MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
RSE with EMR "M.AUEZOV SOUTH KAZAKHSTAN STATE UNIVERSITY" MES RK

AUEZOV
UNIVERSITY
1943

EDUCATIONAL PROGRAM

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THE MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE REPUBLIC OF KAZAKHSTAN

M. AUEZOV SOUTH KAZAKHSTAN UNIVERSITY

« APPROVED»
Chairman of the Board-Rector _____
d.h.s., academician Kozhamzharova D.P.
«___»_____2023 y.

EDUCATIONAL PROGRAM

6B08130- Plant Protection and Quarantine

Registration number	-
Code and classification of the field of education	«6B08 Agriculture and bioresources»
Code and classification of training areas	«6B081-Agronomy»
Group of educational programs	B077- Plant growing
Type of EP	Acting
ISCE level	6
NQF level	6
SQF of education level	6
Language of learning	Kazakh, Russian, English
Typical duration of study	4 years
Form of study	Full time, evening, Distance learning
The complexity of the EP	240 credits
Distinctive features of EP	Dual education
University Partner (JEP)	-
University Partner (TDEP)	-
Social Partner (DE)	Educational and industrial complex «Kaynar Bulak»

Shymkent, 2023

Drafters:

Fullname	position	signature
Yesengeldieva L.K.	Candidate of Agricultural Sciences, Senior Lecturer of the „Plant growing and animal husbandry“ department	
Kurmanova K.T.	Senior Lecturer of the „Plant growing and animal husbandry“ department	
Amirova N.	Student group AP-20-9к	
Sh.N.Orazova	Director of LLP“Kazagronom”	
Zhumzhaev G.	Director of the Branch of the "Turkestan Regional Inspectorate for Variety Testing of Agricultural Crops"	
Akparov S.M.	Director of "Tukym" LLP	

The educational program was considered by the decision of academic committee of “ Agricultural Sciences and Veterinary Medicine” branch
Protocol №_____ from «____» _____2023.

Chairman of theAC _____G.I.Yelibayeva

Considered and recommended for approval at the meeting of Educational and Methodical Council of M. Auezov SKU.
Protocol №_____ from «____» _____2023.

Approved by the decision of the Academic Council of the University
Protocol № _ from «____» _____2023.

CONTENT

1. CONCEPT OF THE PROGRAM

University Mission	Generation of new competencies, training of a leader who translates research and entrepreneurial thinking and culture
University Values	• Openness–open to change, innovation and cooperation. • Creativity – generates ideas, develops them and turns them into values. • Academic freedom – free to choose, develop and act. • Partnership – creates trust and support in a relationship where everyone wins. • Social responsibility – ready to fulfill obligations, make decisions and be responsible for their results.
Graduate Model	• Deep subject knowledge, their application and continuous expansion in professional activity. • Information and digital literacy and mobility in rapidly changing conditions. • Research skills, creativity and emotional intelligence. • Entrepreneurship, independence and responsibility for their activities and well-being. • Global and national citizenship, tolerance to cultures and languages.
The uniqueness of the educational program	• Orientation to the regional labor market and social order through the formation of professional competencies of the graduate, adjusted to the requirements of stakeholders • Practical orientation towards expansive education in the field of agricultural sciences with the transition to a dual education system.
Academic Integrity and Ethics Policy	The University has taken measures to maintain academic integrity and academic freedom, protection from any kind of intolerance and discrimination: • Rules of academic integrity (Minutes of the Academic Council No. 3 dated 30.10.2018); • Anti-Corruption Standard (Order No. 373 n/k dated 27.12.2019). • Code of Ethics (Protocol of the Academic Council No. 8 dated 31.01.2020).
Regulatory and legal framework for the development of EP	1. Law of the Republic of Kazakhstan "On Education"; 2. Standard rules of activity of educational organizations implementing educational programs of higher and (or) postgraduate education, approved by Order of the Ministry of Education and Science of the Republic of Kazakhstan dated October 30, 2018 No. 595 with amendments and additions dated December 29, 2021 No. 614 3. State obligatory standards of higher and postgraduate education, approved by order of the Ministry of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 604; 4. Rules for organizing the educational process on credit technology of education, approved by order of the Ministry of Education and Science of the Republic of Kazakhstan dated April 20, 2011 No. 152; 5. Qualification directory of positions of managers, specialists and other employees, approved by order of the Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan

	dated December 30, 2020 No. 553. 6. Guidelines for the use of ECTS. 7. Guidelines for the development of educational programs for higher and postgraduate education, Appendix 1 to the order of the Director of the Center for the Bologna Process and Academic Mobility No. 45 o / d dated June 30, 2021
Organization of the educational process	• Implementation of the principles of the Bologna Process • Student-centered learning • Availability • Inclusivity
Quality assurance of the Educational program	• Internal quality assurance system • Involvement of stakeholders in the development of the Educational Program and its evaluation • Systematic monitoring • Actualization of the content (updating)
Requirements for applicants	It is established according to the Model Rules for admission to training in educational organizations, implementing educational programs of higher and postgraduate education, Order of the Ministry of Education and Science of the Republic of Kazakhstan No. 600 dated 31.10.2018

