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

APPROVED
Acting Chairman of the Board - Rector
of the Aktobe Regional University
named after K. Zhubanov
_____ R.A. Beknazarov
"___" _____ 2021

MODULAR EDUCATIONAL PROGRAM

Code and name of the field of education: 6B01 – Pedagogical Sciences
Code and the name of the field of study: 6B015 – Training of teachers in natural science subjects
Code and name of the EP: 6B01501 – Mathematics
Level of education: Bachelor's degree
Awarded degree: Bachelor of Education in the educational program "6B01501 – Mathematics"
Total number of credits: 240 academic credits/240 ECTS

Year of admission: 2021

1. Compilers:

Full name	Position	Contact details
Employers:		
Kuralbayev Kuanysh Nurlanovich	Head of the school KSU «Aktobe Lyceum Bilim Innovation»	87478494267
Tleumagambetova Karagoz Esengenovna	Head of the school KSU «Aktobe Regional Specialized Physics and Mathematics Boarding School» Aktobe	87022515604
Toyshymanova Marzhankul Keneshbayevba	Head of the school KSU «Secondary school-gymnasium №21 with teaching in three languages» Aktobe	87023296997
Yerzhan Bakytbek Dikhanbaiuly	Head of the secondary school №35, Aktobe	87058402186
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Responsible compilers for the department:		
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Kalmenova Nurzhikhan	4th year student	87774345120
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Reviewers:		
Seilova Roza Dzhambulovna	Candidate of Physical and Mathematical Sciences, Associate Professor of the Department of Information and Communication Technologies, Baishev University	87014058849

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

   VISION: Multidisciplinary classical university, providing the western region of Kazakhstan with qualified specialists and became the core of applied science

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

3. Model of a university graduate

- Possess thorough knowledge and understanding of the studied area
- Ready for professional self-realization in the modern world
- Enterprising, able to make decisions and create new opportunities
- Adaptive to global challenges
- A person with high intelligence
- Possess a global citizenship

4. Passport of the educational program

Scope of application	Scope of application of EP 6B01501 - Mathematics: educational institutions (schools, lyceums, gymnasiums, educational institutions of technical and vocational education); research organizations in the field of mathematics, pedagogy, psychology and teaching methods; management organizations (education departments, public authorities with relevant profile, organizations, institutions and enterprises, related to the use of methods of physical and mathematical research)
Code and name of the educational program	6B01501 - Mathematics
Regulatory and legal support	1. Law of the Republic of Kazakhstan of June 27, 2007 №319-III «About education» (with amendments) 2. Guidelines for using the European Credit Transfer and Accumulation System (ECTS) 2015 3. Professional standards (approved: by order of Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No.288 of December 22, 2016; by order of Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No.133 of June 8, 2017; by order of Deputy Chairperson of the Board of the Atameken National Chamber of Entrepreneurs of the Republic of Kazakhstan. No.266 of December 27, 2019) 4. Rules for organizing the educational process on credit technology of education (Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 12, 2018 No.563) On amendments to the order of the Minister of Education and Science of the Republic of Kazakhstan dated April 20, 2011 No. 152 5. State compulsory standard of higher education (Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 604) (new edition by order No.182 of 05.05.2020) 6. National qualifications framework (Approved by No. 13 No. 20-5/I-141 of the Republican Trilateral Commission on Social Partnership and Regulation of Social and Labor Relations of March 16, 2016) 7. Industry-specific qualifications frameworks in various fields of activity which developed in accordance with Article 117 of the Labor Code of the Republic of Kazakhstan (with amendments of 01.01.2019) 8. Classifier of areas of personal training 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) 9. «Rules for organizing dual education» (Order of the Minister of Education and Science of the Republic of Kazakhstan dated January 21, 2016 No 50 *(*with amendments *of 11.09.2018)* 10. Standard rules for the activities of educational organizations implementing educational programs of higher and (or) postgraduate education Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 30, 2018 No. 595 (new edition by order No. 207 of 18.05.2020)

	11. Typical Academic curriculum of a cycle of general education 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) 12. Coding system for academic disciplines of higher and postgraduate education. SES of the Republic of Kazakhstan 5.05.001-2005 13. Regulation on the organization and conduct of professional practice and defining organizations as bases of practices (Minutes No. 13 of 12.08.2020) 14. Regulations on current monitoring of progress and intermediate attestation (examination session) of students. (Minutes No. 13 of 12.08.2020) 15. Regulations on the final certification of students. (Minutes No. 13 of 12.08.2020) 16. Regulations on the construction of a modular educational program (Minutes No. 13 of 12.08.2020) 17. Regulation on the introduction of multilingual education (Minutes No. 13 of 12.08.2020)
Map of the training profile within the framework of the educational program	
Goal of the educational program	The purpose of the educational program 6B01501 - Mathematics is to train highly qualified specialists in the fields of mathematics and methodology of teaching mathematics, formation of a competent specialist, a teacher of a new formation, able to creatively and professionally solve at the modern scientific and practical level socially significant tasks in the pedagogical field of activity.
Qualification characteristics of the graduate	
Awarded degree	Bachelor of Education in the educational program "6B01501 - Mathematics"
List of specialist positions	● teacher of mathematics in secondary schools ● teacher of mathematics in secondary vocational schools ● research teacher
Field of professional activity	● educational organizations, including those with multilingual education: schools, lyceums, gymnasiums and colleges ● educational institutions of technical and vocational education ● organizations, institutions and services of the industrial and non-industrial sphere of various organizational and legal forms, specializing in the field of mathematics
Functions and types of educational activities	Functions of educational activities ● development of a mathematical model of processes and phenomena in the field of natural sciences, engineering ● creation of software systems training in the educational system ● research works in areas related to the use of mathematics and physics

