

Ministry of Sciences and Higher Education of the Republic of Kazakhstan
M. Auezov South Kazakhstan University

«APPI» ET
Acting Chairman of the Board-Rector
Nurmanbetov
03 2024 y.










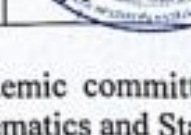
EDUCATIONAL PROGRAM

7M05410-Mathematics

Registration Number	7M05400003
Code and Classification of Education	7M05 Natural sciences, mathematics and statistics
Code and Classification of Areas of Training	7M054 Mathematics and Statistics
Group of educational programs (EP)	M092 Mathematics and Statistics
Type of EP	Acting EP
ISCE level	7
NQF level	7
IQF level	7
Language learning	Kazakh, Russian
The complexity of EP	120 credits
Distinctive features of EP	
Partner University (JEP) -	-
University partner (DDEP) -	-

Shymkent, 2024 y.

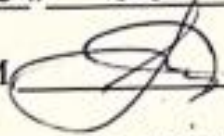
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The Educational Program was reviewed at a meeting of the Academic committee for quality assurance of Educational Programs in Natural Sciences, Mathematics and Statistics Minutes № 4 «23» 02 2024 y.

Chairman of the Committee  A. Tursynbaev

The Educational Program was considered and recommended for approval at Educational-methodical meeting of M. Auezov SKU, Minutes № 4 «28» 02 2024 y.

Chairman of the EMM  K. Sarykulov

The Educational Program was approved by the decision of the Academic Council of the University, Minutes № 10 «28» 03 2024 y.

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1. CONCEPT OF THE EDUCATIONAL PROGRAM

Mission of the University	We are focused on generating new competencies, training a leader who translates research thinking and culture.
University Values	<ul style="list-style-type: none"> - Openness - open to change, innovation and cooperation. - Creativity - generates ideas, develops them and turns them into values - Academic freedom - free to choose, develop and act. - Partnership - creates trust and support in a relationship where everyone wins. - Social responsibility - ready to fulfill obligations, make decisions and be responsible for their results.
Graduate Model	<ul style="list-style-type: none"> - Deep subject knowledge, their application and continuous expansion in professional activity - Information and digital literacy and mobility - Research skills, creativity and emotional intelligence - Entrepreneurship, independence and responsibility for their activities and well-being - Global and national citizenship, tolerance to cultures and languages
Uniqueness of the EP	<ul style="list-style-type: none"> - Orientation to the regional labor market and social order through the formation of professional competencies of the graduate, adjusted to the requirements of stakeholders - Practical orientation and emphasis on the development of critical thinking and entrepreneurship, the formation of a wide range of skills that will allow to be functionally literate and competitive in any life situation and be in demand in the labor market
Academic Integrity and Ethics Policy	<p>The university has taken measures to maintain academic integrity and academic freedom, protection from any type of intolerance and discrimination:</p> <ul style="list-style-type: none"> - Rules of academic integrity (order No. 212 of October 10, 2022); - Anti-corruption standard (order No. 221 n/a dated 12/07/2021). - Code of Ethics (Order No. 212 of October 10, 2022)
Regulatory and legal framework for the development of EP	<ol style="list-style-type: none"> 1. Law of the Republic of Kazakhstan “On Education”; 2. Model rules for the activities of educational organizations implementing educational programs of higher and (or) postgraduate education, approved by order of the Ministry of Education and Science of the Republic of Kazakhstan dated October 30, 2018 No. 595 with amendments and additions dated December 29, 2021. No. 614 3. Standard rules for admission to training in educational organizations implementing educational programs of higher and postgraduate education, approved by order of the Ministry of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 600 with amendments and additions dated 06/02/2023. No. 252 4. State mandatory standards for higher and postgraduate education, approved by order of the Ministry of Education and Science of July 20, 2022 No. 2; 5. Rules for organizing the educational process in credit technology of education, approved by order of the Ministry of Education and Science of the Republic of Kazakhstan dated April 20, 2011 No. 152; with changes and additions from 09/23/2022. No. 79 6. Qualification reference book for positions of managers, specialists and other employees, approved by order of the Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan dated December 30, 2020 No. 553. 7. Methodological recommendations for introducing ECTS principles into the educational process and expanding academic freedom. Appendix to the order of

	<p>the Minister of Science and Higher Education. of the Republic of Kazakhstan dated February 12, 2024 No. 57</p> <p>8. Guidelines for the development of educational programs for higher and postgraduate education, Appendix 1 to the order of the Director of the National Center for the Development of Higher Education of the Ministry of Education and Science of the Republic of Kazakhstan dated May 4, 2023 No. 601 n/k</p>
Organization of the educational process	<ul style="list-style-type: none"> – Implementation of the principles of the Bologna Process – Student-centered learning – Availability – Inclusivity
Quality assurance of EP	<ul style="list-style-type: none"> – Internal quality assurance system – Involvement of stakeholders in the development of the EP and its evaluation – Systematic monitoring – Updating the content (updating)
Requirements for applicants	<p>They are established in accordance with the Standard Rules for admission to training in educational organizations implementing educational programs of higher and postgraduate education by order of the Ministry of Education and Science of the Republic of Kazakhstan No. 600 dated October 31, 2018, with changes and additions dated June 2, 2023. No. 252</p>
Conditions for the implementation of educational programs (EP) for persons with disabilities and special educational needs(SSN)	<p>For students with SEN (special educational needs) and persons with disabilities (PSI), tactile PVC tiles, specially equipped toilets, a mnemonic diagram, and shower bars have been installed in educational buildings and student dormitories. Special parking spaces have been created. Crawler lift installed. There are desks for people with limited mobility (PLM), signs indicating the direction of movement, ramps. In the educational buildings (main building, building No. 8) there are 2 rooms with six working places adapted for users with disorders of the musculoskeletal system (DMS).For visually impaired users, the SARA™ CE Machine (2 pcs.) is available for scanning and reading books. The library website is adapted for the visually impaired. There is a special NVDA audio program with a service. The JIC website http://lib.ukgu.kz/ is open 24/7.</p> <p>An individual differentiated approach is provided for all types of classes and in the organization of the educational process.</p>

