Ministry of Science and Higher Education of the Republic of Kazakhstan
K. Zhubanov Aktobe Regional University

APPROVED
By the decision of the Board of
Directors of NJSC «K. Zhubanov
Aktobe Regional University»
(Protocol No.__dated "__"_____202_)

MODULAR EDUCATIONAL PROGRAM

Code and name of the field of education: 7M05 – Natural Sciences, Mathematics and Statistics
Code and name of the field of study: 7M054 – Mathematics and Statistics
Code and name of the EP: 7M05401 – Mathematics
Level of education: Master's degree
Awarded degree: Master of Science in the educational program “7M05401 – Mathematics”
Total number of credits: 120 academic credits/120 ECTS

Year of admission: 2023

1. **Compilers:**

Full name	Position	Contact details
Employers:		
Beisov Zholdaskali Zhumabekovich	Head of the Department of the Bureau of National Statistics at the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan for the Aktobe Region	8-777-52-699-55
Seilkhanov Tolegen Bazarbayuly	Director of the Branch of Bereke Bank JSC in Aktobe	8-705-888-98-24
Kuldybaeva Asiya Edelbekovna	Director of the Branch of Eurasian Bank JSC in Aktobe	8-777-311-30-30
Uteuov Aibek Baimuratovich	Director of BATYSMUNAIMASH LLP	8-702-326-11-44 8-701-455-30-88
Master's student:		
Araylym Kalybek	1st year	8-701-999-67-50
Responsible compilers for the department:		
Kokotova Yelena Viktorovna	Candidate of Physical and Mathematical Sciences, Associate Professor of the Department of Mathematics	8-701-920-42-53
Tavanova Nazgul Myrzagaliyevna	Master's Degree, Lecturer	8-702-553-21-31
Reviewer:		
Alday Maktagul	PhD., Associate Professor, Eurasian National University named after L.N. Gumilyov	8-701-333-25-75

2. **MISSION:** The formation of a qualified specialist and a "perfect person" imbued with national values

   VISION: A multidisciplinary classical university that provides the western region of Kazakhstan with qualified specialists and has become a core center of applied science.

   VALUES:
   1. Academic excellence
   2. Integrity
   3. Openness and cooperation
   4. Highest quality of education
   5. Social activity and civic initiative
   6. Leadership and creativity
   7. Respect and attention to people
   8. Unity of science and innovation

3. **Model of a university graduate**

   - Has in-depth knowledge and understanding of the field of study
   - Ready for professional self-realization in the modern world
   - Entrepreneurial, able to make decisions and create new opportunities
   - Adaptive to global challenges
   - A person of high intellect
   - Demonstrates global citizenship

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4. Passport of the educational program

Scope of application	The educational program 7M05401 – Mathematics (hereinafter referred to as the EP) is designed to train master's degree students at Aktobe Regional University named after K. Zhubanov. The EP is a system of documents independently developed and approved by Aktobe Regional University named after K. Zhubanov, based on the State Educational Standards for higher education in the relevant field of study, the classifier of training areas for personnel with higher and postgraduate education, and in accordance with the code of the International Standard Classification of Education (ISCED), as well as the professional standard "Teacher." When developing the educational program, the established scientific schools of K. Zhubanov ARU, as well as the needs of the regional and national labor markets, were taken into account.
Code and name of the educational program	7M05401 – Mathematics
Regulatory and legal support	1. Law of the Republic of Kazakhstan "On Education" dated July 27, 2007 No319-III (with amendments and additions dated 14.07.2022 No141-VII) 2. Rules for the organization of the educational process on credit technology of education. Order of the Ministry of Education and Science of the Republic of Kazakhstan dated 20.04.2011 No152 (with amendments and additions dated September 23, 2022 No79) 3. Guidelines for the Use of the European Credit Transfer and Accumulation System (ESTS) 2015 4. State compulsory standard of higher and postgraduate education. Order of the Ministry of Science and Higher Education of the Republic of Kazakhstan (hereinafter referred to as the Ministry of Higher Education of the Republic of Kazakhstan) dated 20.07.2022 No2. 5. Classifier of Areas of Training of Personnel with Higher and Postgraduate Education. Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 13, 2018 No 569 (with amendments and additions dated October 13, 2018. No 569) 6. Rules for the organization of dual education. Order of the Ministry of Education and Science of the Republic of Kazakhstan No 50 dated 21.01.2016 (with amendments and additions dated 27.08.2022 No 380) 7. Standard Rules for the Activities of Educational Organizations Implementing Educational Programs of Higher and (or) Postgraduate Education. Order of the Ministry of Education and Science of the Republic of Kazakhstan dated October 30, 2018 No595 (with amendments and additions dated 18.11.2022 No145) 8. Typical Educational Programs of the Cycle of General Educational Disciplines for Organizations of Higher and (or) Postgraduate Education (Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No 603) 9. System of Coding of Educational Disciplines of Higher and Postgraduate Education. State Educational Standards of the Republic of Kazakhstan 5.05.001-2005

