

The purpose of the educational program is to train intellectual leaders who broadcast innovative ideas.

1.1 GENERAL INFORMATION

Type of educational program	current
Name of the educational program	"7M01509-Chemistry "
Field of education	7M01 Pedagogical Sciences
Training direction	7M015 Training of teachers in natural science subjects
The group of the educational program	M013 Training teachers of Chemistry
License to engage in educational activities	The Educational program is implemented on the basis of the Appendix to the License № KZ04LAA00017104 dated September 27, 2019 in the direction of training 7M015 Training of teachers in natural science subjects («7M01509 Chemistry») issued by the Committee for control in the field of education and science of Ministry of Education and Science of the Republic of Kazakhstan.
Number and Date of Registration/ Update in the Register of EP	7M01500147, 19.08.2019
UNT Subjects	
Educational level by NQF	level 7, Master's Degree
Awarded degree	Master of Education in the educational program «7M01509 Chemistry»"
Accreditation	Independent Agency of Accreditation and Rating, No.12018901 certificates, date of issue: 05/24/2019, validity period of accreditation: 05/23/2024 (5 years)
Rating of the educational program	State license: 4, /2016, 2017, 2018, 2019
The total amount of academic credits	90
Study duration	1,5 years

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

Vision:

The University as a unique and prestigious scientific and educational center, contributing to the successful implementation of initiatives in education and science.

Mission:

Preparation of highly qualified pedagogical personnel who contributes professionally to the development of human capital of the country.

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, dedication to one's work, caring for others

The Purpose of the Educational Program: Preparation of competitive doctors of philosophy (PhD) who are capable of independent development in the professional sphere, who have deep knowledge of the theory, methodology and practice in the field of chemistry and possess the skills of research and teaching in the field of chemistry.

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

1.3 THE RATIONALE BEHIND THE EDUCATION PROGRAM

Justification:

The Relevance of the EP.

The relevance of EP is explained on the one hand by the active development of the chemical direction based on the integration of the two sciences taking into account interdisciplinary links. On the other hand, the competitiveness of double-profile personnel, including in education, is increasing.

The need of the market.

The need for teachers of chemistry is relevant, especially in the context of the updated content of secondary education, requiring a teacher who is motivated for his or her professional activity, mobile, socially active and in demand on the labor market.

The need for teachers in chemistry at daytime state general education schools in the Republic of Kazakhstan is 271 people, which indicates the need for training of teachers-chemists and biologists. Thus, despite the positive changes in the system of training and development of teachers, there are still a number of problems that negatively affect the attraction and retention of qualified teachers. In this regard, the Program provides measures to solve problems in the development of the country's pedagogical potential.

1.4 DISTINCTIVE FEATURES OF THE EDUCATIONAL PROGRAM

Academic mobility	Niide Halisdemir University (State of Turkey, the city of Niide)
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By 2022, teacher-training programs will be fully updated to reflect the professional standard.
Coincidence with Similar Results of Leading Universities of Neighboring and Distant Countries.

Kazan Federal University - 75 %

Sankt Petersburg state University - 75 %

1.5 GRADUATE CAREER OPPORTUNITIES

Types of Professional Activity: Doctors of education in the educational program «7M01504 Chemistry» can carry out the following types of professional activity:

- educational and pedagogical: working as teachers of chemistry in higher educational institutions of the state and non-state sector;

- organizational and managerial, working as heads of departments and various services in scientific organizations, research institutes, as well as various departments and departments of the chemical, pharmaceutical, metallurgical industries, and environmental services;

- production and technology: working in the institutions of the above profiles - research and experimental research: working as specialists and researchers in the laboratories of chemical, environmental, metallurgical, pharmaceutical, petrochemical, gas and coal profiles

1.6 AREAS OF PROFESSIONAL COMPETENCE

Employment Opportunity: Objects of professional activity:

- universities;

- Government bodies in the field of education, chemical industry;

- establishments of control and analytical services, centers of standardization and certification;

- Agencies of natural resources and environmental protection.

1.7 EDUCATIONAL PROGRAM LEARNING OUTCOMES:

LO 1 To present theoretical and methodological foundations of philosophy, management and management of personality psychology; theory and practice of speech professional communication in a foreign language.

LO 2 To explain the methods of management and evaluation of professional qualities of the individual, the system of relations of subjects of the organization of education; to present the results of research in a foreign language.