2. PASSPORT OF THE EDUCATIONAL PROGRAM

Purpose of the EP	Training in-demand scientific and pedagogical personnel in the direction of «Mathematics» to meet the needs of science, education and production in mathematics.
Tasks of the EP	<ul style="list-style-type: none"> -providing conditions for acquiring a high intellectual level of development, mastering logical and critical thinking, systematic theoretical knowledge and practical skills in fundamental and relevant areas of mathematics; -development of the ability to use acquired knowledge in professional activities, scientifically prove and defend their opinions, independently solve tasks at the modern level in their professional activities; - development of self-study skills and continuous professional development throughout their professional activities, which will allow masters to successfully adapt to changing conditions; -formation of the competitiveness of graduates in the relevant areas of mathematics, pedagogy and psychology for the system of secondary, higher and postgraduate education and the scientific sphere, to ensure the possibility of rapid employment in the specialty or continuing studies in doctoral studies. -Establishing conditions for the development of in-demand knowledge and skills, as well as a conscious attitude towards enhancing the welfare of society and conserving the planet within the framework of the SDGs
Harmonization of EP	<ul style="list-style-type: none"> • 7th level of the National Qualifications Framework of the Republic of Kazakhstan; • Dublin descriptors of the 7th level of qualification; • 2 cycle of a Framework for Qualification of the European Higher Education Area); • 7th Level of European Qualification Framework for Life long Learning).
Connection of EP with the professional sphere	Professional standard: Teacher (faculty) of higher and (or) postgraduate education organizations. Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated November 20, 2023 No. 591.
Name of the degree awarded	After the successful completion of this Educational Program, the graduate is awarded the degree of Master of Natural Sciences of 7M05410-Mathematics.
List of qualifications and positions	<ul style="list-style-type: none"> -specialist, leading specialist, leading mathematician; -head of the scientific group in research institutes and laboratories and computer centers; in centers using modern computer technologies, -specialist, leading specialist in management organizations -mathematician-programmer, mathematician-economist, mathematician-actuary in organizational and managerial structures; -mathematician-analyst -statistics -teaching assistant at the university, methodologist of the Department of Education
Field of professional activity	<ul style="list-style-type: none"> - mathematics; -actuarial mathematics; -mathematics and applied mathematics; -mathematics and system programming; -mathematical and computer modeling; -financial, economic, managerial, educational activities
Objects of professional activity	<ul style="list-style-type: none"> -research activities (works) in institutes and laboratories; -work at enterprises and associations in order to ensure production and technological processes, production and management processes at firms and companies;

	<ul style="list-style-type: none"> -state institutions, organizations of all forms of ownership -educational organizations
Subjects of professional activity	<ul style="list-style-type: none"> -research work in areas related to the use of mathematics; - development of a mathematical model of processes and phenomena in the field of natural sciences, engineering; -practical experiments of the computational process; -computer and computing technology; -mathematical economics; -actuarial mathematics; - statistical accounting
Types of professional activity	<ul style="list-style-type: none"> -research, as researchers in research institutes, laboratories and computing centers and in centers using modern computer technologies; -design, experimental; -organizational, technological, production and management, as heads of departments and laboratories of the above profiles; -educational (pedagogical) as teachers of mathematics in schools, secondary and higher educational institutions of state and non-state profile; -predictive, mathematical and economic; - organization and conduct of statistical observations
Learning outcomes	<p>LO1-To argue their position in the Kazakh, Russian and foreign languages, to use a professional foreign language in the discussion of current topics of mathematics, in the writing of scientific articles.</p> <p>LO2-Analyze the main ideological and methodological problems, including interdisciplinary in nature, arising in science at the present stage of its development, to evaluate various facts and phenomena, based on the provisions and categories of psychology, philosophy of science and on the basis of scientific and pedagogical research.</p> <p>LO3-To solve the problems of research by mathematical methods, using the knowledge in the field of pedagogy, psychology, mathematics and methods of teaching mathematics.</p> <p>LO4- Carries out research activities, ensures the improvement of the quality of educational and methodological materials.</p> <p>LO5-Integrate the knowledge gained in different disciplines, use them to solve scientific, analytical and management problems in new unfamiliar conditions.</p> <p>LO6-To study the problems in various fields of mathematics, to use modern means of dissemination of scientific information, to use information technology for the analysis of understanding, processing and presentation of the results of their own research.</p> <p>LO7-To develop mathematical models and to apply knowledge, skills and abilities to solve problems in the branches connected with mathematics, independently to carry out computational, mathematical, experimental researches, to prove results when discussing with experts with wider audience.</p> <p>LO8-To develop ideas about the main ideas and methods of teaching mathematics and their connection with the surrounding reality, to summarize the results of experimental research and analytical work in the form of a master's thesis, article, report, analytical note, etc.</p> <p>LO9-To rank the use of modern models of education (traditional, innovative, etc.) and the design of the educational process in the profile school, College and University.</p> <p>LO10-To reveal the scientific essence of the problems in the field of fundamental disciplines in the specialty for solving theoretical and scientific-practical mathematical problems.</p>

3. COMPETENCIES OF THE EDUCATIONAL PROGRAM GRADUATE

GENERAL COMPETENCIES (SOFT SKILLS): Behavioral skills and personal qualities	
GC 1. Competence in managing one's literacy	<p>GC1.1. The ability to self-study, self-develop and constantly update their knowledge within the chosen trajectory and in an interdisciplinary environment.</p> <p>GC1.2. The ability to express thoughts, feelings, facts and opinions in the professional sphere.</p> <p>GC1.3. The ability to mobility in the modern world and critical thinking.</p>
GC 2. Language competence	<p>GC2.1. The ability to express and understand concepts, thoughts, feelings, facts and opinions in the field of education and exact sciences, in written and oral forms (listening, speaking, reading and writing).</p> <p>GC2.2. Interact linguistically appropriately and creatively in all variety of social and cultural contexts: during studies, at at work, at home and at leisure.</p>
GC 3. Mathematical competence and competence in the field of science	<p>GC3.1. The ability and willingness to apply the educational potential, experience and personal qualities acquired during the study of mathematical, natural science, technical disciplines at the university, to determine ways to control and evaluate the solution of professional problems, the development of mathematical and natural science thinking.</p>
GC 4. Digital competence, technological literacy	<p>GC4.1. The ability to confidently and critically use modern information and digital technologies for work, leisure and communication, to possess the skills of using, restoring, evaluating, storing, producing, presenting and exchanging information through a computer, communicating and participating in cooperating networks using the Internet in the field of professional activity.</p>
GC 5. Personal, social and educational competencies	<p>GC5.1. The ability to possess the skills of critical thinking, interpretation, creativity of analysis, drawing conclusions, evaluation; to have creativity and an active life position; to make professional decisions in conditions of uncertainty and risk.</p> <p>GC5.2. The ability to possess social and ethical values based on public opinion, traditions, customs, norms and to focus on them in their professional activities; to know the cultures of the peoples of Kazakhstan and observe their traditions; to observe the basics of the legal system and legislation of Kazakhstan, to know the trends of social development of society; to be able to adequately navigate in various social situations; be able to find compromises, correlate their opinion with the opinion of the team; possess business ethics, ethical and legal norms of behavior; strive for professional and personal growth; work in a team, defend your point of view correctly, offer new solutions; demonstrate tolerance towards other individuals.</p> <p>GC5.3. To successfully carry out research activities; to know the patterns of psychological and physiological development of students, including those with special needs and their manifestations in the educational process at different age periods, to use knowledge of pedagogy, psychology and methods of teaching mathematics in professional activities, taking into account criteria assessment, pedagogical innovation and technology, to be capable of innovation, strive to develop their pedagogical skills.</p>
GC 6. Entrepreneurial competence	<p>GC6.1. The ability to know and understand the goals and methods of state regulation of the economy, the role of the public sector in the economy; possess the basics of economic knowledge; possess the skills of critical thinking, interpretation, creativity of analysis, drawing conclusions,</p>