	10. Professional Standard "Teacher" (Order of the Acting Minister of Education of the Republic of Kazakhstan dated December 15, 2022 No 500) 11. Sectoral framework of qualifications in the field of "Education" (Approved by the sectoral commission of the Ministry of Education and Science of the Republic of Kazakhstan on social partnership and regulation of social and labor relations in the field of education and science. Protocol No3 dated 27.11.2019) 12. Regulations on the Structure of the Modular Educational Program (Protocol No. 53 dated November 11, 2022) 13. Regulations on Master's and Doctoral Programs (Protocol No 5 of 30.11.2022) 14. Regulations on the master's thesis (Protocol No 5 of 30.11.2022) 15. Regulation on the organization of professional practice of students (Protocol No 5 of 30.11.2022)
Map of the training profile within the framework of the educational program	
Goal of the educational program	To train competitive highly qualified scientific and pedagogical personnel for the system of higher education and the scientific field, with in-depth scientific, pedagogical and research training.
Qualification characteristics of the graduate	
Awarded degree	Master of Natural Sciences in the educational program "7M05401 – Mathematics"
List of specialist positions	● a researcher in research institutes, laboratories, design and design bureaus, etc. ● teacher of mathematics in higher educational institutions and other educational organizations ● mathematician-analyst, specialist in production and management organizations that use mathematical methods in their work, in insurance companies, financial structures ● head of the organization, head of a structural unit, deputy head of a structural unit
Field of professional activity	● science ● education ● scientific and production sphere ● economics and management
Functions and types of educational activities	Types of professional activities ● research ● organizational and managerial ● pedagogical In accordance with the types of professional activity, a graduate of the EP "7M05401-Mathematics" can perform the following functions: 1. Research activities: ● scientific research using mathematical methods and modern high-performance computing technologies to solve fundamental problems of mathematical modeling of processes and objects

	● study of new scientific results, scientific literature or research projects in the field of mathematics in accordance with the topics of research ● compilation of scientific reviews, abstracts and bibliography, preparation of scientific publications on the subject of research 2. Pedagogical activities: ● organization of the educational and pedagogical process, teaching a cycle of mathematical disciplines in higher education institutions and other educational organizations ● supervising scientific research of students and master's degree candidates (together with professors) ● development of educational and methodological materials for higher education organizations and other educational organizations 3. Organizational and managerial activities: ● organization of the work of research groups ● organization of scientific and scientific-methodical seminars, conferences

