SOUTH KAZAKHSTAN STATE PEDAGOGICAL UNIVERSITY

ОҢТҮСТІК ҚАЗАҚСТАН МЕМЛЕКЕТТІК ПЕДАГОГИКАЛЫҚ УНИВЕРСИТЕТІ

ЮЖНО-КАЗАХСТАНСКИЙ ГОСУДАРСТВЕННЫЙ ПЕДАГОГИЧЕСКИЙ УНИВЕРСИТЕТ

SOUTH KAZAKHSTAN STATE PEDAGOGICAL UNIVERSITY

Университетінің Ғылыми кеңесінде бекітілген, кеңес төрағасы Оңтүстік Қазақстан мемлекеттік педагогикалық университетінің Басқарма төрағасы-Ректор, т.ғ.к., доцент

Утверждено на Ученом совете университета, председатель совета председатель Правления- Ректор Южно- Казахстанского государственного педагогического университета, к.и.н, доцент

Approved by the University Academic Council, Chairma of the Board-Rector of the So Kazakhstan State Pedagogic University, Candidate of Historical Sciences, Associat Professor

_____Г.Д.Сугирбаева

Хаттама № ___ «_____» 2022 ж. Протокол № ____ «_____» 2022г. Protocol № ____ «_____» 202

БІЛІМ БЕРУ БАҒДАРЛАМАСЫ	8D01504 ХИМИЯ ПЕДАГОГІН ДАЯРЛАУ
ОБРАЗОВАТЕЛЬНАЯ ПРОГРАММА	8D01504 ПОДГОТОВКА ПЕДАГОГА ПО ХИМИИ
EDUCATIONAL PROGRAM	8D01504 TEACHER TRAINING OF CHEMISTRY

Шымкент 2022

EDUCATIONAL PROGRAM 8D01504
TEACHER TRAINING OF CHEMISTRY

Code and classification of the field of education: **8D01 Pedagogical Sciences**

Code and classification of training course: **8D01504 Training of teachers in natural science subjects**

Awarded degree: **Doctor of philosophy (PhD) Doctor of Education in the educational program 8D01504-"Teacher training of chemistry"**

Type of program: **Doctorate, 8 level BS/SBSH/HSBJ**

Total amount of credits: **180 Academic credits**

The educational program was reviewed at the meeting of the council of the Natural Sciences Faculty and recommended for approval by the Academic Council of the University.

Protokol №_____ "_____" 2022 y.

The educational program was approved by the decision of the Academic Council of the University and put action.

Protokol №_____ "_____" 2022 y.

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Agreed:

Member of the Board-Vice-Rector for Academic Affairs _____ Kudysheva A.A.

Member of the Management Board - Acting
Vice-Rector for Research and Innovation _____ Ualikhanov B.S.

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The Working Group on the development of the educational program

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Abbreviations:

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NQF - National Qualifications Framework
IQF - Industry Qualifications Framework
ISCE - International Standard Classification of Education
EP - Educational Program
WC - Working curriculum
PED - Product elective disciplines
KC - Key competencies
LO - Learning Outcomes
ICT - Information and communication technologies
LC - Landmark control
CC – Current control
FG - The final grade
GED - General educational disciplines
BD - Basic disciplines
SD - Specialized disciplines

CONTENT

INTRODUCTION

This educational program (hereinafter - EP) is a normative document of a conceptual nature, based on the goals and values of university education, containing general information about the professional activities of graduates, aims and objectives of EP of competence graduate model, the expected learning outcomes and policies of their evaluation of methods and methods of organization of educational process on the content of the program.

The main directions of EP:

- implementation of the educational policy of the University;

- implementation of trilingual education through the organization of educational process in the Kazakh, Russian and English languages;

- improving the quality of the learning process on the basis of competence approach;

- the willingness of students to educate themselves throughout their lives;

- formation of the outlook of students, develop their creativity, communication, critical thinking, research and information capabilities.

EP is the basis for the development of the following documents:

- Catalog elective subjects (CES);

- Academic calendar of the educational process;

- Individual educational plan (IEP);

- Working curriculum (WC);

- Working curriculum subjects (SYLLABUS);

- Teaching materials disciplines (TMD);

- expected results in the disciplines of learning;

- criteria for assessing the results of training in the disciplines;

- organizing all kinds of professional practice, as well as other documents necessary for the educational process.

1 SHEET OF THE EDUCATIONAL PROGRAM

1.1 Scope of professional activity of graduates

Bachelor of Education OP 8D01504 - "Preparation of teachers of chemistry" carries out his professional activities in the field of education.

