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Higher and Postgraduate Educational Programs

☐Project EP

☐Participant of project EP

Date of registration in the Registry

28.07.2026

Registration number

6B08100020

Field of education

6B08 Agriculture and Bioresources

Direction of personnel training

6B081 Agronomy

Group of educational programs

B077 Crop production

Educational program

6B08103 Agrotechnology

EP purpose

Training highly qualified bachelor specialists who are competitive in the labor market and capable of addressing ch the agro-food industry using innovative and interdisciplinary approaches.

EP type

New EP

Level on NQF

6

Level on SQF

6

EP distinctive features

No

Language of education

Russian

Kazakh

multilingual

Professional Standard for EP

Exists

Nº	Name of professional standard
1	Cultivation of legumes and oilseeds
2	Growing vegetables and potatoes
3	Production of greenhouse vegetables and berries
4	Cultivation of sugar beet and its seeds
5	Gardening
6	Nursery garden activities

Professional standards (career standards)

Professional standard has been used at developing EP

☒

Professional standard Nº1



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Approval year2022

CCEA,

Professions

Profession №1

ProfessionАгрохимик

Уровень по ОРК6

Labor functions

Контроль за энтофито- патологическим состоянием семенного и посадочного матери

Осуществление организационной работы агрохимической службы при производстве

Professional standard №2

Professional standardВыращивание сахарной свеклы и ее с

Approval year2022

CCEA

Professions

Profession №1

ProfessionАгроном по семеноводству (средней и

Уровень по ОРК6

Labor functions

Повышение посевных качеств семян

Организация работы по выращиванию высококачественных сортовых семян и посад

Professional standard №3

Professional standardДеятельность питомников

Approval year2022

CCEA,

Professions

Profession №1

ProfessionАгроном-почвовед

Уровень по ОРК6

Labor functions

Управление почвенно-агрохимической подготовкой земель питомников, оценки сост

Оценка и состояния и динамики почвенного плодородия в питомнике

Professional standard №4



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Approval year2022

CCEA', '

Professions

Profession №1

ProfessionАгроном

Уровень по ОРК6

Labor functions

Организация мероприятий по разработке и внедрению передовых агротехнических мероприятий

Выполнение организационно- по производству садовых культур

Организация контроля производственного процесса

Professional standard №5

Professional standardВыращивание овощей и картофеля

Approval year2022

CCEA,

Professions

Profession №1

ProfessionАгроном

Уровень по ОРК6

Labor functions

Проведение мероприятий по выращиванию и первичной обработке продукции растений

Организация производства овощной продукции и картофеля

Внедрение передовых методов и приемов выращивания перспективных сортов овощей

Professional standard №6

Professional standardПроизводство тепличных овощей и ягод

Approval year2022

CCEA

Professions

Profession №1

ProfessionАгроном

Уровень по ОРК6

Labor functions

Проведение мероприятий по выращиванию и первичной обработке внесезонной продукции

Освоение передовых методов и приемов выращивания перспективных сортов овощей

Организация производства овощной и ягодной продукции в теплице



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Degree to be conferred

Bachelor

Period of study

4

Date of approval EP on the Academic Council

27.04.2026

☒Existence of the annex to the license for the direction of personnel training

The license number on the direction of training

KZ49LAM00007465

☐The training format is online

☐EP accreditation existence

Atlas of new professions

Не предусмотрено

Regional standard

<https://enic-kazakhstan.edu.kz/files/1744378861/rl-k-kartasy-zhet-su-oblysy.pdf>