2. PASSPORT of the Educational program

Purpose of the EP	Preparation of bachelors with theoretical and practical skills in the agricultural field, with methods and tools in the field of quarantine and plant protection
Tasks of the EP	• formation of socially responsible behavior in society, understanding the importance of professional ethical standards and following these standards; • providing skills and lifelong learning skills that will allow them to successfully adapt to changing conditions throughout their professional career; • providing conditions for acquiring a high general intellectual level of development, mastery of a competent and developed speech, a culture of thinking and skills of the scientific organization of labor in the field of agriculture; • the formation of competitiveness of graduates in the field of production, protection and processing of crop products, to ensure the possibility of their fastest possible employment in the specialty or to continue their education at the next level of study.
Harmonization of EP	• 6th level of the National Qualifications Framework of the Republic of Kazakhstan; • Dublin descriptors of the 6th level of qualification; • 1 cycle of a Framework for Qualification of the European Higher Education Area); • 6th Level of European Qualification Framework for Lifelong Learning).
Connection of the EP with the professional sphere	• Professional standard "Growing vegetables and potatoes" Order of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No.190 dated 26/10/2022. • Professional standard "Horticultural activity" Order of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No.190 dated 26/10/2022. • Professional standard "Growing sugar beet and its seeds" Order of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No.190 dated 26/10/2022. • Professional standard "Production of greenhouse vegetables and berries" Order of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No.190 dated 26/10/2022. • Professional standard "Viticulture" Order of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No.190 dated 26/10/2022. Professional standard "Raw cotton cultivation" Order of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No.190 dated 26/10/2022. Professional standard "Plant reproduction" Order of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" No.65 dated 03/04/2023.
Name of the degree awarded	After the successful completion of this EP, the graduate is awarded " Bachelor of Agriculture " 6B08130- «Plant Protection

	and Quarantine» of the educational program"
List of qualifications and positions	• head of the peasant economy, • head of the agricultural sector; • specialist in the agricultural sector; • junior researcher in research institutions; head and specialist of agricultural and commercial enterprises, quarantine and seed inspections, biofactories, enterprises for the storage and processing of crop and fruit and vegetable products, customs institutions, ecology, environmental protection, scientific institutions, state and administrative bodies in accordance with qualification requirements according to the qualification guide positions of managers, specialists and other employees, approved by order of the Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan dated December 30, 2020 No. 553.
Field of professional activity	• republican, regional, district state institutions of agriculture; • joint - stock companies, production cooperatives, limited liability partnerships, agricultural firms; • farm, individual, collective farms; • experimental research institutions in the field of agriculture; • enterprises for the storage and processing of crop products; • quarantine services.
Objects of professional activity	▪ scientific and reasonable use of the land 's resources s agricultural destination; ▪ knowledge and application of innovative technologies cultivation agriculturally crops, their seed and planting material; ▪ scientifically based calculation of doses and the use of organic-fertilizer first , protection of crops from harmful 's body s: weeds, pests, and diseases of agricultural plants; ▪ natural forage land and their protection; ▪ soil and reproduction of its fertility; ▪ agricultural machinery and equipment used in processing field and garden crops ; • materials and fuels and lubricants for the operation of agricultural machinery.
Subjects of professional activity	• agricultural land ; • organic, mineral pesticides; • Irrigation water; • the soil; • pests and diseases of crops; • weeds; • agricultural plants and their varieties.
Types of professional activity	• production and technological; • organizational and management; • experimental research; • educational activities in secondary vocational schools in the specialty profile.