	Types of educational activities ● educational ● research ● socio-pedagogical ● organizational and educational ● cultural and educational
Dual training	According to this educational program, dual training is expected in 3 disciplines.

5. Learning outcomes for the educational program

1. To know the features of mathematics as a science and as a subject, the goals and objectives of teaching mathematics at different levels of the educational system.
2. To understand the technology of designing the process of teaching mathematics, the importance of innovative technologies in teaching mathematics.
3. To be able to apply the obtained theoretical knowledge in the process of learning mathematics, for the logical-didactic mathematical content of the main components and lines of the course of mathematics.
4. To be able to correctly use the language of the subject area, to carry out the proper formulation of tasks of teaching mathematics.
5. To possess the skills of teaching methods of mathematical disciplines, as well as to have a high level of language culture in professional activities.
6. To be able to formulate arguments and solve professional and applied problems in the process of teaching mathematical, natural and methodological disciplines.
7. To be able to formulate learning and teaching and testing and assessment materials on mathematical and methodical disciplines, to analyze the main methods of scientific research and academic writing, to test and introduce them in the educational process.
8. Apply fundamental pedagogical knowledge and skills as part of the content of the updated education system, assess situations in various fields, taking into account basic knowledge of history, philosophy and within the framework of social and political disciplines, master the basic concepts of educational management and apply the basic principles of academic honesty.
9. To use various types of information and communication technologies in personal activities, such as Internet resources, cloud and mobile services for search, storage, processing, protection and dissemination of information.
10. To be fluent in the basic methods and techniques of various types of verbal and written communication within the competence of a specialist in the field of mathematics, who knows the state and foreign languages in order to respond adequately in a dynamically developing multilingual and multicultural world.

6. Academic calendar for 2021-2025 (education period: 4 years)

n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1								M1							M2	S	S	S	V	V								M1							M2	S	S	EP	S/T	S/T	S/T	S/T	S/T	S/T	V	V	V	V	V	V	V	V	V
n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12	13
2								M1							M2	S	S	S	V	V								M1							M2	S	S	PP	PP	PP/S/T	S/T	S/T	S/T	S/T	S/T	V	V	V	V	V	V	V	V
n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	1	2	3	3	5	6	7	8	9	10	11	12
3								M1							M2	S	S	S	V	V								M1							M2	S	S	PP	PP	PP/S/T	PP/S/T	PP/S/T	S/T	S/T	S/T	V	V	V	V	V	V	V	V
n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
4								M1							M2	S	S	S	V	V	PP	PP	PP	PP	PP	PP	PP	PP	PP	PP	DP	DP	DP	DP	DP	V	SE	SE	DD	DD	DD	DD											

Symbols:

M - midterm control
S - examination session
S/T – summer term

Holidays: August 30 - Constitution Day
Holidays: December 16 – Kazakhstan Independence Day
Holidays: December 1 – Day of the First President of the Republic of Kazakhstan
Holidays: January 7 – Orthodox Christmas Day
Holidays: March 8th – International Women's Day

SE - state examination
DD – defend diploma thesis
DP - pre-diploma practice

PP - production practice
March 21, 22, 23 – Nauryz

May 1 – Unity Day
May 9 – Victory Day
July 6 – Day of the Capital

EP - Educational practice
V - vacation
Total weeks: theoretical training in the term -15 weeks
theoretical trimester training - 10 weeks,
quarterly - 8 weeks (4-course)
Total weeks: examination session - 2-3 weeks

Total weeks: winter holidays - 1-2 weeks
Total weeks: summer holidays - 2-7 weeks
Total weeks: summer term - 6 weeks

7. Modular curriculum for 2021-2025 (training period - 4 years)

Cycle / component	Code of the discipline	Name of discipline	Term	Academic credits	Credit of ECTS	Form of control	Course work	Students' working time budget, hour							Distribution by courses and terms							
										Auditory lessons			Individual work		1 year		2 year		3 year		4 year	
								TOTAL	Number of classroom hours	Lectures	laboratory lessons	Practical lessons	SIWT	SIW	1 - term 15 weeks	2 - term 15 weeks	3 - term 15 weeks	4 - term 15 weeks	5 - term 15 weeks	6 - term 15 weeks	7 - term 15 weeks	8 - term 15 weeks
1. Language module, 20 academic credits																						
GED CC	FL 1101	Foreign language	1, 2	10	10	exam		300	90			90	50	160	5	5						
GED CC	K(R)L 1102	Kazakh (Russian) language	1, 2	10	10	exam		300	90			90	50	160	5	5						
2. Module - General education, 28 academic credits																						
GED CC	MHK 1103	The modern history of Kazakhstan	1	5	5	SE		150	45	30		15	25	80	5							
GED CC	Phil 1104	Philosophy	1	5	5	exam		150	45	30		15	25	80	5							
GED CC	MSPK 1105	The module of the social and political knowledges	1, 2	8	8	exam		240	80	40		40	40	120	4	4						
GED CC	ICT 1106	Information and communication technologies	2	5	5	exam		150	45	15	15	15	25	80		5						