Агроном по точному земледелию

The formed educational outcomes

Nº	Educational outcome	Code	Reflects the labor function
1	Demonstrate	ON	Организация мероприятий по разработке и внедрению передовых агротехнических мерог Организация контроля производственного процесса
2	Evaluate and	ON	Внедрение передовых методов и приемов выращивания перспективных сортов овощных и Организация мероприятий по разработке и внедрению передовых агротехнических мерог Освоение передовых методов и приемов выращивания перспективных сортов овощных и
3	Apply scientific	ON	Внедрение передовых методов и приемов выращивания перспективных сортов овощных и Оценка и состояния и динамики почвенного плодородия в питомнике Управление почвенно-агрохимической подготовкой земель питомников, оценки состояния Освоение передовых методов и приемов выращивания перспективных сортов овощных и
4	Evaluate	ON	Осуществление организационной работы агрохимической службы при производстве зерн Управление почвенно-агрохимической подготовкой земель питомников, оценки состояния Организация мероприятий по разработке и внедрению передовых агротехнических мерог
5	Apply the	ON	Организация контроля производственного процесса Организация мероприятий по разработке и внедрению передовых агротехнических мерог
6	Evaluate the	ON	Оценка и состояния и динамики почвенного плодородия в питомнике Управление почвенно-агрохимической подготовкой земель питомников, оценки состояния Организация работы по выращиванию высококачественных сортовых семян и посадочног
7	Apply the	ON	Управление почвенно-агрохимической подготовкой земель питомников, оценки состояния Организация мероприятий по разработке и внедрению передовых агротехнических мерог Внедрение передовых методов и приемов выращивания перспективных сортов овощных и Проведение мероприятий по выращиванию и первичной обработке внесезонной продукц
8	Analyze land	ON	Управление почвенно-агрохимической подготовкой земель питомников, оценки состояния Организация мероприятий по разработке и внедрению передовых агротехнических мерог Контроль за энтофито- патологическим состоянием семенного и посадочного материала и

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9	Apply modern	ON	Проведение мероприятий по выращиванию и первичной обработке продукции растениеводства Повышение посевных качеств семян Проведение мероприятий по выращиванию и первичной обработке внесезонной продукции Внедрение передовых методов и приемов выращивания перспективных сортов овощных и плодовых культур
10	Use breedin	ON	Организация работы по выращиванию высококачественных сортовых семян и посадочного материала Повышение посевных качеств семян Освоение передовых методов и приемов выращивания перспективных сортов овощных и плодовых культур Выполнение организационно-технических мероприятий по производству садовых культур
11	Organiz e	ON	Организация производства овощной и ягодной продукции в теплице Проведение мероприятий по выращиванию и первичной обработке продукции растениеводства Организация мероприятий по разработке и внедрению передовых агротехнических мероприятий
12	Apply digital	ON	Управление почвенно-агрохимической подготовкой земель питомников, оценки состояния почв Организация мероприятий по разработке и внедрению передовых агротехнических мероприятий Организация контроля производственного процесса

Data on disciplines

Nº	Name of discipline	Short description of discipline	Cycle
1	Basics of Law and Anti-Corruption Culture	Course Objective – to develop students' competencies in law, anti-corruption culture, and inclusiveness, enabling them to comply with the legislation of the Republic of Kazakhstan, make lawful decisions, and carry out professional activities based on the principles of equality, non-discrimination, and respect for human rights. The course provides knowledge of the fundamentals of the constitutional, civil, labor, and administrative legislation of the Republic of Kazakhstan, the legal regulation of economic and financial relations, the principles of anti-corruption policy, financial security, the protection of citizens' property rights, as well as the legal foundations of an inclusive society, equal opportunities, and non-discrimination. It develops skills in applying legal norms to solve professional tasks, making lawful economic and financial decisions, complying with legal requirements in entrepreneurial and financial activities, interacting effectively in an inclusive environment, and fostering zero tolerance for corruption.	GED
2	Fundamentals of Financial Literacy	Course Objective – to develop students’ competencies in financial literacy, the fundamentals of economics, and the legal regulation of financial relations, enabling them to effectively manage personal finances and make informed financial decisions. The course provides knowledge of the principles of financial planning, personal and family budgeting, savings, lending, taxation, insurance, investment, and financial risk management, as well as the economic foundations of the financial system and the legal aspects of protecting the rights of consumers of financial services. It develops students’ skills in analyzing financial information, evaluating financial products and services, making economically sound financial decisions, using financial resources efficiently, and complying with legal requirements in financial transactions.	GED
3	Economics and Entrepreneurship	The purpose of the course is to develop students' competencies in economics, entrepreneurship, and the fundamentals of legal regulation of entrepreneurial activity, enabling them to make economically sound decisions in their professional and social activities. The course provides knowledge of the principles of economic functioning, market economy mechanisms, entrepreneurship, the legal framework governing business activities, business planning, and entrepreneurial risk assessment. It develops skills in analyzing socio-economic processes, designing entrepreneurial initiatives, making managerial decisions, and complying with legal requirements in the implementation of entrepreneurial activities.	GED