Learning outcomes	**ER1** Communicates freely in the professional environment and society in Kazakh, Russian and English, taking into account the principles of academic honesty and decency. **ER2** Demonstrates socio-cultural, professional development based on the formation of worldview, civil, spiritual and social responsibility, methods of scientific and experimental research. **ER3** Possesses information, computational and digital literacy with the ability to independently determine the goals of the study and choose ways to achieve it using the analysis and perception of information, generalization of the statistical results of experiments and the formulation of conclusions. **ER4** Reasonably substantiates the selection of crop varieties based on morphological characteristics, physiological state, determining the factors for improving growth, the influence of meteorological factors on the development and quality of products for crop yields. **ER5** Efficiently applies innovative tillage systems for crop rotation, taking into account land topography, groundwater levels, applied fertilizers and tillage machines, based on best practices in agriculture. **ER6** Qualitatively conducts a quarantine examination and assesses the phytosanitary condition of crops, plantings and applies modern methods of disinfection of regulated products, according to the diagnostic map for the effective storage of crop products. **ER7** Assesses the physiological state of plants, the adaptive potential of varieties and hybrids in relation to the soil and climatic conditions of cultivation and determines the factors for improving the growth and development of plants to obtain high yields of high-quality agricultural products, their processing and storage. **ER8** Develops comprehensive control measures to protect crops from pests, taking into account the infestation of crops with weeds, as well as from pests and diseases, effectively using the mechanisms and systems of agricultural machines and technologies for cultivating and harvesting crops. **ER9** Conducts scientific research based on the collection of information from domestic and foreign sources on the technologies of chemical, biological and agrotechnical methods of scientific research and their analysis, uses statistical processing of experimental results and formulates conclusions. **ER10** Diagnoses crop fields for the presence of diseases and readiness for agrotechnical work on processing, control and prevention of pests using biochemical methods. **ER11** Carries out marketing and commercial research in the agricultural markets of crop products and chemical products of agricultural production. **ER12** Works effectively as an individual and as a member of a team, corrects his actions demonstrating self-education and healthy lifestyle skills.

3. COMPETENCES OF THE EP GRADUATE

GENERAL COMPETENCIES Behavioral skills and personality traits	
GC 1. Competence in managing one's own literacy	GC 1.1. The ability to self-learn, self-develop and constantly update their knowledge within the chosen trajectory and in an interdisciplinary environment. GC 1.2. The ability to express thoughts, feelings, facts and opinions in the professional field. GC 1.3. Ability for mobility in the modern world and critical thinking.
GC 2. Language competence	GC 2.1. The ability to build communication programs in the state, Russian and foreign languages. GC 2.2. Ability to interpersonal, social and professional communication in conditions of intercultural communication.
GC 3. Mathematical and Science Competence	GC 3.1. Ability and willingness to apply the educational potential, experience and personal qualities acquired during the study of mathematical, natural sciences, technical disciplines at the university to solve professional problems.
GC 4. Digital competence, technological literacy	GC 4.1. The ability to demonstrate and develop information literacy through the mastery and use of modern information and communication technologies in all areas of their lives and professional activities. GC 4.2. The ability to use various types of information and communication technologies: Internet resources, cloud and mobile services for searching, storing, protecting and disseminating information.
GC 5. Personal, social and academic competencies	GC 5.1. Ability to physical self-improvement and focus on a healthy life to ensure full-fledged social and professional activities through the methods and means of physical culture. GC 5.2. Ability to social and cultural development based on the manifestation of citizenship and morality. GC 5.3 The ability to build a personal educational trajectory throughout life for self-development, career growth and professional success. GC 5.4. The ability to successfully interact in a variety of socio-cultural contexts at school, at work, at home and at leisure.
GC 6. Entrepreneurial competence	GC 6.1. Ability to be creative and entrepreneurial in a variety of environments. GC 6.2. The ability to work in a mode of uncertainty and rapidly changing task conditions, make decisions, allocate resources and manage your time. GC 6.3. Ability to work with consumer requests.
GC 7: Cultural Awareness and Expressiveness	GC 7.1. The ability to show ideological, civil and moral positions. GC 7.2. The ability to be tolerant of the traditions and culture of other peoples of the world, to possess high spiritual qualities.

PROFESSIONAL COMPETENCIES (HARDSKILLS).	
Theoretical knowledge and practical skills specific to this area	PC 1. To have knowledge of the main types of crops, their biological, varietal and economic characteristics, environmental requirements, phyto-sanitary monitoring of pests, diseases and weeds of agricultural lands using modern digital methods and the preparation of an effective plan of protective measures; select a set of crops for crop rotation, taking into account the climatic conditions of the region of cultivation.
	PC 2. To have the methods of calculating the doses of organic and mineral fertilizers for the planned crop determines the method and technology of their application for crops;
	PC 3. To justify and use crop rotation, soil maintenance systems in field crop cultivation; apply weed protection in plantings and crops of field crops.
	PC4. Have knowledge of the selection of crop varieties for specific conditions of the region and the level of intensification of agriculture, prepare seeds for sowing; apply technologies for the production of planting material, bookmarks and crop care.
	PC5.Produce development of agro-technical measures to improve the fertility of soil; to have admission s assessment of soil fertility and reproduction .