	evaluation; manage projects to achieve professional objectives, manage personnel, demonstrate entrepreneurial skills.
GC 7. Cultural awareness and self-expression	GC7.1. The ability to know and understand the traditions and culture of the peoples of Kazakhstan, is tolerant to the traditions and culture of other peoples of the world, is aware of the attitudes of tolerant behavior; is not subject to prejudice, has high spiritual qualities, is formed as an intelligent person. GC7.2. The ability to be tolerant of the traditions and culture of other peoples of the world, to possess high spiritual qualities, to show ideological, civic and moral positions.
PROFESSIONAL COMPETENCIES (HARD SKILLS):	
Theoretical knowledge and practical skills specific to this field	PC1. Knowledge of general forms, patterns and tools of fundamental and applied mathematics and other mathematical disciplines.
	PC2. The ability to use basic knowledge from mathematics, physics and other natural sciences in cognitive and professional activities.
	PC3. Conduct scientific research in the professional field.
	PC4. Master the techniques of computer modeling and methods of theoretical analysis of the results of observations and experiments.
	PC5. The ability to study and apply innovative pedagogical experience, the desire for self-education and self-realization, to show professional values: professionalism, innovation, meritocracy, integrity

3.1. MATRIX FOR CORRELATING LEARNING OUTCOMES IN THE EDUCATIONAL PROGRAM AS A WHOLE WITH THE COMPETENCIES BEING DEVELOPED

	LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9	LO10
GC1	✓	✓	✓		✓		✓	✓		
GC2	✓		✓	✓		✓				✓
GC3	✓			✓		✓		✓	✓	
GC4	✓		✓	✓		✓	✓			
GC5		✓	✓		✓		✓	✓		✓
GC6		✓	✓	✓	✓		✓	✓		
GC7	✓			✓	✓				✓	✓
PC 1	✓	✓						✓	✓	✓
PC 2			✓	✓	✓	✓			✓	
PC 3		✓		✓	✓	✓	✓		✓	
PC 4				✓	✓	✓	✓	✓		
PC 5	✓	✓	✓				✓			✓

4. MATRIX OF THE INFLUENCE OF MODULES AND DISCIPLINES ON THE FORMATION OF LEARNING OUTCOMES AND INFORMATION ON LABOR INTENSITY

№	Name of the module	Cycle	Component	Name of the discipline	Brief description of the discipline	Number of credits	Generated learning outcomes (codes)												
							LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9	LO10			
1	Module of Scientific and Pedagogical Training	BD	UC	History and Philosophy of Science	<p>Purpose: Study of the problems of the phenomenon of science as a subject of special philosophical analysis, patterns and trends in the development of special activities for the production of scientific knowledge taken in a socio-cultural context.</p> <p>Identification of the specifics and relationship of the main problems of history and philosophy of science. Study of the laws of the development of science and the structure of scientific knowledge, methods of scientific research. Knowledge of the main concepts and directions of the non-classical and post-classical stage of the development of science. Analysis of the realities of modern theory and practice based on understanding the methodology of natural science, socio-humanitarian and technical knowledge. Critical thinking as a prerequisite for the development and functioning of modern society. Technologies for the development of critical thinking: consideration and study of the logic of arguments. Formation of critical reflexive thinking and metacognitive abilities</p>	4		✓				✓							

		BD	UC	Higher Education Pedagogy	<p>The aim: formation of the foundations of the professional and pedagogical culture of a university teacher, general pedagogical competencies, familiarization of undergraduates with the theoretical and methodological foundations of higher education pedagogy, technologies for planning, organizing and managing the educational process at a university.</p> <p>Content. Modern paradigms of education, history and latest trends in the development of higher professional education in the world and in Kazakhstan. Genesis and methodology of pedagogy of higher education, the competence of a university teacher. Problems of university didactics, problems of organizing educational work with students, management of a modern university. Modern approaches and methods of teaching and organization of educational activities of students, evaluation of educational achievements</p>	4				✓					✓	✓	
2	Methodological foundations of teaching	PD	UC	Teaching Methods of Special Disciplines	<p>The purpose of the discipline is to improve undergraduates to effective and competent teaching of specialized subjects in mathematics in accordance with modern requirements of the educational process.</p> <p>The main content of the course includes the study of methodological approaches, principles of the organization of the educational process, the development of curricula, the preparation of teaching materials, the use of active and interactive teaching methods, as well as the assessment and monitoring of student progress. The course also includes the study of modern pedagogical technologies and methods for assessing the quality of teaching specialized disciplines at school, university.</p>	5			✓	✓		✓	✓		✓	✓	

		BD	UC	Pedagogical Practice	<p>The purpose of the discipline is to organize experimental and practical activities aimed at improving professional skills in the field of pedagogy and practical experience of working with students.</p> <p>The main content of the course includes acquaintance with the organization of the educational process, the development and conduct of lessons at the university, the practice of working with various age and socio-cultural groups, familiarization with the methods of assessment and control of academic performance, analysis and reflection of pedagogical activity, the development of communicative and organizational skills, as well as the formation of a professional attitude to pedagogical work at the university.</p>	4			✓					✓		
3	Actual problems of modern mathematics	BD	EC	Theory of Difference Boundary Value Tasks	<p>The purpose of the discipline is to study the theoretical foundations and methods of solving difference boundary value problems that arise in the mathematical modeling of various physical and technical processes.</p> <p>The main content of the course includes the study of various classes of difference boundary value problems, such as problems on rectangular, curved and unstructured grids, methods of numerical solution, including methods of finite differences, finite elements, difference schemes, as well as analysis of the stability and accuracy of numerical methods. Splitting schemes by physical processes for filtration problems of a multiphase incompressible fluid. T.Carleman's model problem for a system of transfer equations. E-approximation, uniqueness of the solution. Splitting schemes. Cabaret difference scheme for the transfer equation and the Buckley-Leverett equation.</p> <p>Investigation of a complex of algorithms for solving problems of mathematical physics by finite difference methods.</p>	4			✓	✓		✓	✓			✓