BD UC	UR 1201	Ulttyq rýhanıat	2	5	5	exam		150	45	30		15	25	80		5						
3. Professional module, 16 academic credits																						
BD UC	EM 1202	Elementary Mathematics	1	6	6	exam		180	60			60	30	90	6							
BD		Educational practice	2	1	1	report		30								1						
BD		Language practice	2	1	1	report		30								1						
GED CC	PhE 1(2)107	Physical education	1-4	8	8	DC		240				240			2	2	2	2				
4.1. Module - Algebra and language training, 17 academic credits																						
BD UC	FA 2203	Fundamentals of Algebra	3	5	5	exam		150	45	15		30	25	80			5					
BD UC	FL (B1) 2204	Foreign language (B1)	3	3	3	exam		90	30			30	15	45			3					
BD UC	FL (B2) 2205	Foreign language (B2)	4	3	3	exam		90	30			30	15	45				3				
BD EC	PSPA 2206	Practicum on solving problems of algebra (in English)	4	6	6	exam		180	60			60	30	90				6				
4.2. Module-Bases of Mathematics and language training, 17 academic credits																						
BD UC	FA 2203	Fundamentals of Algebra	3	5	5	exam		150	45	15		30	25	80			5					
BD UC	FL (B1) 2204	Foreign language (B1)	3	3	3	exam		90	30			30	15	45			3					
BD UC	FL (B2) 2205	Foreign language (B2)	4	3	3	exam		90	30			30	15	45				3				
BD EC	EG 2206	Elementary geometry (in English)	4	6	6	exam		180	60			60	30	90				6				
5.1. Module-Fundamental disciplines, 25 academic credits																						
GED EC	DTE 2108	Digital Technologies in Education (in Russian)	3	5	5	exam		150	45	30		15	25	80			5					
BD EC	AG 2207	Analytic geometry	3	5	5	exam		150	45	15		30	25	80			5					
BD EC	MAFOV 2208	Mathematical analysis: functions of one variable	3	5	5	exam		150	45	15		30	25	80			5					
BD EC	MAFMV 2209	Mathematical analysis: functions of many variables	4	5	5	exam		150	45	15		30	25	80				5				

BD EC	NThSOP 2210	Number theory for solving Olympiad problems	4	5	5	exam		150	45	15		30	25	80				5				
5.2. Module - Selected chapters of mathematics and academic honesty, 25 academic credits																						
GED EC	AI 2108	Academic Integrity (in Russian)	3	5	5	exam		150	45	30		15	25	80			5					
BD EC	BG 2207	Bases of Geometry	3	5	5	exam		150	45	15		30	25	80			5					
BD EC	DICFOV 2208	Differential and integral calculus: functions of one variable	3	5	5	exam		150	45	15		30	25	80			5					
BD EC	DICFMV 2209	Differential and integral calculus: functions of many variables	4	5	5	exam		150	45	15		30	25	80				5				
BD EC	ANTh 2210	Algebra and Number Theory	4	5	5	exam		150	45	15		30	25	80				5				
6.1. Pedagogical education, 14 academic credits																						
BD EC	Ped 2211	Pedagogy	3	5	5	exam		150	45	30		15	25	80			5					
BD UC	MTM 2212	Methods of Teaching Mathematics	4	6	6	exam		180	60	30		30	30	90				6				
BD		Pedagogical practice	4	2	2	report		60										2				
BD		Language practice	4	1	1	report		30										1				
6.2. Module-Bases of the profession, 14 academic credits																						
BD EC	PedS 2211	Pedagogical Skills	3	5	5	exam		150	45	30		15	25	80			5					
BD UC	MTM 2212	Methods of Teaching Mathematics	4	6	6	exam		180	60	30		30	30	90				6				
BD		Pedagogical practice	4	2	2	report		60										2				
BD		Language practice	4	1	1	report		30										1				
7.1 Module -Educational and research, 18 academic credits																						
PD UC	AL 3301	Academic letter	5	4	4	exam		120	40	20		20	20	60					4			
BD EC	SOPM 3213	Solving Olympiad Problems of Mathematics (in Russian)	6	5	5	exam		150	45	15		30	25	80						5		
PD UC	RME 3302	Robotics and mechatronics in education (in Russian)	6	4	4	exam		120	40	20		20	20	60						4		
PD		Pedagogical practice	6	4	4	report		120												4		