3.1 Matrix of correlating learning outcomes in the EP as a whole with the formed competencies

	ER 1	**ER 2**	**ER3**	**ER4**	**ER5**	**ER6**	**ER7**	**ER8**	**ER9**	**ER10**	**ER11**	**ER12**
GC 1	+				+	+			+	+		+
GC 2	+			+								
GC 3		+								+		
GC 4	+		+									
GC 5	+											+
GC 6				+							+	
GC 6	+											+
PC 1				+		+	+	+				
PC 2					+					+		
PC3					+					+		
PC 4				+						+		
PC5					+				+		+	

4. MATRIX OF THE INFLUENCE OF DISCIPLINES ON FORMATION OF LEARNING OUTCOMES AND INFORMATION ON LABOR INTENSITY

№	Module name	Cycle	Component	Component Name	Discipline Summary	Number of credits	Formed ER (codes)											
							ER1	ER 2	ER3	ER4	ER5	ER6	ER7	ER8	ER9	ER10	ER11	ER12
1	Fundamentals of the Public Sciences	GED	OC	History of Kazakhstan	**Purpose: I**sformation of an objective idea of the history of Kazakhstan based on a deep understanding and scientific analysis of the main stages, patterns and originality of the historical development of Kazakhstan. **Contents:** Ancient people and the formation of nomadic civilization. Turkic civilization and the great steppe. Kazakh Khanate. Kazakhstan in the era of modern times. Kazakhstan as part of the Soviet administrative-command system. Declaration of Independence of Kazakhstan. State system, socio-political development, foreign policy and international relations of the Republic of Kazakhstan. Methods and techniques of historical description for the analysis of the causes and consequences of events in the history of Kazakhstan.	5	√	√											
2		GED	OC	Philosophy	**Purpose:** The formation of a holistic idea among students about philosophy as a special form of knowledge of the world, about its main sections, problems and methods of studying them in the context of future professional activity. And also	5	√	√										

					the formation of philosophical reflection, introspection and moral self-regulation among students. **Contents:** Emergence of a culture of thinking. Subject and method of philosophy. Fundamentals of philosophical understanding of the world: questions of consciousness, spirit and language. Being. Ontology and metaphysics. Cognition and creativity. Education, science, technology and technology. Human philosophy and the world of values. Ethics. Philosophy of values. The subject of aesthetics as a field of philosophical knowledge. Philosophy of freedom. Philosophy of art. Society and culture. Philosophy of history. Philosophy of religion. "Mangilik El" and "Modernization of Public Consciousness" are a new Kazakhstan philosophy														
3	Socio-Political knowledges	GED	OC	Social and Political Studies	**Purpose:** The goal of forming knowledge about social and political activities, explaining social and political processes and phenomena. **Contents:** Consideration of the system of socio-ethical values of the society. Ways to use social, political, cultural, psychological institutions, features of youth policy in the modernization of Kazakhstani society and solve conflict situations in society and professional environment based on them. To study the methods of analysis and interpretation of political institutions and	4	√	√											

					processes, ideas about politics, power, state and civil society, to understand and use the methods and methods of sociological, comparative analysis, to understand the meaning and content of the political situation in the modern world. Analysis and classification of the main political institutions.													
4		GED	OC	Cultural Studies and Psychology	**Purpose:** the formation of scientific knowledge of history, modern trends, current problems and methods for the development of culture and psychology, the skills of a systematic analysis of psychological phenomena. **Contents:** Morphology, language, semiotics, anatomy of culture. Culture of nomads, proto-Turks, Turks. Medieval culture of Central Asia. Kazakh culture at the turn of the XVIII - XIX centuries, XX century. Cultural policy of Kazakhstan. State Program "Cultural Heritage". National consciousness, motivation. Emotions, intellect. The will of man, the psychology of self-regulation. Individual typological features. Values, interests, norms are the spiritual basis. The meaning of life, professional self-determination, health. Communication of the individual and groups. Socio-psychological conflict. Models of behavior in conflict.	4	√	√										
5	Socio-ethnic Development	GED	HSC	Ecosystem and Law	**Purpose:** Formation of integrated knowledge in the field of economics, law, anti-corruption culture, ecology and life safety, entrepreneurship, scientific research methods. **Content:** Fundamentals of safe human-	5		√										

					nature interaction, ecosystem and biosphere productivity. The entrepreneurial activity of society in conditions of limited resources, increasing the competitiveness of business and the national economy. Regulation of relations in the field of ecology and human life safety. Knowledge and compliance of Kazakhstan's law, obligations and guarantees of subjects, state regulation of public relations to ensure social progress. Application of scientific research methods.													
6		PD	EC	Actual Problems and Modernization of Public Consciousness	**Purpose: T**he restoration of spirituality, deformed during the periods of tsarist and Soviet reality, the formation of a creative personality based on the modernization of the public consciousness of young people. **Content:** Spiritual modernization: origin and background. Modern national identity. Pragmatism and competitiveness. National identity and national code. Experience and prospects of evolutionary development. The triumph of knowledge and openness of consciousness. Alphabet Reform: Experience and Priorities. Fatherland is the basis of the state. Education through nationwide sacred places and history. Modern Kazakh culture is the cornerstone of spiritual revival. New humanitarian education and the future national intelligentsia. Abai Kunanbaev and Kazakh society.	3	√	√										
7		PD	EC	Abay Study	**Purpose:** based on the creativity of A.Kunanbayev, the preservation of the «national code» and in the project		√	√										