		BD	EC	Gird methods for solving differential equations	<p>The purpose of the discipline is to master the basic principles and methods of numerical solution of differential equations using grid methods.</p> <p>The main content of the course includes the study of various classes of differential equations, grid methods. The course also includes the study of stability, accuracy and convergence of grid methods, error analysis and evaluation of the quality of numerical solutions. Considers the grid method for solving the Cauchy problem, mixed problems, parabolic equations, as well as direct and iterative methods. Allows you to apply methods for a particular sequence of exclusion of unknowns and calculation of the solution by explicit formulas and obtain a solution of SLOUGH as a result of successive approximations.</p>				✓	✓		✓	✓					✓	
		BD	EC	Methods for solving linear integral equations	<p>The purpose of the discipline is to study the basic methods and approaches to solving linear integral equations, which are widely used in various fields of science and technology. The main content of the course includes the study of the main types of linear integral equations, such as Fredholm equations of the first and second kind, Volterra equations, Fredholm equations of the second kind with singular kernels, as well as solution methods, including iteration methods, collocation methods, Galerkin methods, Neumann methods, Fourier methods and others. The ability to compose integral equations according to given differential equations. Solution of integral equations. Application of the method of successive approximations. The resolvent of the Volterra integral equation. Laplace transform. Definition and basic properties. Application of the Laplace transform.</p>	5			✓	✓		✓	✓						✓

		BD	EC	Asymptotic Complex Analysis Methods	<p>The purpose of the discipline is to study and apply asymptotic methods in complex analysis to analyze the behavior of functions and integrals at infinity, at the boundary of domains, as well as near singular points and lines of complex functions.</p> <p>Differentiation and integration of asymptotic relations and order relations are considered. Solving the problem of operations with classes of functions, analyzing the features of the asymptotic solution of transcendental equations. Generalization formation definition of the asymptotic Poincare decomposition, solution of the problem by Laplace and Euler method.</p>				✓	✓		✓	✓				✓	
				Research Practice	<p>Purpose: to consider the purpose and objectives of research practice, conducting bibliographic work on the topic of the dissertation, processing and analyzing the data obtained. To compare the results of their own research with existing data in science, to ensure a critical approach to the results of their own research, readiness for professional self-improvement and the development of creative potential and professional skills.</p>	6				✓		✓	✓	✓				
4	Additional chapters of differential equations	PD	EC	Spectral Theory of Shturm-Liouville Operator	<p>Objective: to study the basic concepts and methods of spectral theory used to analyze and solve Sturm-Liouville problems, such as finding eigenvalues and eigenfunctions, and to study the spectral properties of Sturm-Liouville operators and their applications</p> <p>Consideration of the main theorems and definition of spectral theory. Solving the Sturm-Liouville equation and transformation operators, knowledge of Riemann formulas, the Sturm-Louisville boundary value problem on a finite interval and on a semi-axis, some information about generalized spectral functions, an asymptotic formula for spectral functions. To characterize the formulation of the question, to derive the basic formulas</p>	4			✓	✓		✓	✓					✓

				<p>Objective: to study the basic theoretical concepts and methods related to linear non-self-adjoint operators and their application in the analysis of spectral properties, solving corresponding equations and problems, as well as in the study of various applications of this theory in mathematics, physics.</p> <p>Definition and properties of linear non-self-adjoint operators. Spectral theory of linear non-self-adjoint operators. Spectral properties of linear non-self-adjoint operators. Methods for solving equations with linear non-self-adjoint operators: resolvent methods, Green's functions, semigroups of operators. Applications of the theory of linear non-self-adjoint operators. Stability analysis and numerical methods: stability analysis of non-self-adjoint operators, numerical methods for solving problems with non-self-adjoint operators, such as decomposition methods into subspaces, Krylov methods, methods of boundary integral equations.</p>					✓	✓			✓	✓				✓
		BD	EC	<p>Additional Chapters of Partial Differential Equations</p>	<p>The purpose of the discipline is to study more complex and advanced methods for solving partial differential equations used in various scientific and engineering applications.</p> <p>Undergraduates study the theory of hyperbolic, elliptic and mixed-type equations, as well as methods for solving complex initial-boundary value problems, such as Ritz methods, Galerkin methods and finite element methods. They will also get acquainted with the solution of nonlinear equations and equations with variable coefficients, as well as applications of these methods in physics.</p>	6			✓	✓			✓	✓				✓

		BD	EC	<p>Theory of Functional-Differential Operators</p>	<p>The purpose of the discipline is to study the basic concepts and methods of operator theory, as well as their applications to solving functional differential equations.</p> <p>Undergraduates study the basic properties of functional operators, including compactness, spectral theory and semigroup theory, as well as the application of these concepts to the solution of lag equations and Volterra integral equations. In addition, they will study methods of approximate solution of functional differential equations and their application to solving practical problems in physics, biology and other fields.</p>				✓	✓		✓	✓							✓
		PD	EC	<p>Additional Chapters of Parabolic Type Partial Differential Equations</p>	<p>The purpose of the discipline is to study mathematical methods for solving problems related to the processes of diffusion and heat transfer. Undergraduates will get acquainted with the basic concepts and theorems of the theory of parabolic equations, as well as methods for solving various types of problems, such as initial-boundary value problems and mixed-type problems. They will study difference and integral methods of numerical solution of equations, as well as applications of these methods in engineering and physical problems.</p>				✓	✓		✓	✓							✓
		PD	EC	<p>Theory of Integral Operators</p>	<p>The purpose of the discipline is to study mathematical methods and approaches to solving various problems related to integral operators.</p> <p>The content of the discipline includes the study of the theory of linear and nonlinear integral operators, their properties and classification. Methods for solving integral equations and problems related to integral operators are also studied, including iteration methods, cross-section methods, methods of integral transformations, and others.</p> <p>Particular attention is paid to the application of the theory of integral operators in various fields of mathematics and physics, such as elasticity theory, potential theory, hydrodynamics, quantum mechanics and others. Various applications of the theory of integral operators are studied, such as inverse problems, signal processing, image theory, and others.</p>	6			✓	✓		✓	✓							✓