BD		Language practice	6	1	1	report		30												1		
7.2. Module-New technologies in education, 18 academic credits																						
PD UC	AL 3301	Academic letter	5	4	4	exam		120	40	20		20	20	60					4			
BD EC	SMPPE 3213	Solving mathematical problems in a programming environment (in Russian)	6	5	5	exam		150	45	15		30	25	80						5		
PD UC	RME 3302	Robotics and mechatronics in education (in Russian)	6	4	4	exam		120	40	20		20	20	60						4		
PD		Pedagogical practice	6	4	4	report		120												4		
BD		Language practice	6	1	1	report		30												1		
8.1. Module-Applied, 28 academic credits																						
BD EC	DE 3214	Differential Equations (in English)	5	6	6	exam		180	60	30		30	30	90					6			
PD EC	MSPP 3303	Methods for solving planimetric problems (in English)	5	5	5	exam		150	45	15		30	25	80					5			
BD EC	PTMS 3215	Probability Theory and Mathematical Statistics	6	5	5	exam		150	45	15		30	25	80						5		
BD EC	Phys 3216	Physics (in Russian)	6	4	4	exam		120	40	20	5	15	20	60						4		
PD EC	MSSP 3304	Methods for solving Stereometric problems (in Russian)	6	4	4	exam		120	40	20		20	20	60						4		
PD EC	CIThA 3305	Classical inequalities and their applications (in English)	6	4	4	exam		120	40	20		20	20	60						4		
8.2. Module-Natural and mathematical, 28 academic credits																						
BD EC	ODE 3214	Ordinary Differential Equations (in English)	5	6	6	exam		180	60	30		30	30	90					6			
PD EC	MCPS 3303	The method of coordinates in the plane and in space (in English)	5	5	5	exam		150	45	15		30	25	80					5			
BD EC	ThPRP 3215	Theory of Probability and random processes	6	5	5	exam		150	45	15		30	25	80						5		
BD EC	GCPh 3216	General course of physics (in Russian)	6	4	4	exam		120	40	20	5	15	20	60						4		

PD EC	FA 3304	Functional analysis (in Russian)	6	4	4	exam		120	40	20		20	20	60						4		
PD EC	AChMA 3305	Additional chapters of mathematical analysis (in English)	6	4	4	exam		120	40	20		20	20	60						4		
9. Module-Modern education, 14 academic credits																						
BD UC	FL (C1) 3217	Foreign language (C1)	5	4	4	exam		120	40			40	20	60					4			
PD UC	IE 3306	Inclusive education	5	5	5	exam		150	45	15		30	25	80					5			
BD UC	TCE 3218	Technology of criterial estimation	5	5	5	exam		150	45	15		30	25	80					5			
10. Module - Professional and methodological, 31 academic credits																						
PD UC	DMML 4307	Discrete Mathematics and Mathematical Logic (in English)	7	5	5	exam		150	45	15		30	25	80							5	
PD UC	MTSPTh 4308	Methods of teaching statistics and probability theory	7	5	5	exam		150	45	15		30	25	80							5	
BD		Pedagogical practice	7	6	6	report		180													6	
BD		Pedagogical practice	8	10	10	report		300														10
BD		Pre-diploma practice	8	4	4	report		120														4
BD		Language practice	8	1	1	report		30														1
11.1. Module-Modern technologies, 8 academic credits																						
PD UC	ITDRTM 4309	IT and digital resources in teaching mathematics (in Russian)	7	5	5	exam		150	45	30		15	25	80							5	
BD EC	TPISATGMATGRE 4219	Technologies for preparing for the international SAT, GMAT and GRE exams (in English)	7	3	3	exam		90	30	15		15	15	45							3	
11.2. Module-Innovative technologies, 8 academic credits																						
PD UC	ITDRTM 4309	IT and digital resources in teaching mathematics (in Russian)	7	5	5	exam		150	45	30		15	25	80							5	
BD EC	ME 4219	Management in Education	7	3	3	exam		90	30	15		15	15	45							3	
12.1. Module-Geometry of curves and surfaces, training in a small school, 10 academic credits																						

PD EC	OTMSS 4310	Organization of teaching mathematics in a small school	7	4	4	exam		120	40	20		20	20	60							4	
PD EC	ThCS 4311	Theory of curves and surfaces	7	5	5	exam		150	45	15		30	25	80							5	
12.2. Module-Advanced mathematics, 10 academic credits																						
PD EC	SIP 4310	Series and infinite processes	7	4	4	exam		120	40	20		20	20	60							4	
PD EC	NM 4311	Numerical methods	7	5	5	exam		150	45	15		30	25	80							5	
BD		Final attestation	8	12	12			360														12
	TOTAL	on a cycle GED CC		51	51			1530	395	115	15	505	215	680	26	21	2	2	0	0	0	0
	TOTAL	on a cycle GED EC		5	5			150	45	30	0	15	25	80	0	0	5	0	0	0	0	0
	TOTAL	**on a cycle GED**		**56**	**56**			**1680**	**440**	**145**	**15**	**520**	**240**	**760**	**26**	**21**	**7**	**2**	**0**	**0**	**0**	**0**
	TOTAL	on a cycle BD UC		37	37			1110	355	90	0	265	185	570	6	5	8	9	9	0	0	0
	TOTAL	on a cycle BD		21	21			630	0	0	0	0	0	0	0	2	0	3	0	1	0	15
	TOTAL	on a cycle BD EC		54	54			1620	505	185	5	315	270	845	0	0	15	16	6	14	3	0
	TOTAL	**on a cycle BD**		**112**	**112**			**3360**	**860**	**275**	**5**	**580**	**455**	**1415**	**6**	**7**	**23**	**28**	**15**	**15**	**3**	**15**
	TOTAL	on a cycle PD UC		28	28			840	260	115	0	145	140	440	0	0	0	0	9	4	15	0
	TOTAL	on a cycle PD		10	10			300	0	0	0	0	0	0	0	0	0	0	0	4	6	0
	TOTAL	on a cycle PD EC		22	22			660	210	90	0	120	110	340	0	0	0	0	5	8	9	0