					«Kazakhtanu» **Contents:** historical overview of the history of Kazakhstan and Kazakh literature of the XIX-XX centuries. Studies of Abai's legacy of the XX-XXI century. Chronology of Abai's creativity. Abai is a great poet, ethnographer, founder of Kazakh written literature. Abai is the compiler of the code of laws «The Position of Karamola», social significance. Abai is a thinker, religious scholar, philosopher. The role of Abai in education and science, the concept of a «Holistic person». «Words of Edification»by Abai, an epic novel by M.Auyezova «The Way of Abai» . K. Tokayev «Abai and Kazakhstan in the XXI century», role, significance.													
8		PD	EC	Mukhtar Study	**Purpose:** The life and work of M.O. Auezov is being studied; analyzes the creative laboratory of the writer, his biography in the context of creativity; as the creator of the science of Abaevology; **Content:** Researchers Fat Manas. Acquaintance with M. Auezov as a prominent public figure. The skills of analyzing the literary heritage of M. Auezov in world and eastern literature are developing. They instill feelings of patriotism and love for the homeland.		√	√										
9		PD	EC	Service to Society	**Purpose: T**he formation of socially significant skills and competencies in students based on the assimilation of academic programs, carrying out socially useful activities related to the disciplines studied at the university.													

					Content. The concept and meaning of Service learning, the history of the formation and development of the concept of Service Learning. Key components of Service Learning, socially useful activities in the children's and youth environment, organization of volunteer movement in the world and Kazakhstan practice, profile orientation of Service Learning. International practice of learning through socially useful activities. General principles and methodology for the development of social projects. Methods of analysis of implemented social projects.														
10		PD	EC	Foundations of Anticorruption Culture	**Purpose:** formation of an anti-corruption worldview, strong moral foundations of a personality, civic position, stable skills of anti-corruption behavior. **Content:** Overcoming legal nihilism, formation of the basics of students' legal culture in the field of anti-corruption legislation. Formation of a conscious perception/attitude towards corruption.Moral rejection of corrupt behaviour, corrupt morality and ethics.Development of skills necessary to fight corruption.Development of anti-corruption standards of conduct.Anticorruption propaganda, dissemination of lawfulness and respect for the law. Activities aimed at understanding the nature of corruption, awareness of social damage caused by its manifestation, ability to defend one's position with arguments, seeking ways to															

					overcome manifestation of corruption.													
11	Modul of Communication and Physical Training module	GED	OC	Kazakh (Russian) language	**Purpose:** formation of communicative competence using the Kazakh (Russian) language in the socio-cultural, professional and public life, improvement of the ability to write academic texts. **Purpose:** Levels A1, A2, B1, B2-1, B2-2 (B2, C1 Russian language) are presented in the form of cognitive-linguocultural complexes, consisting of spheres, themes, sub-themes and typical situations of communication of the international standard: social, social - cultural, educational and professional, modeled by forms: oral and written communication, written speech works, listening. Demonstration of understanding of the language material in the texts on the educational program, knowledge of terminology and development of critical thinking.	10	√	√										
12		GED	OC	Foreign language	**Purpose:** a formation of students' intercultural and communicative competence in the process of foreign language education at a sufficient level A2 and a level of basic sufficiency B1. Student reaches B2level of common European competence if the language level at the start is higher than B1level of common European competence **Content:** Levels A1, A2, B1, B2 are presented in the form of cognitive-linguocultural complexes, consisting of spheres, themes, sub-themes and typical situations of international standard'scommunication: social, social -	10	√	√										

					cultural, educational and professional, modeled by forms: oral and written communication, written speech works, listening.Demonstration of language material'sunderstanding in texts on educational program, knowledge of terminology and critical thinking development.														
13		GED	OC	Physical training	**Purpose:** the formation of social and personal competencies and the ability to purposefully use the means and methods of physical culture that ensure the preservation and strengthening of health in preparation for professional activity; to the persistent transfer of physical exertion, neuropsychic stresses and adverse factors in future work. **Content:** Implementation of physical culture and health and training programs. A complex of general development and special exercises. Sports (gymnastics, sports and outdoor games, athletics, etc.). Control and self-control during classes, insurance and self-insurance. Refereeing competitions, Means of professionally applied physical training. Modern health-improving systems: the breathing system according to A. Strelnikova, K. Buteyko, K. Dinaiki, joint gymnastics according to Bubnovsky.	8													√
14		PD	HSC	Professional Kazakh (Russian) Language	Purpose: To form communication skills of future specialists in the professional and cultural-official Kazakh (Russian) language in the field of agriculture. Content: Development of the ability to establish contact at a professional level,	3	√	√											