5. Learning outcomes for the educational program

1. To be able to carry out information-analytical and information-bibliographic work with the involvement of modern information technologies, to be able to transmit scientific information using modern information and innovative technologies
2. Ability to apply knowledge acquired in the field of fundamental disciplines in the field of theoretical and scientific-practical mathematical problems in scientific researches
3. Be able to summarize the results of research and analytical work in the form of a master's thesis, scientific article, report, etc.
4. Formation of the ability to teach mathematical disciplines, competence in the issues of modern educational technologies, the ability to use modern information technologies, interactive teaching methods in the educational process
5. Speak a foreign language at a level that allows research and teaching of special subjects in universities
6. To demonstrate knowledge of philosophy and methodology of scientific cognition; to have an idea of the actual methodological and philosophical problems of natural sciences, the role of science and education in public life
7. To be competent in the scientific and scientific-pedagogical institutions of higher education, to know the classical rules of didactics of higher education, the theory and methodology of teaching mathematics, to know the psychology of students' cognitive creativity in the educational process, the quality and effectiveness of the learning environment and psychological methods
8. Ability to organize your work on a scientific basis, to continue his/her education in doctoral studies and acquire the required knowledge and skills required in professional work
9. Use of pedagogy and psychology of higher education in their pedagogical activity; knowledge of global trends and pedagogical concepts in the development of higher professional education, educational strategies of international organizations
10. To know about modern trends in the development of scientific knowledge, to know the principles and structure of scientific activity, to know the theoretical and methodological basis of scientific research in the field of pedagogy and special disciplines
11. To demonstrate knowledge of the history of the development of mathematical science, current problems of mathematical analysis, algebra and geometry, differential equations and mathematical physics, numerical methods, probability theory and mathematical statistics and other mathematical disciplines; to have an idea of the state of development of mathematical science and promising areas of research
12. To be competent in research design and professional research, to explore new methods of research in modern mathematical science and to develop research skills and to solve standardized scientific problems.

6. Modular curriculum for 2023-2025
Scientific and pedagogical direction (2 years of study)

Cycle/ component	Discipline code	Name of the discipline	Term	Academic credits	Credit of ECTS	Form of control	Coursework	Budget of working time of master's students, hour							Distribution by courses and terms			
								ALTOGETHER	Number of classroom hours	Classroom classes			Independent work		1st year		2nd year	
										Lectures	laboratory lessons	Practical lessons	IWMS-T	IWMS	1-term 15 weeks	2-term 15 weeks	3-term 15 weeks	4-term 15 weeks
Module 1. - Basic Disciplines, 15 academic credits																		
BD UK	HPhS 5201	History and Philosophy of Science (in Kazakh)	1	3	3	exam		90	30	15		15	15	45	3			
BD UK	FL(P) 5202	Foreign Language (professional) (in English)	1	3	3	exam		90	30			30	15	45	3			
BD UK	PHE 5203	Pedagogy of higher education (in English)	1	3	3	exam		90	30	15		15	15	45	3			
BD UK	MP 5204	Management psychology (in Russian)	1	3	3	exam		90	30	15		15	15	45	3			
BD UK	OPSR 5205	Organization and planning of scientific research (in English)	1	3	3	exam		90	30	15		15	15	45	3			
Module 2.1. - Analysis and Systems of Partial Differential Equations, 15 academic credits																		
PD UK	MAMSA 5301	Mathematical analysis on manifolds and stochastic analysis (in Kazakh)	1	5	5	exam		150	45	15		30	25	80	5			
BD EC	GTSFOPDE 5206	General theory of the systems of first order partial derivative equations (in Russian)	2	5	5	exam		150	45	15		30	25	80		5		

	RWMSICMT	Research work of a master's student, including the completion of a master's thesis	1	5	5	report		150							5			
Module 2.2. - "Multidimensional Analysis and Partial Differential Equations", 15 academic credits																		
PD UK	MAMSA 5301	Mathematical analysis on manifolds and stochastic analysis (in Kazakh)	1	5	5	exam		150	45	15		30	25	80	5			
BD EC	FOPDEA 5206	The first order partial differential equations and its applications (in Russian)	2	5	5	exam		150	45	15		30	25	80		5		
	RWMSICMT	Research work of a master's student, including the completion of a master's thesis	1	5	5	report		150							5			
Module 3. - Modern Educational Technologies, 10 academic credits																		
PD UK	TMTMH S 5302	Theory and methods of teaching mathematics in high school (in Kazakh)	2	5	5	exam		150	45	15		30	25	80		5		
BD	PP	Pedagogical practice	3	5	5	report		150									5	
Module 4.1. - Modern Problems of Differential Equations, 25 academic credits																		
BD EC	DEMPhN MTS 5207	Differential equations, mathematical physics and numerical methods of their solution (in English)	1	5	5	exam		150	45	15		30	25	80	5			
BD EC	NEMPhT A 5208	Non-classical equations of mathematical physics and their applications (in Kazakh)	2	5	5	exam		150	45	15		30	25	80		5		
PD EC	IDE 5303	Impulsive differential equations (in English)	2	4	4	exam		120	40	20		20	20	60		4		
	RWMSICMT	Research work of a master's student, including the completion of a master's thesis	2	11	11	report		330								11		
Module 4.2. - Probability Theory, Mathematical Statistics and Stochastic Processes, 25 academic credits																		
BD EC	AChPT 5207	Additional chapters of probability theory (in English)	1	5	5	exam		150	45	15		30	25	80	5			
BD EC	SQMS 5208	Selected questions of mathematical statistics (in Kazakh)	2	5	5	exam		150	45	15		30	25	80		5		
PD EC	TRP 5303	Theory of random processes (in English)	2	4	4	exam		120	40	20		20	20	60		4		