		PD	EC	Actual Questions of the Theory of Analytic Function	<p>The purpose of the discipline is to study modern achievements in the theory of analytical functions and their applications in various fields of mathematics and physics.</p> <p>The content of the discipline includes the study of the theory of functions of a complex variable, analytical and harmonic functions, the theory of potentials and their properties, as well as modern theoretical and applied problems. Various methods and approaches in the theory of analytic functions are also studied, including contour deformation methods, residual residue methods, probability theory methods, and others.</p> <p>Special attention is paid to the application of the theory of analytic functions in various fields, such as number theory, geometry, physics and others. The current problems and open questions in the theory of analytic functions are studied, such as the Riemann hypothesis, Mills problem, Poincare problem and others.</p>	5			✓	✓		✓	✓					✓
		PD	EC	Variational Methods in Mathematical Physics	<p>The purpose of the discipline is to study methods and approaches to solving problems of mathematical physics based on the principle of minimum or maximum functionals.</p> <p>The content of the discipline includes the study of the theory of variational problems, the principle of least action, Fermat's principle, the principle of maximum entropy and other principles. Methods for solving variational problems are also studied, including the Ritz method, the collocation method and the finite element method.</p> <p>Particular attention is paid to the application of variational methods in various fields of mathematical physics, such as elasticity theory, hydrodynamics, field theory and quantum mechanics. Various applications of variational methods are studied, such as optimal control and optimization of the shape of structures in engineering.</p>				✓	✓		✓	✓					✓

		PD	EC	<p>Fundamental Issues of Algebra, Geometry and Logic</p>	<p>The purpose of the discipline is to study the basic concepts and methods of algebra, geometry and logic, as well as their interrelation and applications in various fields of science and technology.</p> <p>The content of the discipline includes the study of the theory of groups, rings, fields, algebraic systems and other basic concepts of algebra. The basic concepts and methods of differential geometry, topology and algebraic geometry are also studied.</p> <p>Within the framework of logic, the basic theories of formal logic, set theory and axiomatic theory are studied.</p> <p>Particular attention is paid to the application of algebra, geometry and logic in various fields of science and technology, such as cryptography, coding theory, computer science and others.</p>	6			✓	✓		✓	✓					✓
		PD	EC	<p>Theory of Polynomials</p>	<p>The purpose of the discipline is to study the properties of polynomials and their applications in various fields of mathematics and applications.</p> <p>The content of the discipline includes the study of the basic concepts of the theory of polynomials, such as coefficients, degree, roots, divisors and other properties of polynomials.</p> <p>Methods of solving equations, constructing interpolation polynomials and approximation methods based on polynomials are also studied.</p> <p>Particular attention is paid to applications of polynomial theory in the fields of mathematical physics, number theory, combinatorics and other fields.</p> <p>In particular, Legendre, Chebyshev and Laguerre polynomials are studied, which are widely used in solving problems of physics, probability theory and other fields.</p>				✓	✓		✓	✓					✓

5	Additional Chapters of Mathematical Analysis	PD	EC	<p>Fundamental Issues of Mathematical Analysis</p> <p>The purpose of the discipline is to study the basic concepts and methods of mathematical analysis necessary to solve a wide range of problems in science and technology.</p> <p>The content of the discipline includes the study of the theory of measure and integral, functional analysis, differentiable maps and the theory of differential equations.</p> <p>Fundamental theorems of mathematical analysis are also studied, such as theorems on the existence and uniqueness of solutions to differential equations, the implicit function theorem, and the convergence theorems of series and integrals.</p> <p>Attention is paid to the application of mathematical analysis in problems of mathematical physics, probability theory, optimization and other fields of science and technology.</p>	5				✓	✓		✓	✓					✓
		PD	EC	<p>Spectral Properties of Differential Equations with Deviating Arguments</p> <p>The purpose of the discipline is to study spectral properties and methods for solving linear differential equations with a deviating argument.</p> <p>The content of the discipline includes the study of basic concepts and methods for solving differential equations with a deviating argument, such as transfer operators, resolvents, splitting theory and other methods.</p> <p>The spectral properties of these equations are also studied, including the existence and uniqueness of the solution, the properties of the spectral function and spectral elements, as well as their applications in problems of mathematical modeling of dynamic systems with a deviating argument.</p> <p>Particular attention is paid to the application of spectral theory methods in solving specific problems, such as optimal control problems and others.</p>					✓	✓		✓	✓					✓

		PD	EC	Special Functions	<p>The purpose of the discipline is to study the basic properties and applications of various classes of special functions that arise in various fields of mathematics, physics and engineering sciences.</p> <p>The content of the discipline includes the study of Bessel, Legendre, Hermite, Laguerre, Gauss and other classes of special functions, their properties and methods for solving equations that include these functions.</p> <p>Applications of special functions in various fields such as field theory, quantum mechanics, optics, probability theory and other sciences are also studied.</p> <p>Special attention is paid to the relationship between different classes of special functions and their applications in mathematical modeling problems, as well as the use of computer programs for calculating and visualizing these functions</p>	6			✓	✓		✓	✓			✓
		PD	EC	Differential Equations with Operator Coefficients	<p>The purpose of the discipline is to form the skills of undergraduates in solving linear differential equations with operator coefficients found in mathematical modeling of various processes.</p> <p>The content of the discipline includes the study of basic concepts and methods for solving differential equations with operator coefficients, such as the Dirac operator, Green functions, decomposition methods, asymptotic methods and numerical solution methods.</p> <p>Applications of differential equations with operator coefficients in various fields of science and technology are also studied. Special attention is paid to the application of these equations in the problems of mathematical modeling of dynamic systems.</p>				✓	✓		✓	✓			✓

6	Asymptotic Problems of Modern Mathematics	PD	EC	Applied Boundary Value Tasks	<p>The purpose of the discipline is to form undergraduates' knowledge and practical skills for solving applied boundary-value problems in various fields of science and technology.</p> <p>The content of the discipline includes the study of basic concepts and methods for solving boundary value problems in areas such as mechanics, heat and mass transfer, electrodynamics, optics, hydrodynamics, acoustics, etc. Undergraduates will get acquainted with the basic mathematical models of these areas and learn how to solve boundary value problems using analytical and numerical methods. In addition, undergraduates will study examples of real applied problems and learn how to analyze them and find optimal solutions.</p>	5			✓	✓		✓	✓				✓
		PD	EC	Modern Numerical Methods for Solving Boundary Value Tasks	<p>The purpose of the discipline is to teach undergraduates modern methods of numerical analysis to solve boundary value problems that arise in various fields of science and technology.</p> <p>The content of the discipline includes the study of basic methods of numerical analysis, such as the finite difference method, the finite element method and the finite volume method, as well as their application to solving boundary value problems. Undergraduates will get acquainted with examples of boundary value problems from various fields, such as mechanics, thermal conductivity, hydrodynamics and others, and learn how to apply numerical methods to solve these problems. In addition, within the framework of the discipline, algorithms for the implementation of numerical methods will be studied and the accuracy and stability of numerical solutions will be evaluated.</p>				✓	✓		✓	✓			✓	

