.8	Conclusion of contracts 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
1.9	Inviting students from partner universities to study for a semester, short-term internships, internships, etc.	Development of international recognition of educational programs, implementation of academic mobility programs for students	p.	-	1	-	1
1.10	Participation of teaching staff and students in international programs academic exchange	Development of international cooperation with foreign universities implementing educational programs in the direction B009 – Teacher training in mathematics	p.	-	1	-	1

1.11	Development of outgoing academic mobility of teaching staff and students in the direction B009 – Teacher training in mathematics	Improvement of the educational program based on the use of the experience of implementing such programs in the leading universities of the Republic of Kazakhstan	p.	-	1	-	1
Direction 2. Teachings taff							
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 passed advanced training at the national level is at least 20%	p.	2	2	2	2
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	p.	-	1	-	1
2.3	Promotion of publications of the works of teaching staff in international publications indexed by the Web of Science and Scopus databases	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	%	30	30	30	30
2.4	Involvement of practical specialists in teaching and scientific activities	Participation in the implementation of educational programs of practitioners (at least 20% of specialists)	%	20	20	20	20
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 forscientific internships of students	unit	-	1	-	1
3.2	Attracting foreign students to study under the educational program "6B01513-Mathematics"	Increasing the number of foreign students	p.	-	-	-	-
3.3	Organization of joint scientific and practical events with international partners	Improving the efficiency 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 equipping 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, multifunctional devices, webcam, projector screen, etc.)	unit	-	1	-	1
4.2	Carrying out the automation of the educational process (testing, session management, student contingent movement, dean's office, department, teaching staff workload, schedule, library, syllabuses)	Information management based on the 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 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	15	20	25	30
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	%	50	50	60	65
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	%	50	60	65	70

Head of the department _____ **Mukhametov Eldos**

Reviewed
at the meeting of the Commission on Academic Quality
of the Higher School of Physical and Mathematical Sciences
Protocol No 6 of 06.06.2024
Chairman of the CQA _____ Zheldybayeva Balgyn

Agreed
Dean of the Higher School _____ Dinara Ospanova
06.06.2024