LO 3 To know and have the skills to apply knowledge in the field of pedagogy, psychology, be ready to ensure the protection of the life and health of students in the educational process and extracurricular activities.

LO 4 To know the fundamentals of physical and colloid chemistry, the thermodynamic bases of chemical processes.

LO 5 To know the main stages and patterns of development of chemical science, an understanding of the objective necessity for the emergence of new trends, knowledge about the system of fundamental chemical concepts and methodological aspects of chemistry, forms and methods of scientific knowledge, its role in the general educational professional training of chemists.

LO 6 To be able to compile thematic plans of elective courses in chemistry for specialized education in accordance with the curriculum of educational institutions, to develop the content and methodological equipment for this course

LO 7 To make a program of scientific research, justifying its goals and objectives; applying methodological tools in the process of scientific research; working with various sources of scientific and practical information; to develop research stages; analyzes the results, justifying recommendations and suggestions.

LO 8 To interpret and compare experimental data obtained using innovative forms of teaching chemistry, to be able to show the role of these forms in the formation of the competence of future specialists.

Attributes of a graduate of NJSC “KNTTU”

AB 1 – Has deep professional knowledge and understanding of the field under study; AB 2 – Has emotional and social intelligence;

AB 3 – Adaptable to global challenges;

AB 4 – Has leadership qualities;

AB 5 – Has entrepreneurial skills, is able to identify and solve problems;

AB 6 – Demonstrates innovative thinking.

Matrix of Correlation of Learning Outcomes for the EP and the Attribute Graduates:

	LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8
AG1			*					+
AG2		*				*		
AG3				*			*	
AG4								
AG5					*		*	
AG6				*				*

1.8 REGULATORY REFERENCES

The program has been developed on the basis of the following normative legal acts:

1) The state mandatory standard of postgraduate education. Order of the Minister of Science and Higher Education of the Republic of Kazakhstan No.2. Dated July 20, 2022.

2) Professional standard "Teacher". Order of the Acting Minister of Education and Science of the Republic of Kazakhstan No. 500 dated December 15, 2022

2. CONTENT OF THE EDUCATIONAL PROGRAM

№	Module code and name	Total number of credits	№	Code and name of the discipline	Academic credit discipline	Dual approach / partner	Cycle/ component
1	GSE module (General Education Subjects)	6	1	ISE 501 Management	2	Department of theory and practice in education	CC UC
			2	ISE 502 Foreign Language (Professional)	2	Department of professional foreign language training	CC UC
			3	ISE 503 Psychology of management	2	Psychology	CC UC
3	Current problems of modern chemistry	9	1	APMCh 501/1 Selected chapters in inorganic chemistry	4	Chemistry	CC OC
				APMCh 501/2 Theoretical Inorganic Chemistry			
			2	APMCh 502/1 Applied foundations of modern organic chemistry	5	Chemistry	CC OC
				APMCh 502/2 Heterocyclic compounds			
3	The main directions of modern chemistry	33	1	MDC 501 Educational technologies and teaching methodology of general chemistry	5	Chemistry	CC UC
				2			
			APMCh 503/2 Spectroscopic analysis methods				
			3	MDC 502/1 Methods of solving problems in high level chemistry	6	Chemistry	MC UC
				MDC 502/2 Experimental tasks for the Chemistry Olympiad			
			4	MDC 503/1 Modern methodological foundations of teaching physical and colloid	6	Chemistry	MC UC
				MDC 503/2 Methods of teaching physical and colloid chemistry			

НАО « КАЗАХСКИЙ НАЦИОНАЛЬНЫЙ ЖЕНСКИЙ ПЕДАГОГИЧЕСКИЙ УНИВЕРСИТЕТ»
Институт Естествознания

			5	MDC 504/1 Methods of using interactive methods of teaching chemistry in the university	6	Chemistry	MC UC
				MDC 504/2 General chemistry and teaching methods			
			6	MDC 505/1 Methodological aspects of teaching the course "Physical Research Methods"	5	Chemistry	MC UC
				MDC 505/2 Kinetics of electronic processes			
4	Fundamentals of scientific research methodology	6	1	BSR 501 Methodology and technology of scientific research	6	Chemistry	MC UC
5	RWM	10	1	RW 6.01 Internship	10	Chemistry	
		18	2	RWM 7 Research work of a master's student, including internship and completion of a master's thesis (RWM)	18	Chemistry	RWM
6	final attestation	8	1	FA-7 Preparation and defense of a master's thesis	8	Chemistry	FA
TOTAL:		90			90		