	RWMSICMT	Research work of a master's student, including the completion of a master's thesis	2	11	11	report		330								11		
Module 5.1. – Theory of Oscillations, 15 academic credits																		
PD UK	EMTMFO6304	Elements of the mathematical theory of multi-frequency oscillations (in Kazakh)	3	5	5	exam		150	45	15		30	25	80			5	
PD EC	PPVSBSSPDE 6305	Periodic in a part of variables solutions in the broad sense of systems of partial differential equations (in Kazakh)	4	5	5	exam		150	45	15		30	25	80				5
	RWMSICMT	Research work of a master's student, including the completion of a master's thesis	3	5	5	report		150									5	
Module 5.2. - Almost periodic Functions and Multi-frequency Oscillations, 15 academic credits																		
PD UK	EMTMFO6304	Elements of the mathematical theory of multi-frequency oscillations (in Kazakh)	3	5	5	exam		150	45	15		30	25	80			5	
PD EC	APFA 6305	Almost periodic functions and its applications (in Kazakh)	4	5	5	exam		150	45	15		30	25	80				5
	RWMSICMT	Research work of a master's student, including the completion of a master's thesis	3	5	5	report		150									5	
Module 6.1. – Problems of Numerical-Analytical Methods and Geometry (32 academic credits)																		
PD EC	SGSSNC 6306	Study and graphing of some surfaces of negative curvature (in Kazakh)	3	5	5	exam		150	45	15		30	25	80			5	
PD EC	NAMISBVP 6307	Numerical and analytical methods for investigating solutions of boundary value problems (in Russian)	4	5	5	exam		150	45	15		30	25	80				5
PD	RP	Research Practice	3, 4	19	19	report		570									10	9
	RWMSICMT	Research work of a master's student, including the completion of a master's thesis	4	3	3	report		90										3
Module 6.2. - Applications of Boundary Value Problems and Methods of Probability Theory, 32 academic credits																		

PD EC	TPAPA 6306	Theoretical probabilistic approach to the problems of analysis (in Kazakh)	3	5	5	exam		150	45	15		30	25	80			5	
PD EC	NBVPM PhEA 6307	Non-local boundary value problems of mathematical physics equations and its applications (in Russian)	4	5	5	exam		150	45	15		30	25	80				5
PD	RP	Research Practice	3, 4	19	19	report		570									10	9
RWMSICMT		Research work of a master's student, including the completion of a master's thesis	4	3	3	report		90										3
Final attestation (8 academic credits)																		
FA		Final attestation**.** Preparation and defense of a master's thesis	4	**8**	**8**	ИА		**240**										**8**
ALTOGETHER																		
ALTOGETHER		on a cycle BD UC		15	15			450	150	60	0	90	75	225	15			
ALTOGETHER		on a cycle BD EC		15	15			450	135	45	0	90	75	240	5	10		
		BD Pedagogical Practice		5	5			150	0	0	0	0	0	150			5	
TOTAL		**on a cycle BD**		**35**	**35**			**1050**	**285**	**105**	**0**	**180**	**150**	**615**	**20**	**10**	**5**	**0**
ALTOGETHER		on a cycle PD UK		15	15			450	135	45	0	90	75	240	5	5	5	
ALTOGETHER		on a cycle PD EC		19	19			570	175	65	0	110	95	300		4	5	10
		PD Research Practice		19	19			570	0	0	0	0	0	570			10	9
TOTAL		**on a cycle PD**		**53**	**53**			**1590**	**310**	**110**	**0**	**200**	**170**	**1110**	**5**	**9**	**20**	**19**
ALTOGETHER		RWMSICMT		**24**	**24**			**720**						720	**5**	**11**	**5**	**3**
		Final attestation**.**		**8**	**8**			**240**						240				**8**
Total Credits:				**120**	**120**			**3600**	**595**	**215**	**0**	**380**	**320**	**2685**	**30**	**30**	**30**	**30**