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4	Fundamentals of Scientific Research in Agronomy	students on the fundamentals of scientific research in agronomy, including methods of scientific inquiry and the application of scientific achievements in agricultural production. It covers research methodology, methods of conducting agronomic research, contemporary issues in the formation of scientific knowledge, as well as techniques for searching, processing, and formatting research results. Particular attention is paid to compliance with the principles of academic integrity, academic writing, and inclusive interaction in the conduct of research activities. Emphasis is placed on developing skills for the accurate presentation and interpretation of scientific data in a professional environment.	BD
5	Introduction to the Specialty Agrotechnology	The discipline is aimed at developing students’ basic knowledge of the key concepts of agrotechnology, its development trends, and the specific features of professional activity in the agricultural sector. The course covers modern production processes, innovative crop cultivation technologies, the foundations of sustainable agriculture, and prospects for the development of the agrarian industry.	BD
6	Technology of Growing Grain Crops	Studies the latest technologies of growing crops, the impact of each technological scheme of cultivation on the preservation of soil fertility, phytocenosis, yield and quality of products, the possibility of reducing the cost of production while reducing production costs for the use of a certain technology of cultivation.	BD
7	Fundamentals of Breeding and Seed Science of Agricultural	The discipline is aimed at developing students’ systematic knowledge of plant breeding and the fundamentals of seed production for agricultural crops, including the theoretical foundations of breeding, seed science methods, and approaches to determining varietal quality. It covers seed production processes, post-harvest handling, storage, and quality control. Special emphasis is placed on ensuring varietal purity and increasing crop productivity.	BD
8	Fundamentals of Artificial Intelligence	The discipline is aimed at developing students’ basic knowledge in the field of artificial intelligence and its application in agrotechnology, including methods of data analysis, machine learning, and intelligent information processing. The course covers modern digital solutions for agriculture, such as crop yield prediction systems, soil and plant condition monitoring, and the automation of agricultural processes. Special emphasis is placed on developing practical skills in using artificial intelligence to improve the efficiency, productivity, and sustainability of agricultural production.	BD
9	Oilseed Crop Cultivation Technology	The discipline is aimed at developing students’ systematic knowledge of oilseed crop cultivation technology and region-specific types of stubble crops. It covers the chemical composition of seeds, biological characteristics of plants, and conditions influencing yield improvement. Modern technologies for growing sunflower, soybean, and lupin are studied, along with agronomic practices that ensure efficient oilseed production.	BD
10	Fundamentals of Precision Agriculture	The discipline covers the fundamental principles of precision agriculture, GPS and GIS technologies, remote sensing, and the use of drones and sensor systems. Students acquire skills in collecting, processing, and analyzing spatial data from agricultural lands. The course also examines yield forecasting technologies and effective management of fertilizers and water resources.	BD
11	Regional Agricultural Agrotechnology Systems	The discipline is aimed at developing students’ systematic knowledge of regional agrotechnology systems in agriculture, including the rational use of agricultural natural resources and environmental protection. It covers principles of economically efficient allocation of agricultural production, taking into account regional natural and climatic conditions and the sustainable development of agricultural territories.	BD
12	Crop Diversification	The discipline is aimed at developing students’ systematic knowledge of diversification in crop production, including its theoretical and practical foundations. It covers approaches to expanding the range of agricultural crops, rationally combining production directions, and increasing the sustainability of agricultural production. Methods for improving agricultural production efficiency based on diversification and optimizing cropping structure are studied.	BD

