

**«KAZAKH NATIONAL AGRARIAN RESEARCH UNIVERSITY»
Non-commercial joint-stock company**

**EDUCATIONAL PROGRAM DEVELOPMENT PLAN
«8D08113 – PLANT BREEDING»**

2024-2027

Recommended by the Academic Committee
of the Faculty of Agrobiology
Protocol №10 dated 24.05.2024
Reviewed at the extended meeting of the
Department of Agronomy, breeding and
biotechnology
Protocol №11 dated 15.05.2024

Almaty, 2024

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1. Passport development plan for the educational program «8D08113 – Plant Breeding» on 2024-2027

1	Grounds For developmentsplan development of the EP	Strategy And subject matter plan development EP created based on employers' requests in accordance With educational politics Republics Kazakhstan, strategic plan development of the department specialties "Plant breeding".
2	Main developersplan development of the EP	Urazaliev K.R. k.b.s., assoc. professor Suleimenova S.E. d.b.s., professor Baiseitova G.A. PhD, senior lecturer Employer: Chairman of the Board of LLP «Kazakh Research Institute Agriculture and Plant Growing» Sh. Bastaubaeva
3	Timeframe for implementation of the plan development EP	2024-2027 years
4	Volume and sources financing	State budget and business contract work
5	Expected finalresults implementations plan development of the EP	Educating of highly qualified specialists in the field of plant breeding and pedagogy, who are able to solve practical problems in agrobiological science to create highly productive and high-quality varieties of agricultural plants using the latest information, genomic and bio - technologies and conduct classes in educational institutions
6	The number of appendix to the licenses for the training direction	KZ89LAA00031870 05 August 2021
7	Accreditation of EP The name of the accreditation body The period of accreditation validity	№: AB 4874 IAAR 16.06.2023 г. - 15.06.2028 г.

2 Analytical justification programs

2.1 Information about the educational program.

The content of the educational program is established by the following documents:
«On Education» The Law of the Republic of Kazakhstan dated 27 July, 2007 № 319-III;

Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 №2;

Classifier of training programs for personnel with higher and post-graduate education. Order of the Minister of Education and Science of the Republic of Kazakhstan of October 13, 2018 № 569;

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 of October 30, 2018 № 595;

Rules of the organization of the educational process on credit technology of training. Order of the Minister of Education and Science of the Republic of Kazakhstan dated 12.10.2018 № 563;

Algorithm of inclusion and exclusion of educational programs in the Register of educational programs of higher and postgraduate education. Order of the Minister of Education and Science of the Republic of Kazakhstan № 665 dated December 4, 2018;

Order № 106 of the Minister of Science and Higher Education of the Republic of Kazakhstan dated October 12, 2022. Rules for keeping the register of educational programs, implemented by the organizations of higher and (or) postgraduate education, as well as the grounds for inclusion in the register of educational programs and exclusion from it.

Professional standard: “Production of greenhouse vegetables and berries” Appendix № 10 to the order of the Acting Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan “Atameken” dated October 26, 2022. № 190

Professional standard: for teachers (faculty) of higher and (or) postgraduate education organizations. Approved by order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated November 20, 2023 № 591

Professional standard: “Cultivation of legumes and oilseeds” Appendix № 4 to the order of the Acting Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan “Atameken” dated October 26, 2022. № 190

Professional standard “Production of grain crops” Appendix № 19 to the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan “Atameken” dated December 26, 2019, № 263.

Atlas of new professions:

Agrogeneticist <https://www.enbek.kz/atlas/ru/profession/225>

The goal of the educational program «8D08113 – Plant Breeding» Educating of highly qualified specialists in the field of plant breeding and pedagogy, who are able to solve practical problems in agrobiological science to create highly productive and high-quality varieties of agricultural plants using the latest information, genomic and bio - technologies and conduct classes in educational institutions

The doctoral educational program offers a scientific and pedagogical direction (3 years).

2.2 Information about students.

Currently, under the educational program «8D08113-Plant Breeding» (Doctoral program) 7 doctoral students are studying on a state grant (4 in the 1st year, 2 in the 2nd year, 1 doctoral student in the 3rd year) .

2.3 Internal conditions for the development of the EP. To achieve the above-mentioned goal of the educational program, the faculty has the appropriate material and technical resources:

- lecture halls equipped with computers with installed software and a projector for demonstrating presentations;
- classrooms for practical classes, which also include computer labs with installed software and access to the Internet for disciplines conducted in computer labs;
- multimedia classrooms for conducting foreign language classes;
- for doctoral students to complete independent academic work - access to electronic teaching aids, methodological recommendations for writing dissertations;
- for doctoral students to conduct research work, the graduating department has;
- The financial resources of the educational program are provided by the university budget, as well as by research and international projects;
- information resources are at the disposal of the educational institution and are represented by a library (including electronic publications), access for all students and teaching staff to the Internet, computer software, etc.;
- the staff is fully staffed, in accordance with the development plan of the OP;
- the material and technical base meets the requirements of the State Standard.