		PD	EC	Laplace Transformation and Their Application	<p>The purpose of the discipline is to form students' knowledge and practical skills of using the Laplace transform to solve problems in science, technology and economics.</p> <p>Considers Laplace transformations as a powerful tool for solving problems in the field of control theory. Compare the properties of the Laplace transform: linearity, similarity theorem, differentiation and integration of the original and the image, delay, displacement, multiplication theorems. Characterize the properties of the Fourier transform.</p>				✓	✓		✓	✓					✓
		PD	EC	Asymptotic Methods for Solving Singular-Perturbation Problems	<p>The purpose of the discipline is to teach undergraduates basic asymptotic methods for solving problems with singular perturbations, which are widely used in physics, mathematics, mechanics and other scientific fields.</p> <p>The content of the discipline includes the study of the basic concepts and theorems of asymptotic analysis, pass methods, stationary phases and inhomogeneous perturbations. In addition, within the framework of the discipline, undergraduates will get acquainted with examples of singularly perturbed problems, such as the Cauchy problem for ordinary differential equations, partial differential equations and integral equations. In practice, students will solve problems using asymptotic methods and study their accuracy and applicability. Tikhonov's theorems.</p>	5			✓	✓		✓	✓					✓

5. SUMMARY TABLE REFLECTING THE VOLUME OF DISBURSED LOANS BY EDUCATIONAL PROGRAM MODULES

Course of training	Semester	Amount of the mastered modules	Amount of the studied disciplines		Amount of KZ credits					Total in hours	Total loans KZ	Amount	
			University component	Optional component	Theoretical training	Pedagogical practice	Research practice	RWM	Execution and Defense of Master`s Thesis			Exam	Diff. credit
1	1	5	5	2	29			1		900	30	7	2
	2	5	1	4	22	4		4		900	30	4	2
2	3	3		2	11		6	3		600	20	2	2
	4	3		3	16			4		600	20	3	1
	5	1						12	8	600	20		1
Total		7	6	11	73	4	6	24	8	3600	120	16	8

6. STRATEGIES, TEACHING METHODS AND ARTIFICIAL INTELLIGENCE, MONITORING AND ASSESSMENT

<p>Learning strategies</p>	<p>Student-centered learning: The master's student is the center of teaching/learning and an active participant in the learning and decision-making process.</p> <p>Practice-oriented training: orientation to the development of practical skills.</p>
<p>Teaching methods</p>	<p>Conducting lectures, seminars, practical and laboratory work, various types of practices, using:</p> <ul style="list-style-type: none"> • innovative technologies; • problem-based learning; • case study; • work in a group and creative groups; • discussions and dialogues, intellectual games, olympiads, quizzes; • reflection methods, projects, benchmarking; • Bloom's taxonomies; • presentations; <p>Rational and creative use of information sources:</p> <ul style="list-style-type: none"> • multimedia training programs; • electronic textbooks; • digital resources. <p>machine learning methods</p> <p>Organization of independent work of master's students, individual consultations.</p> <p>Provision of inclusive education to persons with special needs corresponding to the Roadmap for the development of inclusive Education in Higher and (or) postgraduate education organizations for 2023-2025 (Approved by the Minister of the Ministry of Education and Science of the Republic of Kazakhstan on 03/27/2023)</p>
<p>Monitoring and evaluation of the achievability of learning outcomes</p>	<p>Current control on each topic of the discipline, control of knowledge in classroom and extracurricular classes (according to syllabus). Assessment forms:</p> <ul style="list-style-type: none"> • survey in the classroom; • testing on the topics of the academic discipline; • control works; • protection of independent work; • term papers; • colloquiums; • essays, etc. <p>Boundary control at least twice during one academic period within the framework of one academic discipline.</p> <p>Intermediate certification is carried out in accordance with the working curriculum, academic calendar.</p> <p>Forms of holding:</p> <ul style="list-style-type: none"> • exam in the form of testing; • oral examination; • written exam; • combined exam; • project protection; • protection of practice reports. <p>Final state certification.</p>

7. EDUCATIONAL AND RESOURCE SUPPORT OF THE EDUCATIONAL PROGRAM

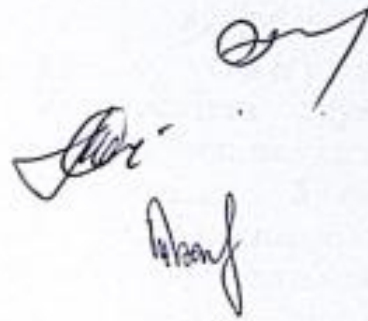
<p>Information Resource Center</p>	<p>The structure of the EIC has 6 subscriptions, 16 reading rooms, 2 electronic resource centers (ERC). The basis of the network infrastructure of the EIC is 180 computers with Internet access, 110 automated workstations, 6 interactive whiteboards, 2 video dvoik, 1 video conferencing system, 3 scanners of A-4 format, 3. The software of the EIC – АИБС «ИРБИС-64» for MSWindows (a basic set of 6 modules), an autonomous server for uninterrupted operation in the ИРБИС system.</p> <p>The library fund is reflected in the electronic catalog available to users on the website http://lib.ukgu.kz is on-line 24 hours 7 days a week.</p> <p>Thematic databases of their own generation have been created: "Almamater", "Труды ученых ЮКГУ", "Электронный архив". Online access from any device 24/7 via an external link http://articles.ukgu.kz/ru/pps.</p> <p>Working with catalogs in electronic form. The EC consists of 9 databases: "Books", "Articles", "Periodicals", "Труды ППС ЮКГУ", "Rare books", "Electronic Fund", "ЮКГУ в печати", "Readers" of "SKU".</p> <p>The EIC provides its users with 3 options for accessing its own electronic information resources: from the Electronic Catalog terminals in the catalog hall and divisions of the EIC; through the university's information network for faculties and departments; remotely on the library's website http://lib.ukgu.kz/</p> <p>Access to international and republican resources is open: "SpringerLink", "Полпред", "Web of Science", "EBSCO", "Эпиграф", to electronic versions of scientific journals in open access, "Зан", "РМЭБ", "Әдебиет", Digital library "Aknurpress", "Smart-kitap", "Kitap.kz", etc.</p> <p>For people with <i>special needs and disabilities</i>, the library's website has been adapted to the work of visually impaired users in the ERC.</p>
<p>Material and technical base</p>	<p>Audiences 320, 321, 325, 302, 309, 310., printer, scanner. There are 33 computers in two computer classes (Core 2 Quad, Intel Core 2 Duo), 3-in-1 Multifunctional Device (copier, printer, scanner). In the computer room (302, 309) computers have access to the Internet.</p>

APPROVAL SHEET
according to the Educational program 7M05410-Mathematics

Director of the DAA

Director of the DAsC

Director of the DE&C

Three handwritten signatures in black ink are positioned in the center of the page. The top signature is a cursive flourish. The middle signature is a stylized, somewhat illegible cursive script. The bottom signature is a more legible cursive script.