7.1. Map of the the educational program
Scientific and pedagogical direction (full-time study, duration of study - 2 years)

Cycle/ component	Discipline code	Name of the discipline	Term	Academic credits	Credit of ECTS	Learning Outcomes
1	2	3	4	5	6	7
Module 1. - Basic Disciplines, 15 academic credits						
BD UK	HPhS 5201	History and Philosophy of Science (in Kazakh)	1	3	3	LO -1, LO -6, LO -8
BD UK	FL(P) 5202	Foreign Language (professional) (in English)	1	3	3	LO -1, LO-5, LO -8
BD UK	PHE 5203	Pedagogy of higher education (in English)	1	3	3	LO-4, LO-5, LO -6, LO -7, LO-9, LO -10
BD UK	MP 5204	Management psychology (in Russian)	1	3	3	LO-1, LO-7, LO-8, LO-9,
BD UK	OPSR 5205	Organization and planning of scientific research (in English)	1	3	3	LO-1, LO-3, LO-5, LO-10, LO-8
Module 2.1. - Analysis and Systems of Partial Differential Equations, 15 academic credits						
PD UK	MAMSA 5301	Mathematical analysis on manifolds and stochastic analysis (in Kazakh)	1	5	5	LO-2, LO-8, LO-11, LO-12
BD EC	GTSFOPDE 5206	General theory of the systems of first order partial derivative equations (in Russian)	2	5	5	LO-1, LO-2, LO-8, LO-11
RWMSICMT		Research work of a master's student, including the completion of a master's thesis	1	5	5	LO-1, LO-2, LO -3, LO-5, LO-7, LO-12
Module 2.2. - "Multidimensional Analysis and Partial Differential Equations", 15 academic credits						
PD UK	MAMSA 5301	Mathematical analysis on manifolds and stochastic analysis (in Kazakh)	1	5	5	LO-2, LO-8, LO-11, LO-12
BD EC	FOPDEA 5206	The first order partial differential equations and its applications (in Russian)	2	5	5	LO-1, LO-2, LO-8, LO-11
RWMSICMT		Research work of a master's student, including the completion of a master's thesis	1	5	5	LO-1, LO-2, LO -3, LO-5, LO-7, LO-12