Educational and methodological documents for the specialty have been developed in accordance with existing regulatory documents such as state compulsory educational standards, standard curricula for the specialty, working curricula, academic calendars, teaching and methodological complexes for all areas of study, as well as relevant documentation for the training of doctoral students.

The direction of preparation of doctoral dissertations corresponds to the subject of scientific research of the department (initiative topics of scientific research). Particular attention is paid to such issues as increasing the degree level of the teaching staff, their completion of advanced training courses in domestic universities, in universities of the near and far abroad, and research institutions.

2.4 Characteristics of the surrounding society

The University has created conditions for practical training: programs have been developed, the content of which corresponds to the goals and objectives of training specialists; long-term and short-term contracts for conducting practical training have been concluded; during the practical training, managers from the University and the practical training base provide ongoing consultation to the student, guide and help him/her conduct professional activities; upon completion, the reporting documentation of doctoral students is collected and analyzed, work is carried out to summarize the results of the practical training and, together with the approved composition, the commission accepts a report from doctoral students on the results of the practical training in the established manner. The final assessment for the practical training is determined as the assessment of the practical training manager from the enterprise of 100% and the assessment of the practical training manager from the department upon the defense of the report of 100%.

The result of satisfaction of students, faculty and employers with the places, conditions and content of internships, as well as the level of students and teachers is the opinion and feedback of organizations providing bases for internships. After completing a certain type of internship, a survey of doctoral students is conducted in order to identify an assessment of the satisfaction of students with the places and organization of internship, and a survey of the heads of internship bases is also conducted in order to

assess satisfaction with the level of training of students.

Monitoring of the internship and tracking of its organization quality is carried out by the Department of Agronomy, Selection and Biotechnology and the Department of Internship and Employment. As a result of monitoring, the Department of Internship and Employment and the Department formulate recommendations for improving the organization of the internship.

The practice bases for the educational programs of doctoral studies «8D08113-Plant breeding»: JSC «Kazakh Research Institute of Agriculture and Plant Growing», JSC «Kazakh Research Institute of Animal Husbandry and Forage Production», JSC «Kazakh Research Institute of Rice Growing named after I. Zhakhayev», JSC «East Kazakhstan Agricultural Experimental Station» and others.

2.5 Information about the teaching staff implementing the educational program.

The implementation of the doctoral program in the direction is provided by scientific and pedagogical personnel in accordance with the requirements of the State Educational Standard of the Republic of Kazakhstan. The list of scientific and pedagogical workers involved in the implementation of this program is presented in the certificate on the staffing of the educational process and staffing.

Qualitative and quantitative composition of the department's teaching staff:

The Department of Agronomy, Selection and Biotechnology employs 23 teachers, including 3 doctors of science, 13 candidates of science and 5 PhD doctors. The department's degree holders rate is 91%, the average age of the teaching staff is 53 years, 100% of teachers conduct classes in the state language and the language of interethnic communication, and 1 in English.

The teaching staff takes refresher courses every year, which affects the quality of the educational content.

Employment of graduates of «8D08113 - Plant Breeding» is the first recruitment according to the OP, in connection with this there was no graduation.

The faculty of the department works in the direction of developing academic mobility, attracting the best foreign teachers, conducting joint research in the implementation of «8D08113-Plant breeding». All professional information regarding the faculty is available and posted on the KazNARU website: https://www.kaznaru.edu.kz/page/department/?name=agronomiia_selektciia_zhane_biot_ekhnologii&var=okytushyprofessorlar_kuramy_1341&lang=ru

2.6 Characteristics of the achievements of the EP.

The department conducts scientific research on initiative topics, in which doctoral students directly participate. The topics of their doctoral dissertations correspond to this area of scientific research.

In accordance with the requirements of the labour market and at the suggestion of employers, new elective disciplines will be introduced into the work curricula.

3. Characteristics of the problems that the development plan of the EP is aimed at solving, and justification for the need to solve them.