A. Naukenova

U. Nazarbek

T. Bazhirov

Рецензия

на образовательную программу 7М05410-Математика
(Южно-Казахстанский Университет имени М. Ауэзова)

1. Краткая характеристика предприятия и профиль ее деятельности.

Стратегии развития Университета дружбы народов имени академика А.Куатбекова сформулированы на основе анализа имеющихся в университете ресурсов и возможностей, включающих 3 факультета, отдел послевузовского образования, базу для подготовки по направлениям подготовки бакалавриата, магистратуры и докторантуры PhD, инновационный научно-исследовательский институт «Болашак» и 3 научных центра («Теоретическая и прикладная математика», «Социальные исследования», научный центр «Абайтану» и учебный центр «Лингвоцентр»).

2. Актуальность и востребованность образовательной программы.

Актуальность и востребованность ОП 7М05410-Математика объясняется необходимостью подготовки востребованных научных и научно-педагогических кадров по направлению «Математика» для обеспечения потребностей науки, образования и производства в области математики.

Согласно образовательной программе 7М05410-Математика, магистры педагогических наук, могут занимать должности руководителя научной группы в научно-исследовательских институтах и лабораториях и вычислительных центрах; в центрах использующих современные компьютерные технологии; а также вести педагогическую деятельность в университете.

3. Результаты обучения и компетенции, их связь с запросами рынка труда.

В рецензируемой ОП приведен полный перечень необходимых компетенций, которыми должен обладать магистр естественных наук в результате освоения образовательной программы 7М05410-Математика, а также перечень профессиональных задач, которых должен быть готов решать выпускник в соответствии с видами профессиональной деятельности: Способность использовать в познавательной и профессиональной деятельности базовые знания из области математики, физики и других естественных наук.

Разработчики данной образовательной программы учитывают современные тенденции на рынке труда, определяющие требования работодателей к потенциальным соискателям, и качественно сформировали результаты обучения и приобретаемые профессиональные компетенции выпускников; согласован с Профстандартом Педагог (профессорско-преподавательский состав) организаций высшего и (или) послевузовского образования. Приказ Министра науки и высшего образования Республики Казахстан от 20 ноября 2023 года № 591.

4. Содержание образовательной программы.

Качество содержательной составляющей образовательной программы не вызывает сомнений. Структура программы в целом логична и последовательна. Оценка образовательной программы позволяет сделать вывод, что содержание программы соответствует компонентной модели выпускника.

Структура образовательной программы отражена в учебном плане и включает 7 учебных модулей. Цели ОП соответствуют 7 уровню Национальной рамки квалификаций Республики Казахстан.

5. Заключение по образовательной программе.

К реализации данной программы привлекли достаточно опытный профессорско-преподавательский состав, а также ведущих практических деятелей;

Заключаю, рецензируемая образовательная программа, разработанная и реализуемая ЮКУ им. М.Ауезова, отвечает основным требованиям нормативно-правовой документации и способствует формированию ключевых компетенций по направлению подготовки 7М05410-Математика.

к.ф.-м.н., доцент
кафедры «Математика»
ЮКПУ им. С.Жаныбекова



Абдрахманов К.

Абдрахманов К.

19.02.24m

Экспертное заключение
на образовательную программу 7М05410-Математика

1. Актуальность образовательной программы (ОП).

Образовательная программа магистратуры, представленная для рецензирования, разработана кафедрой «Математика» остается актуальной и востребованной в связи с растущей потребностью в высококвалифицированных математиках для научных исследований, разработки новых технологий, анализа данных и решения сложных проблем в различных областях.

2. Соответствие ОП сформулированным целям, согласующимся с миссией вуза, запросами работодателей и обучающихся.

В представленной образовательной программе четко определены и измеримы цели программы; четко увязываются с миссией университета; легко адаптируются к удовлетворению требований потребителей: Подготовка востребованных научных и научно-педагогических кадров по направлению «Математика» для обеспечения потребностей науки, образования и производства в области математики согласуется с подготовкой лидера, транслирующего исследовательское мышление и культуру.

3. Соответствие Национальной рамке квалификации Республики Казахстан.

Цель образовательной программы 7М05410-Математика соответствует:

- 7-м уровень Национальной рамки квалификаций РК;
- Дублинские дескрипторы 7 уровня квалификации;
- 2 цикл Квалификационной рамки Европейского пространства высшего образования (A Framework for Qualification of the European Higher Education Area);
- 7 уровень Европейской квалификационной рамки для образования в течение всей жизни (The European Qualification Framework for Life long Learning).

4. Отражение в ОП результатов обучения и компетенций, основанных на Дублинских дескрипторах, заложенных в профессиональных стандартах/ отраслевых рамках.

Образовательная программа направлена на формирование ключевых компетенций магистра, которые определяются Дублинскими дескрипторами, согласованными с Европейской рамкой квалификаций.

В ОП 7М05410-Математика определены все соответствующие результаты обучения и компетенции:

- Исследовать проблемы в различных сферах математики, использовать современные средства распространения научной информации, применить информационные технологии для анализа осмысления, обработки и представления результатов собственных исследований
- Разработать математические модели и применять знания, умения, навыки и способности решать проблемы в отраслях связанных с математикой, самостоятельно выполнять вычислительные, математические, экспериментальные исследования, обосновывать результаты при обсуждении со специалистами с более широкой аудиторией.
- Развивать представления об основных идеях и методах преподавания математики и связи их с окружающей действительностью, обобщать результаты экспериментально-исследовательской и аналитической работы в виде магистерской диссертации, статьи, отчета, аналитической записки и др.

5. Соответствие нормативно-правовой базе документов.

Образовательная программа 7М05410-Математика, разработанная и реализуемая в Южно-Казахстанском университете имени М.Ауезова, отвечает основным требованиям приказа высшего и послевузовского образования» и способствует формированию необходимых компетенций по направлению подготовки 7М05410-Математика, а также:
-Закон Республики Казахстан «Об образовании» № 319-III от 27 июля 2007 года;

- Типовые правила деятельности организаций высшего и (или) послевузовского образования, утвержденные приказом МОН РК от 30 октября 2018 г. №595.
- Государственные общеобязательные стандарты высшего и послевузовского образования, утвержденные приказом МНиВО РК от 20 июля 2022 г. № 2;
- Правила организации учебного процесса по кредитной технологии обучения, утвержденные приказом МОН РК от 20 апреля 2011 г. № 152;
- Квалификационный справочник должностей руководителей, специалистов и других служащих, утвержденный приказом Министра труда и социальной защиты населения Республики Казахстан от 30 декабря 2020 года № 553.
- Руководство по использованию ECTS.
- Руководство по разработке образовательных программ высшего и послевузовского образования, приложение 1 к приказу директора ЦБПиАМ № 45 о/д от 30 июня 2021 г.