					competently build communication, based on the goals and situation of communication. Education of creativity, innovation, collegiality in the process of building a program of linguistic behavior in the Kazakh (Russian) language in the field of professional communication.														
15		PD	HSC	Professional Oriented Foreign Language	Purpose: To form the communication skills of future specialists in a professional and cultural-official foreign language in the field of agriculture. Content: Increasing the initial level of foreign language proficiency achieved at the previous stage of education, and mastering by students the necessary and sufficient level of communicative competence to solve social and communicative tasks in the field of professional and scientific activities, when communicating with foreign partners, as well as for further self-education.	3	√	√											
16		GED	OC	Information and Communication Technologies (in English)	**Purpose:** formation of the ability to critically evaluate and analyze processes, methods of searching, storing and processing information, methods of collecting and transmitting information through digital technologies. Development of new "digital" thinking, acquisition of knowledge and skills in the use of modern information and communication technologies in various activities **Contents:** Introduction and architecture of computer systems. Software. Operating systems. Human-computer interaction. Database systems. Data analysis. Data	5	√	√											

					management. Networks and Telecommunications.Cybersecurity. Internet technologies. Cloud and Mobile technologies. Multimedia technologies. Smart technology. E-technologies. Electronic business. Electronic government.													
17	Fundamentals of Natural Sciences	PD	HSC	Agrometeorology	**Purpose:** To train future specialists in the physical processes and phenomena occurring between the atmosphere and its surface, as well as their impact on agricultural production. **Content:** He studies the role of a complex of agrometeorological factors affecting plants and soil. Timely use of forecast data from weather stations and posts in scientific and experimental research and production work. He studies methods for measuring solar radiation, temperature, air and soil humidity, frost, dry winds, pressure, precipitation, wind direction and speed, and analysis of agrometeorological conditions. Develops knowledge about the structure of the atmosphere, the movement of air masses, radiation and heat balance, meteorological elements of climate and forecasting their changes, methods and technical means for measuring meteorological data.	4				√								
186		PD	HSC	Plant Biology	**Purpose:** It consists in teaching the emergence of various forms of plant organisms and their relationship with the standard of living, the role of plants in human life and the biosphere, associated with the stages of evolutionary and	5							√			√		

					ontogenetic **Content:** He studies the role of green plants in nature and agricultural production, their structure, reproduction and evolution, considers the morphological features of pasture and agricultural crops common in the region, their physiological conditions, adaptation and growth, development, factors affecting product quality. . Forms the skills of using morphological analysis to recognize their nature in the analysis of changes in the aboveground and underground parts of plants.													
19		PD	EC	Agricultural Microbiology	**Purpose:** Assimilation by students of knowledge about microorganisms that have economically valuable properties; the main directions of the use of microbiological preparations in agricultural production. **Content:** Forms knowledge on the basics of general and agricultural microbiology and the ability to use the acquired knowledge to solve practical problems of agricultural production: to study the systematics, morphology, genetics, reproduction of bacteria; the metabolism of microorganisms, the participation of microorganisms in the transformations of various compounds; study soil microorganisms and master methods for determining their composition and activity; on the possibility of using microorganisms in agricultural production technologies.	5					√							
20		PD	EC	Biotechnolog	**Purpose:** Assimilation by students of						√							

8				y of Microorganisms	knowledge about the structure of microorganisms, about the physiological processes occurring in their body; mechanisms for stimulating the growth and development of agricultural crops. **Content:** Considers the basic laws of microbiology, soil microorganisms and methods for their determination, microbiological processes for the preparation of organic fertilizers, the development of microbiological production of products, biological products for agricultural purposes. Develops the skills of preparing preparations of microorganisms, distinguishing the main forms of bacteria, carrying out a quantitative account of microorganisms in various substrates, obtaining accumulative, pure cultures of microorganisms, and conducting qualitative reactions to the metabolic products of microorganisms.																
21		PD	EC	Integrated Plant Protection	**Purpose:** Forms knowledge and skills on the theoretical and practical foundations of integrated plant protection, methods for monitoring and optimizing the phytosanitary state of agricultural land, aimed at obtaining a guaranteed yield and product quality. **Content:** Develops the skills of using two or more methods of plant protection to suppress the foci of pests and diseases; the use of pheromones, attractants against plant pests - attracting insects with the help of pheromone traps to determine the period of their appearance, as well as its	4							√	√		√		