TOTAL		**on a cycle PD**		**60**	**60**			**1800**	**4700**	**2005**	**0**	**265**	**2500**	**7800**	**0**	**0**	**0**	**0**	**14**	**16**	**30**	**0**
		TOTAL NUMBER OF CREDITS:		**240**	**240**			**7200**	**1770**	**625**	**20**	**1365**	**945**	**2955**	**32**	**28**	**30**	**30**	**29**	**31**	**33**	**27**

8.1 Map of the educational program

Cycle / component	Code of the discipline	Name of discipline	Term	Academic credits	Credit of ECTS	Learning Outcomes
1	2	3	4	5	6	8
1. Language module, 20 academic credits						
GED CC	FL 1101	Foreign language	1, 2	10	10	LO-10
GED CC	K(R)L 1102	Kazakh (Russian) language	1, 2	10	10	LO -10
2. Module - General education, 28 academic credit						
GED CC	MHK 1103	The modern history of Kazakhstan	1	5	5	LO -8
GED CC	Phil 1104	Philosophy	1	5	5	LO -8
GED CC	MSPK 1105	The module of the social and political knowledges	1, 2	8	8	LO -8
GED CC	ICT 1106	Information and communication technologies	2	5	5	LO -9
BD UC	UR 1201	Ulttyq rýhanıat	2	5	5	LO -8
3. Professional module, 16 academic credits						
BD UC	EM 1202	Elementary Mathematics	1	6	6	LO -3, LO -6
BD		Educational practice	2	1	1	LO -3, LO -9
BD		Language practice	2	1	1	LO -5, LO -10
GED CC	PhE 1(2)107	Physical education	1-4	8	8	LO -8

4.1. Module - Algebra and language training, 17 academic credits						
BD UC	FA 2203	Fundamentals of Algebra	3	5	5	LO -1, LO -3, LO -6
BD UC	FL (B1) 2204	Foreign language (B1)	3	3	3	LO -5, LO -10
BD UC	FL (B2) 2205	Foreign language (B2)	4	3	3	LO -5, LO -10
BD EC	PSPA 2206	Practicum on solving problems of algebra (in English)	4	6	6	LO -1, LO -6, LO -10
4.2. Module-Bases of Mathematics and language training, 17 academic credits						
BD UC	FA 2203	Fundamentals of Algebra	3	5	5	LO -1, LO -3, LO -6
BD UC	FL (B1) 2204	Foreign language (B1)	3	3	3	LO -4, LO -10
BD UC	FL (B2) 2205	Foreign language (B2)	4	3	3	LO -4, LO -10
BD EC	EG 2206	Elementary geometry (in English)	4	6	6	LO -1, LO -6, LO -10
5.1. Module-Fundamental disciplines, 25 academic credits						
GED EC	DTE 2108	Digital Technologies in Education (in Russian)	3	5	5	LO -5, LO -7, LO -9
BD EC	AG 2207	Analytic geometry	3	5	5	LO -1, LO -3, LO -6
BD EC	MAFOV 2208	Mathematical analysis: functions of one variable	3	5	5	LO -1, LO -3. LO -6
BD EC	MAFMV 2209	Mathematical analysis: functions of many variables	4	5	5	LO -1, LO -3. LO -6
BD EC	NThSOP 2210	Number theory for solving Olympiad problems	4	5	5	LO-5, LO -6, LO -7, LO -10
5.2. Module - Selected chapters of mathematics and academic honesty, 25 academic credits						
GED EC	AI 2108	Academic Integrity (in Russian)	3	5	5	LO -8
BD EC	BG 2207	Bases of Geometry	3	5	5	LO -1, LO -6, LO -9
BD EC	DICFOV 2208	Differential and integral calculus: functions of one variable	3	5	5	LO -1, LO -3, LO -6
BD EC	DICFMV 2209	Differential and integral calculus: functions of many variables	4	5	5	LO -1, LO -3. LO -6
BD EC	ANTh 2210	Algebra and Number Theory	4	5	5	LO -1, LO -3, LO -6
6.1. Pedagogical education, 14 academic credits						
BD EC	Ped 2211	Pedagogy	3	5	5	LO -2, LO -8
BD UC	MTM 2212	Methods of Teaching Mathematics	4	6	6	LO -2, LO -3, LO -5, LO -8
BD		Pedagogical practice	4	2	2	LO -2, LO -3, LO -8
BD		Language practice	4	1	1	LO -5, LO -10
6.2. Module-Bases of the profession, 14 academic credits						
BD EC	PedS 2211	Pedagogical Skills	3	5	5	LO -2, LO -8
BD UC	MTM 2212	Methods of Teaching Mathematics	4	6	6	LO -2, LO -3, LO -5, LO -8
BD		Pedagogical practice	4	2	2	LO -2, LO -3, LO -8
BD		Language practice	4	1	1	LO -5, LO -10