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		  ЕДИНАЯ ПЛАТФОРМА ВЫСШЕГО ОБРАЗОВАНИЯ	English  
13	Plant Systematics	plant systematics, classification principles, and morphological characteristics used to identify wild and cultivated plants. It covers the assessment of plant physiological status, adaptive potential, and factors influencing growth, development, and quality. Special emphasis is placed on the classification of agricultural crops and the application of systematic knowledge in agrotechnology.	BD
14	Plant Physiology	The discipline is aimed at developing students' modern knowledge of the general patterns of plant life processes, as well as studying the interrelationships of key biological processes and their dependence on environmental conditions. The course covers mechanisms of plant growth, development, metabolism, photosynthesis, and adaptation to changing environmental factors. Special attention is given to understanding physiological processes at the cellular and organismal levels.	BD
15	Technology of Growing Technical Crops	The discipline is aimed at developing students' systematic knowledge of industrial crop cultivation technology and region-specific types of stubble crops. It covers the chemical composition of seeds, biological characteristics of plants, and conditions influencing yield improvement. Modern technologies for growing sugar beet are studied, along with agronomic practices that ensure efficient production of industrial crops.	BD
16	Ecology, Fundamentals of Life Safety, and Sustainable Development Goals	The discipline is aimed at developing students' systematic knowledge of the fundamentals of ecology and sustainable development, including the study of the concept of the biosphere, the structure and mechanisms of anthropogenic impacts on its components, and current environmental problems. The course addresses issues of protection against harmful environmental factors, the prevention and mitigation of natural and man-made emergencies, as well as the basics of modern weapons of mass destruction. Particular emphasis is placed on developing competencies in life safety and understanding the Sustainable Development Goals as a foundation for the rational interaction between society and nature.	BD
17	Agribusiness Planning and Design	The discipline is aimed at developing students' systematic knowledge of agrobusiness planning and project design, including methods of preparing projects based on the analysis of initial information. It covers approaches to defining agrobusiness goals, selecting means and pathways to achieve them, and comparatively evaluating alternative options. Skills are developed for making well-founded decisions under expected conditions of agricultural sector development.	BD
18	Organization of Agricultural Land Territories	The discipline is aimed at developing students' systematic knowledge of the organization of agricultural land territories, including the development and justification of effective design solutions for the rational allocation of agricultural land resources. It covers methods of performing design calculations using computer technologies, as well as the application of knowledge of land law, geodesy, soil science, and related disciplines in solving land management tasks. Special emphasis is placed on preparing documents for the delimitation of land management objects and analyzing the accuracy of boundary definition for various intended purposes.	BD
19	Business Statistics in Agriculture	The discipline is aimed at developing students' systematic knowledge of business statistics in agriculture, including methods of data collection, processing, and analysis. It covers approaches to identifying relationships between economic and social processes, as well as methods for forecasting the development of the agricultural sector. The use of statistical information and accounting data for evidence-based managerial decision-making in agriculture is studied.	BD
20	Inorganic and Organic Chemistry	The discipline is aimed at developing students' systematic knowledge of the composition, structure, and chemical properties of inorganic and organic substances, as well as the relationship between structure and reactivity. It covers the main types of chemical reactions, their patterns, and the conditions under which they occur. Special emphasis is placed on mastering laboratory experimental methods, developing skills in analyzing chemical processes, and ensuring safe laboratory practice.	BD