Today the department faces the following problems:

Insufficient proficiency of students and teaching staff in professional English
Insufficient mobility and motivation of teaching staff to use innovative teaching methods

Reduction in the share of the teaching staff of the EP who have the academic degree of Doctor of Biological Sciences and Doctor of Agricultural Sciences due to their age.
Annual increase in tuition fees for the EP

4. The main goals and objectives of the development plan of the EP.

The main goal of the educational program development plan is to improve it in accordance with the vision, mission and strategies of the university, aimed at developing competitive personnel in plant breeding, in demand in the industries and spheres of plant growing in Kazakhstan and in the global scientific and educational space, as well as for the development of a socially oriented, highly cultured and competent individual.

To achieve the goal, it is necessary to solve the following tasks:

№	Task name	Event
1	Improving and improving conditions for obtaining a full-fledged, high-quality professional education	Development of measures to improve educational services for the formation professional competencies and skills
2	Involvement of employers in the process of improving the educational program, determining the professional competencies of the graduate, preparing educational and methodological support for the disciplines proposed by the employer	When updating the content of the EP, include disciplines that meet the needs of the labor market, recommended by employers
3	Establishing strong ties with foreign partners for the purpose of implementing joint scientific research and publishing educational and methodological literature	Implementation of joint scientific research and publication of educational and methodological literature
4	Providing conditions for independent scientific research activities of the student within the framework of conducting research work throughout the entire training and publication process	Inclusion of research work in the EP for the purpose of its development and improvement
5	Organization of consultations for employers and scientists of research institutes in the selection of relevant and practically significant topics for doctoral dissertations, conducting research by doctoral students at the leading research institutes of the republic	Creation of a list of relevant and practically significant topics taking into account proposals from employers and scientists of the research institutes

To achieve the goal, it is necessary to solve the following tasks:

- Creation of an innovative educational environment;
- Expansion of the educational space;
- Attracting talented young people to scientific work;
- Development of multilingual education with the aim of expanding the range of languages studied;
- Development of human resources;
- Development of a system for improving the qualifications of teaching staff;
- Expansion of international cooperation of the university with universities in the near and far abroad within the framework of scientific projects and academic mobility of students and teaching staff;
- Ensuring that graduates are in demand in the labour market;
- It is necessary to update and improve the content of the educational program, modernize the material base of educational laboratories, update the content of lecture materials and laboratory practical training taking into account the latest scientific achievements;
- Improving the system of communication with employers;
- Improving the qualifications of teaching staff in the field of innovative teaching technologies at the national and international levels.

To further increase the number of PhD-qualified faculty members, the university will strengthen its efforts to attract young teachers and doctoral students to scientific research.

Taking into account the further development of the educational program, it is necessary to carry out work to increase the share of the teaching staff with an academic degree; plan to take courses to improve professional qualifications at the international level; increase the number of teaching staff who speak a foreign language to form multilingual education groups; increase the number of scientific papers published in journals with a high citation index; participate in the development and implementation of scientific projects under international grants.

5. Expected final results of the implementation of the development plan of the EP.

Training of highly qualified plant breeders with professional skills in the field of plant breeding, capable of solving theoretical and practical problems of professional activity in modern conditions.

6. Measures to reduce the impact of risks for the EP.

Increasing the number of students, full provision of educational and methodological literature, concluding contracts with business entities for practical training and further employment, timely planned purchase of modern equipment and constant acquisition of modern biological preparations and instruments. Functioning of the biotechnology laboratory at the department.

7. Action plan of the development plan of the EP

№	Events	Form completion	Deadlines
1	Justification and implementation of educational programs that ensure continuous education of students, activation of the introduction of innovations into the educational process	EP doctoral studies	2024-2027
2	Improving the EP with the direct participation of potential employers	EP doctoral studies	2027
3	Improving the qualifications and qualifications of the teaching staff through PhD training and attracting teachers with academic degrees	Share of PPP with academic degrees will make up 95%	2027
4	Providing students with various types of practical training	Agreements with enterprises, Research Institute	2025-2027
5	Publication of educational and methodological literature prepared by the teaching staff of the department and acquisition of educational and methodological literature for students at all levels	Published and acquired by MLP	2026-2028
6	Activation of relations with foreign partners with the aim of implementing joint scientific research and publishing MLP	Projects in progress, published MLP	2024-2028
7	Attracting professors from leading foreign universities to teaching and research activities at KazNARU	Conducting classes	2026-2028
8	Involvement of leading seed breeders in the educational process.	Conducted classes	2026-2028
9	Organization of research by doctoral students in leading research institutes of the republic, including joint ventures with foreign partners	Agreements with research institutes	2025-2028
10	Providing ongoing academic mobility for students and teaching staff	Training and internships in foreign university, certificate.	2025-2028

№	Events	Deadlines execution
1	Formation of a commission for the development of an educational program	2024