7.1 Module -Educational and research, 18 academic credits						
PD UC	AL 3301	Academic letter	5	4	4	LO -7
BD EC	SOPM 3213	Solving Olympiad Problems of Mathematics (in Russian)	6	5	5	LO-5, LO -6, LO -7, LO -10
PD UC	RME 3302	Robotics and mechatronics in education (in Russian)	6	4	4	LO -1, LO -7, LO -9
PD		Pedagogical practice	6	4	4	LO -2, LO -3, LO -8
BD		Language practice	6	1	1	LO -5, LO -10
7.2. Module-New technologies in education, 18 academic credits						
PD UC	AL 3301	Academic letter	5	4	4	LO -7
BD EC	SMPPE 3213	Solving mathematical problems in a programming environment (in Russian)	6	5	5	LO -1, LO -6, LO -9
PD UC	RME 3302	Robotics and mechatronics in education (in Russian)	6	4	4	LO -1, LO -7, LO -9
PD		Pedagogical practice	6	4	4	LO -2, LO -3, LO -8
BD		Language practice	6	1	1	LO -5, LO -10
8.1. Module-Applied, 28 academic credits						
BD EC	DE 3214	Differential Equations (in English)	5	6	6	LO -1, LO -6, LO -10
PD EC	MSPP 3303	Methods for solving planimetric problems (in English)	5	5	5	LO -3, LO -5, LO -10
BD EC	PTMS 3215	Probability Theory and Mathematical Statistics	6	5	5	LO -1, LO -3, LO -6
BD EC	Phys 3216	Physics (in Russian)	6	4	4	LO -4, LO -6
PD EC	MSSP 3304	Methods for solving Stereometric problems (in Russian)	6	4	4	LO -3, LO -6, LO -7
PD EC	CIThA 3305	Classical inequalities and their applications (in English)	6	4	4	LO-5, LO -6, LO -7, LO -10
8.2. Module-Natural and mathematical, 28 academic credits						
BD EC	ODE 3214	Ordinary Differential Equations (in English)	5	6	6	LO -1, LO -6, LO -10
PD EC	MCPS 3303	The method of coordinates in the plane and in space (in English)	5	5	5	LO -3, LO -5, LO -10
BD EC	ThPRP 3215	Theory of Probability and random processes	6	5	5	LO -1, LO -3, LO -6, LO -7
BD EC	GCPh 3216	General course of physics (in Russian)	6	4	4	LO -4, LO -6
PD EC	FA 3304	Functional analysis (in Russian)	6	4	4	LO -3, LO -6, LO -7
PD EC	AChMA 3305	Additional chapters of mathematical analysis (in English)	6	4	4	LO -1, LO -4, LO -6, LO -7
9. Module-Modern education, 14 academic credits						
BD UC	FL (C1) 3217	Foreign language (C1)	5	4	4	LO -5, LO -10
PD UC	IE 3306	Inclusive education	5	5	5	LO -2, LO -8
BD UC	TCE 3218	Technology of criterial estimation	5	5	5	LO -2, LO -8

10. Module - Professional and methodological, 31 academic credits						
PD UC	DMML 4307	Discrete Mathematics and Mathematical Logic (in English)	7	5	5	LO -1, LO -6, LO -7
PD UC	MTSPTh 4308	Methods of teaching statistics and probability theory	7	5	5	LO -3, LO -4, LO -5
BD		Pedagogical practice	7	6	6	LO -2, LO -3, LO -8
BD		Pedagogical practice	8	10	10	LO -2, LO -3, LO -8
BD		Pre-diploma practice	8	4	4	LO -1, LO -3, LO -6, LO -7
BD		Language practice	8	1	1	LO -5, LO -10
11.1. Module-Modern technologies, 8 academic credits						
PD UC	ITDRTM 4309	IT and digital resources in teaching mathematics (in Russian)	7	5	5	LO -2, LO -8, LO -9
BD EC	TPISATGMATG RE 4219	Technologies for preparing for the international SAT, GMAT and GRE exams (in English)	7	3	3	LO -2, LO -5, LO -10
11.2. Module-Innovative technologies, 8 academic credits						
PD UC	ITDRTM 4309	IT and digital resources in teaching mathematics (in Russian)	7	5	5	LO -2, LO -8, LO -9
BD EC	ME 4219	Management in Education	7	3	3	LO -2, LO -8
12.1. Module-Geometry of curves and surfaces, training in a small school, 10 academic credits						
PD EC	OTMSS 4310	Organization of teaching mathematics in a small school	7	4	4	LO -3, LO -4, LO -5, LO -8
PD EC	ThCS 4311	Theory of curves and surfaces	7	5	5	LO -1, LO -3, LO -6, LO -7
12.2. Module-Advanced mathematics, 10 academic credits						
PD EC	SIP 4310	Series and infinite processes	7	4	4	LO-1, LO-3, LO-5, LO-7, LO-10
PD EC	NM 4311	Numerical methods	7	5	5	LO -1, LO -4, LO -6, LO -7