1.2 The objects of professional activity of graduates:

- basic and specialized schools;
- specialized schools;
- the organization of technical and vocational post-secondary education.

1.3 Types of professional activity of graduates:

- training;
- educative;
- methodical;
- research;
- social and communicative.

1.4 Objectives of professional activity of graduates

Training:
- training and development of students;
- the organization of educational process in professional activities;
- design and management of the pedagogical process;
- diagnosis, correction and prediction of the results of educational activities.

Educative:
- the involvement of students in the system of social values;
- implementation of educational work in accordance with the laws, the laws, the principles of the educational process, educational mechanisms;
- planning extracurricular educational work;
- addressing specific educational objectives;
- the use of various forms and methods of training and education of students in extracurricular activities;
- liaising with groups of students, subject teachers and parents.

Methodical:
- implementation of methodological support of the educational process;
- planning the content of education at different levels;
- identification of methods for the organization and implementation of the educational process;
- the use of new educational technologies in the learning process.

Research:
- the study of the level of assimilation of the content of education, the study of the educational environment;

- the development of scientific and methodical literature;
- analysis and generalization of the advanced pedagogical experience in the field of education;
- conducting of pedagogical experiment, the introduction of its results in the educational process.

Social and communicative:
- the implementation of cooperation with the professional community and all interested education stakeholders;
- the formation of a multicultural identity;
- creation of favorable conditions for education and development of students and provide them with educational support.

2 SOFTWARE FEATURES OF EDUCATIONAL

Subdivision of higher education, "Preparation of teachers of chemistry" was developed in accordance with the European Qualifications Framework, National Qualifications Framework, the Dublin descriptors, Industry frame of qualifications, professional teacher standards to meet the requirements of the regional labor market and employers.

OP determines goals, expected results, conditions and techniques of the educational process, the realization of quality assessment preparation graduate in this area, the contents of the working curriculum.

3 PURPOSE AND VALUES EDUCATION PROGRAM

3.1 The purpose and objectives of the educational program
The main objective of OP is defined in accordance with the objectives of the Strategic Plan and the development of the University's mission.

***Purpose of the Educational Program*:** Preparation of competitive biology teacher owns the general cultural and professional competences in accordance with the requirements of the labor market and national qualifications systems.

Tasks of the educational program:
- ➢ formation of core competencies needed for effective implementation of the professional activities of students;
- ➢ the formation of social responsibility training based on interpersonal values and professional ethics;
- ➢ bringing the level of quality of education in line with the requirements of national and international standards on the basis of motivation of training to professional development, self-realization;
- ➢ the formation of students' professional knowledge and practical skills based on the updated content of education;

> providing training of highly educated professionals who are actively involved in the modernization of society on the basis of language trinity, functional literacy, healthy lifestyle.

3.2 Values of the Educational Program

The core values defined in the contents of EP:
❖ Kazakhstan patriotism and civic responsibility;
❖ respect;
❖ cooperation;
❖ openness.

4 GRADUATE COMPETENCE MODEL

Core competencies that make up the graduate competence model:

●*cultural competence*: Coordinate their abilities and interests in shaping the worldview and analysis of important personalities from the civil and moral position of the problems (KC1);

●*social and communicative competence*: Shows based on the trinity of languages, functional literacy, healthy lifestyle activities in the renewal of society, the ability to work in a team, in accordance with the requirements of the stakeholders (KC2);

●*organizational and methodical competence:* shows critical thinking and creativity in the use of innovative technology in the planning, organization and activities of the Office in solving complex problems (KC3);

●*research competence:* It argues the results of their research in their professional activities, involving her students (KC4);

●*subject specific competences:* evaluates their skills and interests in accordance with the needs of society, uses the results of current research in their professional activities, are deeply mastering subject area (KC5);

●*developing competence:* in order to improve the professional level, combining their talents and interests with the needs of society, it attaches importance to learning throughout life (KC6);

●*information competence:* understands the nature of the information society and knows how to use ICT to search and processing of information, setting goals and choosing the ways of achieving them, the preparation of project work (KC7).

5 EXPECTED RESULTS training on educational programs
Learning outcomes of OP: Upon successful completion of this OP student must:

LO1: presents the theoretical and methodological foundations of philosophy, management and management of personality psychology;

LO2: explains the methods of management and evaluation of professional qualities of the individual, the system of relations of subjects of the organization of education;

LO3: conducts critical analysis, evaluation and synthesis of new and complex ideas with the introduction of its own unique research to expand the boundaries of the field of science worthy of publication at the national or international level;

LO4: substantiates the goals and objectives of the scientific research program, using methodological tools in the process of scientific research;

LO5: evaluates the importance and professional development of the principles of culture and academic integrity in the technological, social development of a knowledge-based society.

