

CHARACTERISTIC OF THE EDUCATIONAL PROGRAM

The purpose of the educational program: Training PhD doctors with in-depth knowledge of the theory, methodology and practice of scientific research in the field of physics

1.1 GENERAL INFORMATION

Type of educational program	current
Name of the educational program	8D05302-Physics
Field of education	8D05 Natural sciences, mathematics and statistics
Training direction	8D053 Physical and chemical sciences
The group of the educational program	D090-Physics
License to engage in educational activities	The educational program is implemented on the basis of the appendix to the License No. KZ75LAA00018542 dated August 04, 2020 in the direction of personnel training 8D05302-Physics, issued by the RSU "Committee for Quality Assurance in the field of Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan".
Number and Date of Registration/ Update in the Register of EP	№ 8D05300004, January 26, 2022
Educational level by NQF	Doctoral degree, level 8
The total amount of academic credits	180
Study duration	3 years

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

Vision:

Be an innovative scientific and educational center.

Mission:

To contribute to the formation of human capital by training female leaders based on the best world practices.

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

1.3. THE RATIONALE BEHIND THE EDUCATION PROGRAM

The educational program 8D05302 "Physics" was developed after a thorough analysis and generalization of educational programs of the world's leading universities, taking into account social demand and the current labor market in Kazakhstan, as well as forecasting future global trends in education and science. Graduates of the educational program 8D05302 "Physics" gain in-depth knowledge in the field of physics, strong research, analytical and pedagogical skills, the ability to conduct independent research, work in a team and create an individual professional trajectory.

The educational program includes all the necessary modern physics courses. EP 8D05302 "Physics" is carried out in the daytime form and amounts to 180 academic credits. The educational program 8D05302 "Physics" is implemented in accordance with the individual curriculum of a doctoral student.

1.4. DISTINCTIVE FEATURES OF THE EDUCATIONAL PROGRAM

Academic mobility	University of Westminster (London, UK)
Double-degree program	University of Westminster MIT (Cambridge, Massachusetts, USA)
Additional education (Minor)	1. Counselor-organizer

Coincidence with similar EP of leading universities in the near and far abroad

- 1) With the Massachusetts Institute of Technology (MIT, USA, No. 1 in the QS University Rankings) - 77%;
- 2 With Stanford University (Stanford University, USA, # 2 in QS University Rankings) - 70%.

1.5. GRADUATE CAREER OPPORTUNITIES

Doctor of Philosophy under the educational program 8D05302-Physics can perform the following types of professional activities: The area of professional activity of graduates who have mastered the educational program 8D05302-Physics includes the solution of problems requiring the application of fundamental knowledge in the field of physics. The objects of professional activity of graduates who have mastered the educational program 8D05302-Physics are: physical systems of various scales and levels of organization, the processes of their functioning, physical, engineering-physical, biophysical, physicochemical, physico-medical and environmental technologies, physical examination and monitoring.

1.6. AREAS OF PROFESSIONAL COMPETENCE (maximum 3-5 areas)

The educational program 8D05302-Physics is aimed at mastering all types of professional activities for which the graduate is preparing.

Area of professional competence 1

The types of professional activities for which the graduates who have mastered the educational program 8D05302-Physics are trained: research activities in the field of physics;

Area of professional competence 2

Teaching activities in the field of physics.

Area of professional competence 3

The educational program 8D05302-Physics is aimed at mastering all types of professional activities for which the graduate is preparing.

1.7. EDUCATIONAL PROGRAM LEARNING OUTCOMES:

LO 1 - They compose written and oral academic texts using the results of the research works carried out for presentation to a wide scientific audience and publication in rating publications

LO 2 – They apply deep theoretical and practical knowledge in solving research problems and are able to work on modern technical installations to obtain analytical and numerical calculation of various parameters

LO 3 – Assess problems, approaches and trends reflecting the current state of alternative energy and energy conservation by applying practical skills in calculating various characteristics of alternative energy sources power plants

LO4 – They argue their own scientific point of view by demonstrating high intellectual activity in describing and conducting research on the holistic picture of the world, astrophysics and cosmology, biophysics of complex systems

LO5 – Develop a methodology for implementing a unified system of commercialization of the results of scientific and applied research and technology transfer from science to the manufacturing sector in order to meet consumer demand and profit taking into account domestic and foreign experience (using the example of their own scientific research);

LO6 – Create mathematical and computer models of complex physical phenomena and processes occurring in various mechanical systems, biological environments using the finite element method

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
GA1	*		*			*			*		
GA 2		*			*	*		*			
GA 3	*	*	*	*			*			*	*
GA 4				*	*		*	*			
GA 5	*	*		*			*		*	*	*
GA 6			*							*	

1.8. REFERENCES

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

1) "Teacher" professional standard (approved by the order of the Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan No. 133 dated June 8, 2017);

2) Sectoral qualification level in the field of education (approved by the minutes of the meeting No. 2 of June 20, 2022 of the sectoral tripartite commission for regulation of social partnership and social and labor relations under the Ministry of Education and Science of the Republic of Kazakhstan).