6. Структура и содержание ОП, применение модульного принципа их построения.

Структура образовательной программы отражена в учебном плане и включает 7 учебных модулей.

Профессиональные дисциплины, междисциплинарные модули, практики и научно-исследовательская работа обеспечивают широту и глубину подготовки к профессиональной деятельности в соответствии с целями образовательной программы.

Обучение по образовательной программе завершается выполнением магистерской диссертации, содержащей элементы научно-исследовательской деятельности. Теоретическое обучение, практики и научные исследования в целом учитывают принципы академической честности.

Поддерживается академическая мобильность, предусматривающая изучение обучающимися ряда дисциплин (модулей) учебного плана, выполнение научных исследований, прохождение практик в других образовательных и научных организациях. В университете приняты меры по поддержанию академической честности и академической свободы, защиты от любого вида нетерпимости и дискриминации:

- Правила академической честности (приказ №212-нк от 10.10.2022г.);
- Антикоррупционный стандарт (приказ №221-нк от 07.12.2021г.)
- Кодекс этики (приказ №212-нк от 10.10.2022г.).

Антикоррупционная Политика НАО «Южно-Казахстанский университет им. М.Ауэзова» (приказ №144 нк от 14.07.2022г.).

7. Наличие в ОП компонентов для подготовки к профессиональной деятельности, развивающих ключевые компетенции, интеллектуальные и академические навыки, отражающих изменяющиеся требования общества, в том числе по реализации президентской программы по овладению тремя языками: казахским, русским и английским.

Подготовка к профессиональной деятельности осуществляется в течение всего периода обучения. Образовательная программа обеспечивает достижение всеми выпускниками результатов обучения, согласованных с профессиональными стандартами и необходимых для профессиональной деятельности:

- Способность использовать в познавательной и профессиональной деятельности базовые знания из области математики, физики и других естественных наук
- Проводить научные исследования в профессиональной сфере
- Владеть приемами компьютерного моделирования и методами теоретического анализа результатов наблюдений и экспериментов
- Способность к изучению и применению инновационного педагогического опыта, стремление к самообразованию и самореализации.

8. Логическая последовательность дисциплин и отражение основных требований в учебных планах и программах обучения.

Учебный план включает базовые естественнонаучные и математические дисциплины, обеспечивающие обширную подготовку и дающие основу для приобретения необходимых профессиональных компетенций выпускников магистратуры.

9. Отражение в ОП системы учета учебной нагрузки обучающихся и преподавателей в кредитах, ее соответствие параметрам кредитной системы обучения.

Направленность образовательной программы 7М05410-Математика на развитие у магистрантов навыков самостоятельной исследовательской работы, позволяет повысить уровень творческой активности и самостимуляции в освоении знаний, что подтверждает соответствие данной ОП принципам и параметрам кредитной системы обучения.

10. Наличие в ОП производственной практики для закрепления теоретического материала, выраженного в учебной нагрузке в кредитах.

Обязательными компонентами программы являются практики, в результате происходит закрепление и углубление теоретических знаний, полученных в процессе обучения в университете, приобретаются практические навыки.

В образовательной программе 7М05410-Математика предусмотрены следующие виды практик: исследовательская практика, педагогическая практика, НИРМ.

11. Сведения о ППС, участвующих в реализации ОП.

Подбор преподавателей-практиков осуществляется на основании квалификационных требований, должностных инструкций и утвержденного штатного расписания, с учетом большого опыта работы в соответствующей области деятельности.

ОП 7М05410-Математика реализуют профессорско-преподавательский состав, владеющие фундаментальными знаниями и умениями специфики преподаваемых предметов; обеспечена высококвалифицированными специалистами-учеными: Сарсенби А.М. - д.ф.-м.н., профессор; Аширбаев Н.К. - д.ф.-м.н., профессор; Калимбетов Б.Т. - д.ф.-м.н., профессор, Сапахов Д. – PhD, Мусирепова Э. – PhD, семи обладателями звания «Лучший преподаватель вуза РК».

12. Квалификация, получаемая в результате освоения ОП.

После успешного завершения настоящего ОП выпускнику присваивается академическая степень: Магистр естественных наук по образовательной программе 7М05410-Математика.

13. Рекомендация.

Заключение экспертной комиссии: характер, структура и содержание образовательной программы 7М05410-Математика, соответствует всем требованиям и позволяет, при его реализации, успешно обеспечить формирование заявленных компетенций.

Председатель экспертной комиссии
Заведующий кафедрой «Физика»,
Южно-Казахстанского университета
им. М. Ауэзова, к.п.н.

Турсынбаев А.З.

19.02.2020

Члены экспертной комиссии:
Декан Высшей школы
«Естественных наук и педагогики», Южно-
Казахстанского университета им. М. Ауэзова,
к.п.н., доцент

Мадияров Н.К.

Заведующий кафедрой «Информатика»,
Южно-Казахстанского университета
им. М. Ауэзова, к.п.н.

Жайдакбаева Л.К.

Ф. 8.18-01

Утверждаю
Председатель УМС
Сарыпқұлов К.Р.
от « 28 » 02, 2024 г. (протокол № 4)

ПРОТОКОЛ ОБНОВЛЕНИЯ ОП на 2024 / 2025 учебный год

По направлению 7М054-Математика и статистика
7М05410-Математика

№ п/п	Вид обновлений	Содержание изменений, вносимых в ОП	Причины (аргументы внесения указанных изменений)
1	2	3	4
1.	Иные виды обновления	1. Включение задачи «Создание условий для формирования востребованных знаний и навыков, осознанного отношения к улучшению благосостояния населения и защите планеты в контексте ЦУР»	Интеграция концепции и индикаторов целей устойчивого развития (ЦУР) Казахстана
		2. Корректировка дисциплины «Педагогика высшей школы» 3. Включение в профессиональные компетенции: Способность проявлять профессиональные ценности: профессионализм, инновационность, меритократия, добропорядочность. 4. Корректировка РО: Осуществляет научно-исследовательскую деятельность, обеспечивает повышение качества учебно-методических материалов	Профстандарт «Педагог (ППС ОВПО)» Приказ МНВО № 591 от 20.11.2023

Рассмотрен на заседании комитета по академическому качеству факультета/ВШ
« ЭКП ».
Протокол № 4, от 23.02 2024 г.

Председатель АК Турсынбаев А.З.

Разработчик ОП Байдибекова А.О.

Секретарь АК Нышанбаева Ж.У.

Согласовано:

Начальник ЦМОП Адырбекова Г.М.