Module 3. - Modern Educational Technologies, 10 academic credits						
PD UK	TMTMHS 5302	Theory and methods of teaching mathematics in high school (in Kazakh)	2	5	5	LO-4, LO-7, LO-8, LO-9
BD	PP	Pedagogical practice	3	5	5	LO-4, LO-7, LO-8, LO-9
Module 4.1. - Modern Problems of Differential Equations, 25 academic credits						
BD EC	DEMPhN MTS 5207	Differential equations, mathematical physics and numerical methods of their solution (in English)	1	5	5	LO-2, LO-5, LO-8, LO-11, LO-12
BD EC	NEMPhT A 5208	Non-classical equations of mathematical physics and their applications (in Kazakh)	2	5	5	LO-2, LO-8, LO-11, LO-12
PD EC	IDE 5303	Impulsive differential equations (in English)	2	4	4	LO-2, LO-5, LO-11, LO-12
RWMSICMT		Research work of a master's student, including the completion of a master's thesis	2	11	11	LO-1, LO-2, LO -3, LO-5, LO-7, LO-12
Module 4.2. - Probability Theory, Mathematical Statistics and Stochastic Processes, 25 academic credits						
BD EC	AChPT 5207	Additional chapters of probability theory (in English)	1	5	5	LO-1, LO-2, LO-5, LO-8, LO-11
BD EC	SQMS 5208	Selected questions of mathematical statistics (in Kazakh)	2	5	5	LO-1, LO-2, LO-8, LO-11
PD EC	TRP 5303	Theory of random processes (in English)	2	4	4	LO-1, LO-2, LO-5, LO-8, LO-11
RWMSICMT		Research work of a master's student, including the completion of a master's thesis	2	11	11	LO-1, LO-2, LO -3, LO-5, LO-7, LO-12
Module 5.1. – Theory of Oscillations, 15 academic credits						
PD UK	EMTMFO 6304	Elements of the mathematical theory of multi-frequency oscillations (in Kazakh)	3	5	5	LO-2, LO-8, LO-11, LO-12
PD EC	PPVSBSS PDE 6305	Periodic in a part of variables solutions in the broad sense of systems of partial differential equations (in Kazakh)	4	5	5	LO-2, LO-8, LO-11, LO-12
RWMSICMT		Research work of a master's student, including the completion of a master's thesis	3	5	5	LO-1, LO-2, LO -3, LO-5, LO-7, LO-12
Module 5.2. - Almost periodic Functions and Multi-frequency Oscillations, 15 academic credits						
PD UK	EMTMFO 6304	Elements of the mathematical theory of multi-frequency oscillations (in Kazakh)	3	5	5	LO-2, LO-8, LO-11, LO-12
PD EC	APFA 6305	Almost periodic functions and its applications (in Kazakh)	4	5	5	LO-1, LO-2, LO-8, LO-11
RWMSICMT		Research work of a master's student, including the completion of a master's thesis	3	5	5	LO-1, LO-2, LO -3, LO-5, LO-7, LO-12
Module 6.1. – Problems of Numerical-Analytical Methods and Geometry, 32 academic credits						
PD EC	SGSSNC 6306	Study and graphing of some surfaces of negative curvature (in Kazakh)	3	5	5	LO-1, LO-2, LO-8, LO-11

PD EC	NAMISB VP 6307	Numerical and analytical methods for investigating solutions of boundary value problems (in Russian)	4	5	5	LO-1, LO-2, LO-11, LO-12
PD	RP	Research Practice	3,4	19	19	LO-2, LO-3, LO-5, LO-11, LO-12
RWMSICMT		Research work of a master's student, including the completion of a master's thesis	4	3	3	LO-1, LO-2, LO -3, LO-5, LO-7, LO-12
Module 6.2. - Applications of Boundary Value Problems and Methods of Probability Theory, 32 academic credits						
PD EC	TPAPA 6306	Theoretical probabilistic approach to the problems of analysis (in Kazakh)	3	5	5	LO-2, LO-11
PD EC	NBVPMP hEA 6307	Non-local boundary value problems of mathematical physics equations and its applications (in Russian)	4	5	5	LO-2, LO-8, LO-11, LO-12
PD	RP	Research Practice	3,4	19	19	LO-2, LO-3, LO-5, LO-11, LO-12
RWMSICMT		Research work of a master's student, including the completion of a master's thesis	4	3	3	LO-1, LO-2, LO -3, LO-5, LO-7, LO-12