					reduction. Efficiency of plant protection against pests and diseases Application of a complex of protection methods														
22		PD	EC	Pesticides and Transgenic cultures	**Purpose:** Forms knowledge and skills on the theoretical and practical foundations of integrated plant protection, methods for monitoring and optimizing the phytosanitary state of agricultural land, aimed at obtaining a guaranteed yield and product quality. **Content:** Develops the skills of using two or more methods of plant protection to suppress the foci of pests and diseases; the use of pheromones, attractants against plant pests - attracting insects with the help of pheromone traps to determine the period of their appearance, as well as its reduction. Efficiency of plant protection against pests and diseases Application of a complex of protection methods								√	√		√		
23		PD	EC	Inorganic and Analytical Chemistry	**Purpose:** Mastering theoretical knowledge in inorganic and analytical chemistry related to the industrial production of economically important products. **Content:** Studying the basic laws, theories and provisions of inorganic and analytical chemistry: classes of inorganic compounds, methods of processing an analytical signal; elements of metrology, standardization and certification in the analysis. Methods and methods for the synthesis of inorganic substances, the skills of describing the properties of substances based on patterns arising from the periodic law and the Periodic system	4		√	√										

					of elements. modern chemical, physico-chemical methods of analysis.													
24		PD	EC	Organic Chemistry	**Purpose:** Forms knowledge about the development of the theoretical foundations of organic chemistry and the acquisition of skills in working with organic substances. **Content:** Studying the main provisions of modern theoretical organic chemistry; principles of classification of organic compounds; rules of systematic, rational and trivial nomenclature; the main methods for obtaining organic compounds of various classes, their physical and chemical properties, methods for isolating, purifying and identifying organic compounds; forms the skills of performing laboratory experiments on the synthesis and study of the physico-chemical properties of organic compounds.			√	√									
25		PD	EC	Introduction to Specialty	**Purpose:** Mastering the main types and methods of plant protection, methods of application in agriculture. **Content:** Forms knowledge about the biological methods of integrated plant protection, about the main agents of biocontrol of pests, diseases, weeds of crops, as well as familiarity with the practical aspects of biosecurity. He studies methods and types of plant protection. Acquires the skills to study a diseased plant, is able to find the focus and nature of infection; make long-term forecasts of the spread of various diseases.	4							√			√		
26		PD	EC	Fundamental	**Purpose:** To familiarize students with the		√	√										

				s of Academic writing	main features of the scientific style of speech; the study of the most common genres of oral and written academic discourse. **Content:** Forms the skills of creating written and oral academic texts based on ideas about their goals, structure, stylistic features, genre differences; mastering the basic principles of communication in the academic environment. It studies language competencies, the possession of which allows the researcher to read, understand and write scientific texts. The rubric contains recommendations for the preparation, writing and publication of scientific texts, reports and publications.													
27		PD	HSC	Educational practice	**Purpose**: Consolidation and deepening of the acquired theoretical knowledge, mastering the necessary skills and abilities. **Content:** Educational practice or introductory practice is one of the student's activities carried out at a certain stage of education. This format provides an opportunity to get acquainted with the details of the future profession, observe the work of current employees and prepare yourself for the main production practice.	1				√					√			
28	Standardization and Business planning in the Agroindustrial	PD	HSC	Standardization, Certification and Metrology	**Purpose:** formation of theoretical knowledge and practical skills in the field of standardization, certification and metrology to solve problems of ensuring the uniformity of measurements and quality control of products, services and works in their professional activities	4			√								√		

	complex				**Contents:** Objects of standardization, certification and metrology. Legislative and regulatory framework for standardization, technical regulation, metrology and conformity assessment systems. General scientific and special methods of standardization. Certification and declaration schemes. Methods and types of measurements. Calculation of errors and uncertainty of measurements. Technical basis of metrology. The role of international management systems in improving the competitiveness of enterprises.													
29		PD	EC	Fundamentals of Agro business and Business	**Purpose:** Students will master the basics of the theory and practice of business in the field of agricultural economy. **Content:** Examines the features of the content of entrepreneurship in the agro-industrial complex. Introduces the features of state regulation of entrepreneurial activity. Forms the skills of creating and registering one's own business, developing constituent documents, agribusiness strategies, business plans. It reveals the mechanism for the formation of business ideas, risk management, evaluation and analysis of the effectiveness of entrepreneurial activity in a particular area or sector of the economy.	4								√			√	√
30		PD	EC	Organization of Production and Business planning of	**Purpose:** To train students in planning agricultural experiments, observations and accounting in experience. **Contents:** Knowledge and understanding												√	