8.2 Matrix of the ratio of discipline and learning outcomes (below)

№	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
1.	Foreign language										+
2.	Kazakh (Russian) language										+
3.	The modern history of Kazakhstan								+		
4.	Philosophy								+		
5.	The module of the social and political knowledges								+		
6.	Information and communication technologies									+	
7.	Ulttyq rýhanıat								+		
8.	Elementary Mathematics			+			+				
9.	Educational practice			+						+	
10.	Language practice					+					+
11.	Physical education								+		
12.	Fundamentals of Algebra	+		+			+				
13.	Foreign language (B1)					+					+
	Foreign language (B2)					+					+
14.	Practicum on solving problems of algebra (in English)	+					+				+
15.	Elementary geometry (in English)	+					+				+
16.	Digital Technologies in Education (in Russian)					+		+		+	
17.	Analytic geometry	+		+			+				
18.	Mathematical analysis: functions of one variable	+		+			+				
	Mathematical analysis: functions of many variables	+		+			+				
19.	Number theory for solving Olympiad problems					+	+	+			+
20.	Academic Integrity (in Russian)	+		+			+				
21.	Bases of Geometry	+					+			+	
22.	Differential and integral calculus: functions of one variable	+		+			+				
	Differential and integral calculus: functions of many variables	+		+			+				
23.	Algebra and Number Theory	+		+			+				
24.	Pedagogy		+						+		
25.	Methods of Teaching Mathematics		+	+		+			+		
26.	Pedagogical practice		+	+					+		
27.	Pedagogical Skills		+						+		
28.	Academic letter							+			
29.	Solving Olympiad Problems of Mathematics (in Russian)					+	+	+			+
30.	Robotics and mechatronics in education (in Russian)	+						+		+	

31.	Solving mathematical problems in a programming environment (in Russian)	+					+			+	
32.	Differential Equations (in English)	+					+				+
33.	Methods for solving planimetric problems (in English)			+		+					+
34.	Probability Theory and Mathematical Statistics	+		+			+				
35.	Physics (in Russian)				+		+				
36.	Methods for solving Stereometric problems (in Russian)			+			+	+			
37.	Classical inequalities and their applications (in English)					+	+	+			+
38.	Ordinary Differential Equations (in English)	+					+				+
39.	The method of coordinates in the plane and in space (in English)			+		+					+
40.	Theory of Probability and random processes	+		+			+	+			
41.	General course of physics (in Russian)				+		+				
42.	Functional analysis (in Russian)			+			+	+			
43.	Additional chapters of mathematical analysis (in English)	+			+		+	+			
44.	Foreign language (C1)					+					+
45.	Inclusive education		+						+		
46.	Technology of criterial estimation		+						+		
47.	Discrete Mathematics and Mathematical Logic (in English)	+					+	+			
48.	Methods of teaching statistics and probability theory			+	+	+					
49.	Pre-diploma practice	+		+			+	+			
50.	IT and digital resources in teaching mathematics (in Russian)		+						+	+	
51.	Technologies for preparing for the international SAT, GMAT and GRE exams (in English)		+			+					+
52.	Management in Education		+						+		
53.	Organization of teaching mathematics in a small school			+	+	+			+		
54.	Theory of curves and surfaces	+		+			+	+			
55.	Series and infinite processes	+		+		+		+			+
56.	Numerical methods	+			+		+	+			
	Total	**23**	**9**	**23**	**6**	**15**	**29**	**15**	**14**	**7**	**17**

9. Summary table reflecting the volume of credits disbursed by modules of the educational program (full-time education, training period 4 years)

Course	Term	Number of modules mastered	Number of studied disciplines		Number of academic credits							Number of academic hours	Number of academic credits	Number of exams	Number of differential credits / reports
			CC	EC/UC	Theoretical training	Educational practice	Pedagogical practice	Internship (Language practice	Pre-diploma practice	Physical education	Final attestation				
1	1	3	6	1	30					2		960	32	7	1
	2	3	5	1	24	1		1		2		840	28	6	3
2	3	4	-	6	28					2		900	30	6	1
	4	4	-	5	25		2	1		2		900	30	5	3
3	5	3	-	6	29							870	29	6	-
	6	2	-	6	26		4	1				930	31	6	2
4	7	3	-	6	27		6					990	33	6	1
	8	-	-	-	-		10	1	4		12	810	27	-	3
Total:		**12**	**11**	**31**	**189**	**1**	**22**	**4**	**4**	**8**	**12**	**7200**	**240**	**42**	**14**

10. Resource support of the educational program

The resource support formed based on the requirements for the conditions for the implementation of bachelor's degree programs in the field of training 6B01501-Mathematics:

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

Staffing

The implementation of the main educational program of the bachelor's degree in the direction of training 6B01501-Mathematics is provided by scientific and pedagogical personnel corresponding to the profile of the taught discipline, and systematically engaged in scientific and methodological activities.