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21	Basics of Land Use Planning	land management fundamentals, including the development and justification of effective design solutions in territorial organization. It covers methods of performing design calculations using modern computer technologies, as well as the application of knowledge of land law, geodesy, soil science, and related disciplines in solving land management tasks.	BD
22	Land Reclamation	The discipline is aimed at developing students' systematic knowledge of land reclamation as a set of measures for the rational use of land resources and protection of soils from erosion. It covers irrigation timing and regimes for agricultural crops, requirements for irrigation water quality, as well as negative processes occurring under irrigation and methods for their mitigation. The course also studies the laws of soil fertility reproduction and its effective use to achieve high and stable crop yields.	BD
23	Applied Chemistry	The discipline is aimed at developing students' systematic knowledge of the composition and properties of chemical substances, as well as their practical applications in various fields. It covers the fundamentals of industrial and laboratory chemical processes, principles of chemical reactions, and methods of substance analysis and synthesis. Special emphasis is placed on developing safe laboratory practices and understanding the role of chemical substances in modern technological processes.	BD
24	Cell Technologies in Crop Production and Breeding	The discipline is aimed at developing students' systematic knowledge of cell technologies in crop production and plant breeding, including plant cell culture techniques, tissue culture, and microclonal propagation. It covers the application of cellular biotechnological methods in breeding processes to obtain high-quality planting material and improve economically valuable traits of agricultural crops.	BD
25	Technology of Storage and Processing of Crop Products	The course is aimed at developing students' theoretical knowledge and practical skills in the storage and processing of crop products. It covers technologies for reducing storage losses, methods of agricultural product processing, approaches to ensuring product quality and safety, and strategies for expanding product diversity to enhance the efficiency of agricultural production.	BD
26	Standardization and Certification of Crop Products	The discipline is aimed at developing students' systematic knowledge of standardization and certification of crop production, including procedures for establishing quality and safety requirements for agricultural products. It covers quality control methods, safety indicators, and the regulatory framework for confirming product compliance with established standards. Special emphasis is placed on ensuring the quality and competitiveness of agricultural products.	BD
27	Information Technologies in Crop Production	The discipline is aimed at developing students' systematic knowledge of the application of information technologies in crop production, including the use of information systems and digital tools in the agricultural sector. It covers technologies for collecting, processing, and analyzing agricultural data, as well as their use for improving production efficiency and supporting managerial decision-making.	BD
28	Innovative Technologies in Crop Production	The discipline is aimed at developing students' systematic knowledge of the application of innovative technologies in crop production, including the use of modern scientific advances and advanced agronomic technologies. It covers digital solutions, precision farming methods, biotechnological approaches, and resource-saving technologies aimed at increasing crop productivity and ensuring the sustainability of agricultural production.	BD
29	Plant Genetics	The discipline is aimed at developing students' systematic knowledge of plant genetics, including methods of genetic research and the material basis of heredity. It covers the mechanisms of reproduction in prokaryotes and eukaryotes, patterns of inheritance and variability, its causes, and methods of investigation. The course also studies the genetic basis of ontogenesis, mechanisms of gene differentiation, gene interactions, as well as the relationship between genotype and phenotype and the stages of individual development.	BD