7.2. Matrix of the ratio of discipline and learning outcomes

№	Learning Outcomes / Name of discipline	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8	LO 9	LO 10	LO 11	LO 12
1.	History and Philosophy of Science (in Kazakh)	+					+		+				
2.	Foreign Language (professional) (in English)	+				+			+				
3.	Pedagogy of higher education (in English) (in English)				+	+	+	+		+	+		
4.	Management psychology (in Russian)	+						+	+	+			
5.	Organization and planning of scientific research (in English)	+		+		+			+		+		
6.	Mathematical analysis on manifolds and stochastic analysis (in Kazakh)		+						+			+	+
7.	General theory of the systems of first order partial derivative equations (in Russian)	+	+						+			+	
8.	The first order partial differential equations and its applications (in Russian)	+	+						+			+	
9.	Theory and methods of teaching mathematics in high school (in Kazakh)				+			+	+	+			
10.	Differential equations, mathematical physics and numerical methods of their solution (in English)		+			+			+			+	+
11.	Non-classical equations of mathematical physics and their applications (in Kazakh)		+						+			+	+
12.	Impulsive differential equations (in English)		+			+						+	+
13.	Additional chapters of probability theory (in English)	+	+			+			+			+	
14.	Selected questions of mathematical statistics (in Kazakh)	+	+						+			+	
15.	Theory of random processes (in English)	+	+			+			+			+	

16.	Elements of the mathematical theory of multi-frequency oscillations (in Kazakh)		+						+			+	+
17.	Periodic in a part of variables solutions in the broad sense of systems of partial differential equations (in Kazakh)		+						+			+	+
18.	Almost periodic functions and its applications (in Kazakh)	+	+						+			+	
19.	Study and graphing of some surfaces of negative curvature (in Kazakh)	+	+						+			+	
20.	Numerical and analytical methods for investigating solutions of boundary value problems (in Russian)	+	+									+	+
21.	Theoretical probabilistic approach to the problems of analysis (in Kazakh)		+									+	
22.	Non-local boundary value problems of mathematical physics equations and its applications (in Russian)		+						+			+	+
23.	Pedagogical practice				+			+	+	+			
24.	Research Practice		+	+		+						+	+
25.	Research work of a master's student, including the completion of a master's thesis	+	+	+		+		+					+
	Total	**13**	**18**	**3**	**3**	**9**	**2**	**5**	**19**	**4**	**2**	**17**	**10**

8. Summary table reflecting the volume of credits disbursed by modules of the educational program
Scientific and pedagogical direction (2 years of study)

Course	Term	Number of modules to be mastered	Number of disciplines studied		Number of academic credits						Total Hours	ECTS	Quantity	
			UK	EC	Theoretical training	Pedagogical practice	Research Practice	Research work	Final attestation	Altogether			Exams	Report
1	1	3	6	1	25	0	0	5	0	30	900	30	7	1
	2	3	1	3	19	0	0	11	0	30	900	30	4	1
2	3	3	1	1	10	5	10	5	0	30	900	30	2	3
	4	2	-	2	10	-	9	3	8	30	900	30	2	2
Total:		**6**	**8**	**7**	**64**	**5**	**19**	**24**	**8**	**120**	**3600**	**120**	**15**	**7**

9. Resource support of the educational program

Resource support is formed on the basis of the requirements for the conditions for the implementation of educational programs of the master's degree in the field of training 7M05401 – Mathematics and includes:

- staffing
- educational, methodological and information support
- material and technical support

Staffing

The implementation of the master's degree program should be provided by scientific and pedagogical personnel who, as a rule, have a basic education corresponding to the profile of the discipline taught, and are systematically engaged in scientific and (or) scientific and methodological activities.

The graduating department is the Department of Mathematics. The staff of the department is staffed in accordance with the legislation of the Republic of Kazakhstan and the Rules for competitive filling of positions of scientific and pedagogical staff of higher educational institutions.

The total number of full-time teachers at the Department of Mathematics is 32 teachers, including 2 doctors of science, 13 candidates of science, 5 doctors of PhD and 10 masters. The share of full-time teachers in their total number, including in the cycles of basic and major disciplines of the state compulsory standard of education, is 80%, the share of teachers with academic degrees and titles in the number of full-time teachers is 62.5%.

Educational, methodological and information support

Educational, methodological and information support of the educational program 7M05401 – Mathematics includes: standard and working curriculum of the discipline, UMKD, syllabus, control and measuring materials, active handouts, didactic materials for all academic disciplines of the curriculum, regulatory documents regulating the types of educational activities.