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

The total number of full-time teachers at the Department of Mathematics is 24 teachers, including 2 doctors of sciences, 12 candidates of sciences and 8 masters. The share of full-time teachers from their total number, including the cycles of basic and profile disciplines of the state mandatory standard of education is 88%, the share of teachers with academic degrees and titles from the number of full-time teachers is 58 %.

Educational, methodological and informational support

Educational, methodological and informational support includes typical and working curriculum of the discipline, Educational and methodological complex of disciplines, syllabus, control and measuring materials, active handouts, didactic materials, regulatory documents, regulating types of educational activities.

The educational program for EP 6B01501-Mathematics provided with educational and methodological documentation and materials for all academic disciplines of the curriculum, including typical and working curriculum of the discipline, Educational and methodological complex of disciplines, syllabus, control and measuring materials, active handouts, didactic materials etc.

Each student has access to the Internet, including the university's electronic library, Aktobe branch "Republican Scientific and Technical Library", Kazakhstan National Electronic Library, Web of Knowledge (Thomson Reuters) and Web of Science, Scopus, Springer and 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, students have contractual access to the AB RLST fund, including access to the RSL dissertation fund. Educational, methodological and informational support of the educational process meets the requirements of higher education.

Material and technical support

When implementing EP 6B01501-Mathematics, the material and technical base is used, providing all types of classes, which are provided by the working curriculum and in accordance with the current sanitary and fire safety rules and regulations.

For the implementation of EP 6B01501-Mathematics, the Faculty of Physics and Mathematics has the necessary classroom fund, methodical and specialized classrooms («Classroom of Theory and Methods of Teaching Mathematics», «Nominal audience of Doctor of Physical and Mathematical Sciences, Professor Umbetzhanov D.U.», «Multilingual classroom»), computer classes and special laboratories («Streaming data analytics and machine learning», «Computer system architecture and personal computer modernization», «Information systems and database management systems», «Computer modeling and numerical methods», «Software development tools», «System Programming», «Algorithmization and programming technologies», «Computer graphics», «Mechanics and molecular physics», «Electricity and magnetism», «Atomic physics»).

These classrooms meet the sanitary and hygienic standards required for classrooms of higher educational institutions of the Republic of Kazakhstan. The existing classroom fund of the EP fully meets the need for educational facilities for students of 1-4 courses.

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

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 issues of academic discipline, culture of behavior, appearance of students, fostering patriotism, citizenship, sense of responsibility, decency, honesty, loyalty to professional duty, obedience to the law, respectful attitude towards 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 education and the formation of a healthy lifestyle
- education of ecological culture
- labor education

As a basic normative document of the organization of the educational process at the university, the Concept of educational work and intra-university regulatory documents have been developed, such as, the Regulation «On Self-government», Regulations «On the organization of educational work in the K. Zhubanov ARU», Regulation «On the Council for the Prevention of Offenses», Regulation «On the Council of Curators», Regulation «On curatorial work», Regulation «On the School of Legal Knowledge», Regulation «On the sports club», Regulation «On the Debate Club», etc.

A department for educational work and youth policy has been created in order to organize educational work at the university, which includes a department for work with students and youth organizations and the department for social and cultural work, in addition, the university has a student administration, student council dormitory, Headquarters of student labor detachments, Council of Curators, sport Club, The Council for the Prevention of Offenses, etc.

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

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

For the harmonious development of the personality, contributing to the strengthening of the moral, civil, patriotic and general cultural competencies of students and undergraduates, K. Zhubanov ARU operates: the Debate Clubs «Rhetor», «Zaman Bizdiki», School of legal knowledge, student theater "Zhubanov zhastary", Club of young poets «Tarazy», «English-club», «Educationclub», «Universialprogrammer-club», KVN club, student legal clinic «Femida», charitable club «Umitin uzilmesin», volunteer club «Zhubanov zhyluy», dance clubs «ARSU STAR» and «Big Fam», School of Public Service «Mansap», sports sections, etc.

AGREED

Head of the KSU «Secondary school-gymnasium №21 with teaching in three languages» Aktobe	M. K.Toyshymanova
Head of the KSU «Aktobe Regional Specialized Physics and Mathematics Boarding School» Aktobe	K. E. Tleumagambetova
Head of the KSU «Aktobe Lyceum Bilim Innovation»	K. N. Kuralbayev
Head of the secondary school №35, Aktobe	B. D.Yerzhan
Head of the secondary school №3, Aktobe	Sh. K. Omirzakova
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Approved by the academic methodical council of the university Minutes № ____of «____» ____ 2021