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30	Irrigated Agriculture	regimes, and irrigation methods. Learners learn the fundamentals of evaluating the water-physical properties of soils and designing irrigation systems. The course also includes water-saving technologies and methods for improving the ecological condition of irrigated lands.	BD
31	Agrometeorology	The discipline is aimed at developing students' systematic knowledge of agrometeorology, including the structure of the atmosphere, air mass movement, and radiative and heat balance. It covers key meteorological elements such as temperature, air humidity, precipitation, evaporation, wind direction and speed, as well as climate conditions and forecasts of their changes. Special emphasis is placed on methods and technical tools for measuring meteorological data and their application in agriculture.	PD
32	Adaptive Technologies Based on Artificial Intelligence in Agrotechnology	The discipline is aimed at developing students' systematic knowledge of adaptive technologies in agrotechnology based on artificial intelligence, including their application in the agricultural sector. It covers methods of agricultural data analysis, modeling, and forecasting to optimize crop production processes. Approaches to improving the efficiency and sustainability of agricultural production using intelligent digital solutions are studied.	PD
33	Agricultural Microbiology	The discipline is aimed at developing students' systematic knowledge of agricultural microbiology, including the study of different groups of saprophytic and pathogenic microorganisms, their morphology, taxonomy, and physiology. It covers the influence of environmental factors on microbial activity, their role in nutrient cycling, and the transformation of organic and inorganic substances in agroecosystems.	PD
34	Biotechnology of Agricultural Plants	Considers modern technologies for the creation of new varieties of cultivated plants, ways to improve their productivity, resistance to adverse environmental factors, as well as the quality of plant products based on cellular and genetic engineering methods.	PD
35	Agriculture	The discipline is aimed at developing students' systematic knowledge of general agronomic practices for cultivating agricultural crops and major farming systems, as well as principles of rational land use. It covers farming systems, methods for improving effective soil fertility, soil cultivation technologies, crop rotation systems, and conditions that ensure plant growth and development. Special emphasis is placed on increasing crop yields through scientifically based agricultural technologies.	PD
36	Fruit and Vegetable Growing	The course develops students' theoretical knowledge and practical skills in modern technologies for the cultivation of fruit, berry, and vegetable crops under the conditions of the Republic of Kazakhstan. It covers regionally adapted varieties, agronomic practices, cultivation techniques for different soil and climatic zones, efficient resource management, and environmentally sustainable production of fruit and vegetable crops.	PD
37	Crop Production	Considers technologies for growing crops to produce products that meet human needs in food, animal feed, raw materials for the processing industry; includes sections: field farming, vegetable growing, horticulture, viticulture, feed production.	PD
38	Soil Science	The discipline is aimed at developing students' systematic knowledge of soil as a natural body, including its structure, composition, properties, and patterns of geographical distribution. It covers soil formation processes, soil development and functioning in natural ecosystems, and its role in the biosphere. Special emphasis is placed on methods of improving soil fertility, rational use, and soil conservation.	PD
39	Agricultural Machinery and Technology	The discipline is aimed at developing students' systematic knowledge of agricultural machinery and technology, including methods for using heterogeneous but complementary machines and implements that ensure the comprehensive mechanization of agricultural production. It covers the principles of mechanization in agriculture, the use of machine-tractor units, and the mastery of operational technologies and rules for performing mechanized field operations.	PD

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40	Protection of Agricultural Crops	crop protection, including the theoretical and methodological foundations of measures for controlling organisms that damage crops and plantings in open and protected environments, as well as cultivated lands and natural vegetation. It covers principles of integrated plant protection, methods for controlling weeds, diseases, and pests, preventing and reducing yield losses, and environmentally safe approaches to regulating harmful organism populations.	PD
41	Use of Equipment and Machines in Agriculture	The discipline is aimed at developing students' systematic knowledge of the use of equipment and machinery in agriculture, including the structure of tractors and vehicles and the operating principles of their main units and mechanisms. It covers the design of basic agricultural machines and their application in crop production. The course also studies the fundamentals of preparing tractors and agricultural machinery for operation and their effective use in plant production.	PD
42	Feed Production	The discipline is aimed at developing students' systematic knowledge of forage production, including the theoretical foundations and practical methods for obtaining high and stable yields of forage crops on arable land. It covers feed harvesting technologies, rational use of forage resources, and ensuring the livestock sector is supplied with high-quality and balanced feed.	PD
43	Meadow and Pasture Forage Production	The course covers the formation of the species composition of natural forage plants used for feeding farm animals, the organization of feed supply, the improvement of meadows and pastures, as well as forage harvesting on hayfields and pastures in various natural and economic zones of the country.	PD
44	Entomology	The discipline is aimed at developing students' systematic knowledge of entomology, including insect body structure, organ functions, life patterns, and diversity of forms. It covers their interactions with the environment, their role in biosphere processes, and their importance in human life. The course studies the fundamentals of agricultural entomology and the practical significance of insects in agricultural production.	PD