6B01515 - Mathematics

The purpose of the educational program: Training future teachers who want to specialize as a mathematics teacher (in schools, colleges, universities), in demand in modern society, who can quickly navigate the constantly changing conditions in the field of education and meet the requirements for a competitive teacher

VISION, MISSION, PROGRAM GOAL, VALUES, UNIVERSITY GRADUATE ATTRIBUTES

Vision:

An intellectual platform that develops educators who are open to new ideas and able to lead in a rapidly changing world.

Mission:

Developing teacher leaders, who can create, develop, and disseminate advanced knowledge and values in education for the benefit our country and the world.

Program goal:

Our University aims to become a hub for innovative teaching, learning, research as well as the development of rural education in Central Asia.

Values:

Integrity, commitment, care.

University graduate attributes:

- Self-guided learners and reflexive practitioners
- Responsible personalities with moral and ethical values
- Professionals with deep subject knowledge and digital skills
- Creative and critical thinkers and excellent team players and communicators
- Adaptive leaders in teaching and learning
- Diverse, inclusive and for equality of opportunity in society

THE RATIONALE BEHIND THE EDUCATION PROGRAM

In the context of the Education Modernization Project funded by the World Bank, several universities providing pre-service teacher education have designed and revised in international collaboration thirty (30) pre-service teacher education curricula according to the principles of competence-based education that ensure a holistic development of pre-service teachers' competences. Moreover, the student-centered approach better prepares pre-service teachers to teaching profession by providing practical examples, experiments and experiences, which pre-service teachers can transfer to their classroom practices considering better the versatile needs and wellbeing of their students.

In order to match the requirements of the renewed primary and secondary education, teachers' professional competences need to be re-evaluated and completed. The new approaches in secondary education need to be reflected in pre-service teacher education and the pre-service teachers' profiles. Furthermore, these thirty (30) revised or new pre-service teacher education curricula have been designed to better improve pre-service teachers' various generic

competences that are essential in teacher's profession. Several important and cross- cutting pedagogical principles that Kazakhstan education system aims to develop, such as inclusiveness and interdisciplinarity, have been taken into consideration in the design and implementation of the curricula. In addition, these curricula emphasize the development of pre-service teachers' research skills in a way that they become practitioners who are constantly reflecting and evaluating their own practices and the practices of their schools to develop their own work and their work community, and the whole sector of education.

DISTINCTIVE FEATURES OF THE EDUCATIONAL PROGRAM

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GRADUATE CAREER OPPORTUNITIES

A graduate of the educational program 6B01515-mathematics can work as a mathematics teacher in educational and scientific institutions, institutions of additional education and educational centers.

AREAS OF PROFESSIONAL COMPETENCE

Areas of professional competence 1
Pedagogical and Generic Competence Areas

Areas of professional competence 2
Subject-specific and Generic Competence Areas

Areas of professional competence 3
Compulsory component: Competence Areas

EDUCATIONAL PROGRAM LEARNING OUTCOMES

LO 1 - possess intercultural and communicative competence, apply skills of independent continuation of further education and build professional relationships in pedagogical and social activities; purposefully use means and methods that ensure the preservation and strengthening of health in professional activities

LO 2 – to collect and interpret information for the formation of knowledge, taking into account social, ethical and scientific considerations, critically evaluate their values, attitudes, ethical principles and teaching methods, set new goals for their own pedagogical development

LO 3 – critically select theoretical knowledge based on advanced concepts of pedagogical education using various information and communication technologies and use the knowledge to improve the skills of teaching mathematics and their own professional growth

LO 4 – to understand the psychological and pedagogical problems of teaching and educating students with disabilities in inclusive education, to take into account the diverse abilities of students in the learning process, to ethically support their psychological well-being in the life and educational context

LO 5 – to recognize and understand fundamental scientific concepts that have fundamental methodological and theoretical significance for understanding and mastering natural and mathematical sciences, to argue their own position of applying and integrating knowledge from other fields of sciences to solve global and local problems of mathematical education

LO 6 – to comprehensively and objectively cover the main stages of the history, evolution of the forms of statehood and civilization of the Kazakh people, to know the methods of scientific research and academic writing, to understand the importance of the principles and culture of academic honesty
LO 7 – to generalize and analyze cause-and-effect relationships between phenomena and processes occurring in human life to interpret the idea of unity and integrity of science
LO 8 – to understand the features and properties of solving mathematical problems and choose the best methods and approaches to its training
LO 9 – apply IT to expand one's own worldview of modern society and develop demonstration experiments and practical works, use CLIL technologies for subject-language teaching of natural subjects, expanding students' intercultural knowledge to develop tasks for the development of analytical and critical thinking
LO 10 – to apply theoretical and practical knowledge to solve educational, practical and professional problems in the field of mathematical education, to design the conditions of educational activity in accordance with the set goals of teaching mathematics, using modern pedagogical technologies
LO 11 – to use modern and effective methods for conducting research in the educational process to identify problems in the assimilation of material by students and apply the knowledge and skills gained in practice
LO 12 – to systematize and generalize the acquired knowledge in mathematics for their application in future professional activities, to model educational processes for conducting research, experiments and obtaining their results

Matrix for correlating EP learning outcomes with graduate attributes

	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8	LO 9	LO 10	LO 11	LO 12
GA1	+	+	+					+		+	+	+
GA 2		+		+		+	+		+			
GA 3		+	+		+			+	+	+		+
GA 4	+				+	+				+	+	
GA 5	+		+	+	+		+		+			+
GA 6				+		+	+				+	

REFERENCES

The educational program is developed based on the following legal acts:

1) Professional standard has been used at developing EP
2) Developed on the basis of the SOCED RK by 20.07.2022 № 2