Each master's student has access to the Internet, including the electronic library of the university, the AF RSTL, KazNEB (Kazakh National Electronic Library), Web of Knowledge (Thomson Reuters) and Web of Science, Scopus, Springer and the resources of the scientific library of the university. The library fund is equipped with printed and electronic publications, educational and scientific literature in all disciplines of the specialty. In addition, undergraduates have access to the fund of the RSTL AF under a contract, including access to the dissertation fund of the RSL.

Material and technical support

In the implementation of OP 7M05401 – Mathematics, the material and technical base is used to ensure the conduct of all types of classes provided for by the working curriculum and corresponding to the current sanitary and fire safety rules and standards.

The material and technical base is provided by the presence of an educational building (at 263 Br. Zhubanovykh Street) with flow classrooms, equipped classrooms and laboratories, computer classes for conducting classes on the EP "7M05401 - Mathematics".

For the implementation of EP 7M05401 – Mathematics, the Faculty of Physics and Mathematics has the necessary classroom fund, methodological and specialized classrooms (scientific and innovative classroom named after Daulet Umbetzhanov, multilingual training room, theory and methodology of teaching mathematics room, "Algebra" room, "Geometry" room)), computer classes and special laboratories ("Laboratory of Analytics of Streaming Data and Machine Learning", "Computer Modeling and Numerical Methods", "Computer Graphics", etc.). In the specialized classrooms "Geometry", "Algebra" there are interactive panels DIGITOUCH BB-86 - these are interactive devices that combine a touch LCD screen as a multimedia player and a surface for writing with chalk or a marker, which are designed to organize the process of innovative learning, briefings or other tasks that require additional explanations and examples in the course of presenting the material.

10. Environmental characteristics of K. Zhubanov Aktobe Regional University, providing the development of general cultural and socio-personal competences of graduates

The university has all the necessary conditions and opportunities to ensure the formation and development of general cultural and socio-personal competencies of graduates.

An integral part of the educational process is educational work, the purpose of which is the formation of a professional, harmoniously developed and morally stable personality. Particular attention in educational work is focused on the education of patriotism, citizenship, a sense of responsibility, decency, honesty, loyalty to professional duty, law-abiding, respectful attitude to each other and others. Educational work is carried out in the following areas:

- education of civil and spiritual and moral culture
- education of aesthetic culture
- education of physical culture and the formation of a healthy lifestyle
- education of environmental culture
- labor education

As the basic regulatory framework for organizing the educational and upbringing process at the university, the "Concept of Educational Work" has been developed, along with a number of internal university regulations, such as the Regulation "On Student Self-Government", the Regulation "On the Organization of Educational Work at K. Zhubanov ARU", the Regulation "On the Council for the Prevention of Offenses", the Regulation "On the School of Legal Knowledge", the Regulation "On the Sports Club", the Regulation "On the Debate Club", and others.

To organize educational work at the university, the department for educational work and youth policy was created, which includes the department for work with students and youth organizations, the department for social and cultural work. In addition, the university has a student parliament, a student dormitory council, a sports club, a Council for the prevention of offenses, etc.

For the organization of cultural work and the formation of a healthy lifestyle, the university has a sufficient material and technical base:

- Palace of Youth
- Palace of Students
- Two sports complexes
- Sports facility
- 3 separate gyms
- Stadium with a running track and a grass football field
- Tennis court
- Shooting range
- Student multidisciplinary clinic

- Modern library

For the harmonious development of the personality, contributing to the strengthening of moral, civic, patriotic and general cultural competencies of undergraduates, the Debate Clubs "Ritor", "Zaman Bizdiki", the school of legal knowledge, the student theater "Zhubanov Zhastary", the Club of Young Poets "Tarazy", "English-club", "Education club", "Universial programmer-club", KVN club, charity club "Umiten uzilmesin", volunteer club "Zhubanov zhyluy", "ARSU STAR" and "Big Fam" dance clubs, "Mansap" School of Public Service, sports sections, etc.

Educational work is carried out in a complex of information and propaganda, individual psychological, legal, socio-economic, moral and ethical, cultural, sports and other events.

AGREED:

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