6 POLICY ASSESSMENT OF EDUCATIONAL ACHIEVEMENT

The technology of criteria-based assessment is used for all types of students' educational achievements control (everyday, midterm and final). The assessment is carried out according to the letter-point system showed at the table below

Students' educational achievements point-rating and letter evaluating system, their conversion into the traditional grading scale, ECTS

Evluation by letter system	Digital equivalent	Points (% content)	Evaluation according to the traditional system
A	4,0	95-100	excellent
A-	3,67	90-94	
B+	3,33	85-89	excellent
B	3,0	80-84	
B-	2,67	75-79	
C+	2,33	70-74	
C	2,0	65-69	satisfactory
C-	1,67	60-64	
D+	1,33	55-59	
D-	1,0	50-54	
FX	0,5	25-49	unsatisfactory
F	0	0-24	

The semester long students' educational achievements evaluation is carried out 3 times during one semester every 5 weeks. In each period of the current control, the teaching staff evaluates students at practical, laboratory, seminar, SSW (SSWT/SSW)

and other classes, the total score of each final week of the current control is automatically displayed in the Univer system

The final ranking score for the semester is the sum of 20% of the total sum of the three final weeks of control. It makes up 60% of the final assessment of the student, and he gains the remaining 40% on the exam.

The student will be admitted to the exam only if he scores at least 30 points (passing point $0.2 * (CC1 + CC2 + CC3) \geq 30$ points) from the current control

The result of the interm attestation is calculated by the following formula:

the current control 1 (**CC1**)≤100

the current control 2 (**CC2**))≤100

the current control 3(**CC3**)≤100

Exam (**E**))≤100

Final assessment (FA) = 0,2*(CC1+CC2+CC3)+0,4*E

The conformity of the learning outcomes and assessment methods

Learning outcome	Evaluation method
ON 2, 3	Personal assignment
ON 4, 5	Portfolio
ON 1,2,3,4,5	Practice report
ON 1,2,3,4,5	Boundary control
ON 1,2,3,4,5	Final certification

7 ways and methods of organization of educational process

Organization of educational process is carried out on credit technology based on the choice of studying the discipline, order the development of disciplines and modules.

Tasks of the organization of educational process:

- unification of knowledge;
- creation of conditions for maximum individualization of instruction;
- strengthening the role and effectiveness of independent work of students;
- Identification of educational achievements of students on the basis of an efficient and transparent procedures for their control.

Training opportunities on credit technology:

- the introduction of academic credits system to assess the labor costs of students and teachers in each discipline;

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- participate in the formation of the individual curriculum;
- the choice of subjects and modules in the catalog of elective courses;
- the freedom to choose teacher training;
- the choice of an educational path with the help of student advisors;
- the use of interactive teaching methods;
- academic freedom in the formation of educational programs;
- providing of training necessary teaching and learning materials;
- the use of effective methods of control of educational achievements of students;
- the use of score-rating system of evaluation of educational achievements of each discipline, and other forms of self-study.

The methods and technologies of training:
❖ reflexive techniques considered as a central object of study;
❖ competence-based approach to learning;
❖ role-playing games;
❖ educational discussions;
❖ Case Study;
❖ design methods.

Types of methods and technologies of training to choose the teachers themselves.

internal quality assurance system educational activities aimed at improving the quality of educational services is determined by:
- policy in the field of quality assurance;
- development and approval of ongoing educational programs;
- studentorientirovannym learning, teaching and assessment;
- admission of students, academic performance, recognition and certification;
- teaching staff;
- training resources and support training systems;
- information management;
- informing the public;
- continuous monitoring and periodic program evaluation;
- periodic external quality assurance.

Professional practice
Professional practice is a required component of study the student.
In accordance with the specific OP organizes the following practices:
- training;
- language (voice);
- teaching;
- Production;
- pre-diploma.

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The purpose of the training practice - the acquisition of primary professional competences, including the consolidation and deepening of theoretical knowledge acquired during the training, laying the foundations of research, paperwork and working with business correspondence, acquisition of practical skills and work skills.

Teaching practice is organized for all students, is conducted in accordance with the characteristics and direction of the OP, is considered at a meeting of the department and is reflected in the program of practice.

The purpose of language practice is the formation of students' skills of interpretation and translation, business communication skills and networking, including native speakers.