2	Development of the goal and objectives of the educational program	2024
3	Definition of doctoral student competencies and EP disciplines	2024
4	Development of a common position on the competencies of the doctoral educational program with employers	2024
5	Development of a common position on the competencies of the educational program of specialty disciplines with employers	2024
6	Formation and coordination of master's student competencies and disciplines of the specialty with Dublin descriptors	2024
7	Formation of an educational program in accordance with professional standards	2024
8	Drawing up an academic calendar and a working curriculum for the specialty in accordance with the developed educational programs	2024
9	Consideration of the educational program at an extended meeting of the department with the participation of employers	2024
10	Review and approval of the educational program by the academic council of the faculty	2024

8. Justification for resource provision of the plan.

- information resources;
- library collection of electronic educational materials and other accessible educational and methodological support;
- personnel
- qualified teaching staff
- material and technical base

9. Mechanism for implementing the development plan of the EP.

Conduct targeted work to increase the number of grants for doctoral studies. To implement the educational program, the department staff will develop catalogs of elective disciplines with the direct participation of employers. Trips for doctoral students to research institutes and higher education institutions in neighboring and distant countries will be organized. Leading scientists from neighboring and distant countries will be invited to conduct lectures and practical classes for doctoral students.

10. SWOT analysis

S (strength) – strengths <ul style="list-style-type: none"> • availability of doctoral students with basic competencies in agronomy and plant breeding; • qualitative composition of EPS; • participation of doctoral students in research projects of the research institute. 	W(weakness) – weak points <ul style="list-style-type: none"> • high workload of teaching staff; • low level of scientific developments; • weak level of foreign language proficiency among teaching staff;
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	<ul style="list-style-type: none"> • low level of wages.
O (opportunity) – favorable opportunities <ul style="list-style-type: none"> • the possibility of self-study on international online courses; • cooperation with foreign universities and research institutes in scientific research; • adaptation of the educational program to professional standards, taking into account the interests of key employers. 	T (thread) – threats and risks <ul style="list-style-type: none"> • reduction in the number of doctoral students; • outflow of university graduates and young scientists abroad • low probability of increasing salary levels to a level above the average for universities;

11. Model of a graduate of this EP

Names of EP	8D08113-Plant breeding
Be able to :	<ul style="list-style-type: none"> - Demonstrate a systematic understanding of the methods and approaches to organizing both individual and collective research work, - mastery of the skills and research methods used in a given field. - be able to organize and carry out scientific research work with the division of tasks and responsibilities among the team. - possess the skills to organize team research work. - demonstrate the ability to think, design, implement and adapt - existing research processes in a scientific manner. - make decisions on issues of creating new plant varieties to obtain highly productive and high-quality crops. <p>conduct experiments and research on the development and improvement of methodology, methods of selection scientific research, selection of source material and conducting field work.</p>
Know and understand:	<ul style="list-style-type: none"> - Contribute with original research to expanding the boundaries of a scientific field that merits publication at a national or international level. Have written scientific communication skills. - Be able to develop the ability to express ideas in writing and argue them. - Know the techniques of structuring academic works. Demonstrate the ability to write essays, articles and annotations. - Critically analyze, evaluate and synthesize new and complex ideas. - Understand the state of innovative technologies and methods in plant breeding. Be able to apply modern technologies and technical means in breeding, variety testing and seed production of agricultural crops
Be competent	<ul style="list-style-type: none"> - in the practical use of modern equipment and devices of domestic and foreign production; - in the preparation of reports on scientific research and experimental research work; - in processing the obtained results using computer programs; - in conducting training sessions on the disciplines of the specialty; - in the field of plant breeding.

As a result, the graduate must:

Codes	Learning outcomes of the OP "8D08113-Plant breeding"
LO1	
LO2	Demonstrate the ability to think, design, implement and adapt existing research processes with a scientific approach. Make decisions on the creation of new plant varieties to obtain a highly productive and high-quality crop. Conduct experiments and research on the development and improvement of the methodology, methods of selection research, selection of source material and field work.
LO3	
LO4	Critically analyze, evaluate and synthesize new and complex ideas. Understand the state of innovative technologies and methods in plant breeding. Be able to apply modern technologies and technical means in the selection, variety testing and seed production of agricultural crops.
LO5	To promote knowledge-based technological, social or cultural development of society in the academic and professional context. To evaluate the role of mechanisms of regulation of the production process under stress and the methodology of physiological indicators to increase the resistance of plants to various stressful influences when creating new varieties and hybrids using accelerated and cost-effective innovative methods.

Head of the department

«Agronomy, breeding and biotechnology»

Dean of the Faculty of «Agrobiology»



Y. Zhanbyrbaev



E. Abildaev