Language practice is conducted for students engaged in training with knowledge of languages, in English and of multilingual groups.

The purpose of teaching practice - consolidation and deepening of knowledge of general scientific, cultural, psychological and pedagogical, methodical and special disciplines, as well as the formation on the basis of theoretical knowledge of pedagogical skills and competences.

Internship held in institutions, organizations and enterprises, relevant profile training of students.

Undergraduate practice carried out on senior year for students who perform graduate work. Manual pre-diploma practical exercises supervisor of the thesis.

9 CONTENT OF THE EDUCATIONAL PROGRAM

9.1 and the results of training to the EP formed competencies
Learning outcomes define competences of students, formed after the completion of the EP.

Correlation matrix of learning outcomes for EP as a whole generated competencies

	RT 1	RT 2	RT 3	RT 4	RT 5
CC 1	+			+	
CC 2				+	
CC 3		+			
CC 4		+	+	+	
CC 5	+		+		

9.2 Module information

№	Name module's	Components module's	Brief description module's	Results learning module	cycle	Number loans'	Expected competences
1	Required software module specialties	Philosophy and methodology pedagogies	The module is aimed at the formation of ideas about the origin, development and specificity of philosophy and methodology of pedagogy, the main methodological approaches to modern pedagogical research.	– to demonstrate philosophical knowledge about the nature of pedagogical science; – to characterize the methodology and structure of scientific knowledge; – to know and understand modern methodological concepts of pedagogy; – to analyze the internal scientific and social problems of production and reproduction of knowledge on the basis of their own judgments; – apply methods of analysis and synthesis, the ability to abstract thinking in solving professional pedagogical	BD	25	CC1, CC2, CC7
		Academic Writing	The discipline is aimed at developing students' skills of structured presentation of their own ideas, mastering ways of working with various scientific and informational texts, improving the written language culture, improving the professional competence of doctoral students in the field of scientific writing, necessary for the implementation of				

			professional scientific activities and allowing to publish the results of scientific research in journals, indexed in the Scopus and Web of Science databases.	problems. - understands the patterns of written speech, determines the peculiarities of written scientific communication.			
		Methods of Scientific Research	Formation of doctoral students' ideas about the methods of pedagogical research, the organization of research work and the acquired knowledge and skills of research work in their professional activities. Familiarity with the methods of theoretical and experimental research of the problems of pedagogical activity, the study of methods used to develop appropriate pedagogical and methodological models of experimental learning, the use of theoretical knowledge about the basics of educational and pedagogical activity to analyze the results of the application of the developed learning model.	- applies knowledge and understanding on a professional level, solves topical problems of the industry and explains opinion with arguments. - uses theoretical and practical knowledge, research methods to solve educational, practical and professional problems of the industry. - generalizes and interprets information in order to form judgements taking into account social and scientific forecasts: - develops knowledge by acquiring the skills necessary to continue to			

		Pedagogical practice	The latest achievements in the field of teaching methods of organic chemistry, modern pedagogical technologies, scientific methodological foundations of distance learning are considered. Demonstration of the ability to design in the systematization of knowledge about teaching methods that allow you to independently set and solve methodological and pedagogical tasks, bring to colleagues the knowledge and achievements necessary for planning and conducting training sessions, and promote professional development based on knowledge throughout life.	develop the industry independently in the future; - conducts scientific and expert evaluation of the text, adhering to the culture of academic honesty.			
2	Module of methodical and methodological bases of chemistry (MMMOCh 02)	1.Methodological and theoretical bases of teaching organic chemistry in higher educational institutions	The latest achievements in the field of teaching methods of organic chemistry, modern pedagogical technologies, scientific methodological foundations of distance learning are considered. Demonstration of the ability to design in the systematization of knowledge about teaching methods that allow you to independently set and solve methodological and pedagogical tasks, bring to colleagues the	- knowledge and understanding of modern methodological concepts of pedagogy; - uses methods of analysis and synthesis of abstract thinking in solving professional pedagogical problems. - plans training using different training strategies	BD	5	CC1, CC2
		2. Methodological bases of distance learning of organic chemistry in higher educational institutions.					

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			knowledge and achievements necessary for planning and conducting training sessions, and promote professional development based on knowledge throughout life.				
3	Modern aspects of chemical science	1. Methodological aspects of modern inorganic chemistry	The priorities of the development of modern inorganic chemistry, current problems of society are considered. Disclosure of the results of scientific research, the ability to organize problem solving and form critical thinking skills with a scientific view of the knowledge gained;	- uses professional communication skills and ability to work in a team. - substantiates the application in its scientific activity of new scientific developments, research in the field of chemical education; - uses information resources in accordance with the goals and objectives of scientific research;	PD	5	CC3,CC4, CC5, CC6
		2. Features of inorganic chemistry in the development of modern society	Throughout his life, he contributes to the professional development of knowledge-based chemists.				
	Research and development work (NER)	Research practice	*Research practice* is aimed at the formation and development of professional knowledge in the field of chosen specialty, consolidation of theoretical knowledge in the disciplines of direction	– interpret and objectively evaluate scientific information; – to classify the principles of preparation of scientific reviews;	PD		

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			and special disciplines of OP; mastering the necessary professional competencies in the chosen direction of specialized training.	– select the main bibliographic sources using electronic search engines; – to defend their point of view in the formulation of the working hypothesis, the leading idea of the conducted scientific research; – create your own system of research activities, based on modern tools of science.		
		Research work of the doctoral student, including internship and doctoral dissertation	The content of research work of the doctoral student should correspond to the problems of the specialty, be relevant, have scientific novelty and practical significance; be based on theoretical, methodological and technological achievements of science and practice; include modern methods of processing and interpretation of data using information and computer technologies; contain research sections on the main protected provisions.		SRW	

9.3 Information about the modules

№	Name of disciplines	A short description of subjects (30-50 words)	number of cred-	Expected result training (codes)

			its	RT1	RT2	RT3	RT4	RT5	RT6
		THE CYCLE OF BASIC DISCIPLINES **University component**							
1	Философия и методология педагогики Philosophy and methodology pedagogies	Philosophy and methodology of pedagogical science forms worldview, critical thinking, systematic understanding of the scientific picture of the world; knowledge of methodological, theoretical and empirical levels of General scientific and special research. The ability to design, adapt new and complex ideas of modern concepts of pedagogy ensures the implementation of a comprehensive research process in professional activities and the recognition of the results at the national and international levels.	6	+	+	+			
2	Academic Writing	The discipline is aimed at developing students' skills of structured presentation of their own ideas, mastering ways of working with various scientific and informational texts, improving the written language culture, improving the professional competence of doctoral students in the field of scientific writing, necessary for the implementation of professional scientific activities and allowing to publish the results of scientific research in journals, indexed in the Scopus and Web of Science databases	5	+	+	+			
3	Methods of Scientific Research	Formation of doctoral students' ideas about the methods of pedagogical research, the organization of research work and the acquired knowledge and skills of research work in their professional activities. Familiarity with the methods of theoretical and experimental research of the problems of pedagogical activity, the study of methods used to develop appropriate	5	+	+	+			

№	Name	Description							
		pedagogical and methodological models of experimental learning, the use of theoretical knowledge about the basics of educational and pedagogical activity to analyze the results of the application of the developed learning model.							
		THE CYCLE OF BASIC DISCIPLINES **Component of choice**							
4	Methodologi-cal and theo-retical bases of teaching organic chem-istry in higher educational institutions	The latest achievements in the field of methods of teaching organ-ic chemistry, modern textbooks, organizational forms of laborato-ry and practical training are considered. The ability to introduce knowledge into the educational process using new information technologies, the ability to transmit to colleagues the knowledge and achievements necessary for planning, conducting training sessions and vocational training throughout life are differentiated.	5	+	+			+	+
5	Methodologi-cal bases of distance learn-ing of organic chemistry in higher educa-tional institu-tions.	Examines the scientific methodological foundations of distance learning of organic chemistry at the University, modern pedagog-ical technologies. It is focused on the formation of an information system of virtual education in organic chemistry in the education-al process and the ability to transmit theoretical knowledge to col-leagues, achievements for work in the field of science and voca-tional training throughout life.							
		THE CYCLE OF DISCIPLINES **University component / Component of choice**							
6	Methodological aspects of modern	Forms the importance of modern inorganic chemistry in various technological fields, new aspects of reactions in chemical processes , the ability to synthesize and design new	6	+	+	+	+		

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	inorganic chemistry	chemical compounds. The results of scientific research contribute to the ability to organize the solution of problems and the formation of critical thinking skills with a scientific look, the knowledge gained.							
7	Features of inorganic chemistry in the development of modern society	Considering the characteristic features of modern inorganic chemistry, the causes of the emergence of new priorities of development of chemistry, topical problems of society. Orients the role of chemistry in the design of chemical research processes, develops technical means of information transfer to expand the boundaries of science and critically analyze new ideas that deserve publication at the national and international levels.							

8.4 Working curriculum of the educational program