				Protected soil in the Agro-industrial Complex	of patterns, principles, forms of organization of production, forms of entrepreneurial activity, business plan, leasing, commercial activity. Skills for calculating the effectiveness of the application of progressive forms of organization and material incentives for labor; substantiation of the combination of industries in agricultural enterprises; substantiation of the organization of auxiliary and service industries at agricultural enterprises.														
31	General Biology and Plant Protection	PD	EC	Taxonomy of Agricultural plants	**Purpose:** To teach students to evaluate the evolutionary significance of a particular morphological structure characteristic of the object under study, i.e. to understand the plant level and phylogenetic relationships of plant families. **Content:** Studying the basic laws of the taxonomy of agricultural plants, gaining skills in conducting phytosanitary monitoring, a complex of protective measures for agricultural plants from pests, diseases and weeds, as well as quarantine objects; carrying out all stages of quarantine inspection at customs posts.	5				√									
32		PD	EC	Systematics of Flowering Plants	**Purpose:** To teach students the features of the structure, growth and development, systematics and systematization of flowering plants. **Contents:** Know the classification of flowering plants, their morphological characteristics. Determine the species					√									

					composition of flowering plants of agricultural crops, draw up a phytocalendar of flowering plants of agricultural crops for various ecological and geographical zones. He will gain skills in phytosanitary monitoring, a complex of protective measures for agricultural plants from pests, diseases and weeds, and in carrying out all stages of quarantine inspection at customs posts.													
33		PD	EC	Biological Protection of Plants	Purpose: Formation of a system of theoretical and practical training of students on the biological protection of vegetable plants from pests, diseases and weeds. Content: An in-depth study of the relationship between plant pests and pathogens, biological and natural methods of dealing with them are taught. Examines the identification of factors that reduce their number. agricultural crops contamination by pests and the prevention of this information and adopts protective measures.	4							√	√				
34		PD	EC	Protection of Agricultural Cultures from Pests	**Purpose:** To acquaint students with the species composition of pests of agricultural crops and the scientific rationale for reducing their harmfulness. **Content:** Proper and effective use of a complex of agrotechnical, chemical, biological and other methods of plant protection, application of technologies for growing crops in solving problems of crop production, taking into account environmental protection; fixes and								√	√				

					evaluates technologies for planting crops and damage to plants by pests.													
35		Ch.D	EC	Chemical Protection of Plants	**Purpose:** Forms theoretical knowledge and practical skills and abilities in the use of plant protection chemicals in agronomy **Content:** Explores ways to successfully solve the problem of protecting agricultural plants from pests, diseases and weeds based on chemical methods, improving and effectively and safely using chemical plant protection products. Orientation in the modern range of chemistry calculates the needs of the farm, taking into account the composition of plant protection products, cultivated crops and harmful organisms. Examines the rules for the use of pesticides, labor protection and health related to the use of chemicals in agriculture.	5							√	√		√		
36		Ch.D	EC	Protection of Agricultural Cultures from Diseases	**Purpose**: To form a theoretical and practical system for teaching students on the chemical and biological protection of agricultural plants from diseases. **Content:** Studying the basics of plant protection against diseases, the history of development as a science, practical aspects and methods of plant protection against diseases. It uses modern chemical and biological means of protection, resistant varieties that effectively protect agricultural crops, and maintains a satisfactory phytosanitary condition of the								√	√		√		

					field. Considers modern chemical means of protection, materials for the biological protection of crops from pathogens.													
37		PD	EC	Diseases of Agricultural Crops	**Purpose:** To study the biological basis of disease types and reduce their spread and damage to crops. **Content:** Forms knowledge about agricultural phytopathology; symptoms of the most common diseases, biology and methods of combating their pathogens, forecasting and the nature of the distribution in the agrocenosis, as well as biological, chemical, agrotechnical measures to combat them. Acquires the skills to study a diseased plant, is able to find the focus and nature of infection; make long-term forecasts of the spread of various diseases.	4							√	√				
38		PD	EC	Chemical and Biological Protection of Plants	**Purpose:** Forms timely, effective and competent application of measures to protect plants from pests, diseases and weeds using chemical and biological preparations, prevention and prevention of environmental pollution. **Content:** Studying the chemical and biological materials for the protection of crops from pests and diseases. Considers modern methods and methods of pest and disease control. Forms knowledge and skills in the chemical and biological protection of plants from pests, diseases and weeds.								√	√				
39		PD	EC	Pests of Agricultural Crops	**Purpose:** Formation of knowledge, enterprise and pest protection skills, acquaintance with the types of pests of agricultural crops, their distribution area, biological features.	4							√	√				

					Contents: Considers the patterns of infection, the occurrence of foci of pests and diseases; on the morphology and anatomy of pests and measures to protect plants from them; Receives the skills to identify pest species by the nature of plant damage, by the type of their development, ways of their vital activity and distribution; draw up a science-based plan for the implementation of measures for the prevention and destruction of harmful organisms.												
40		PD	EC	Harmful nematodes, mites and rodents	**Purpose:** Forms knowledge about the structure, morphology and anatomy of crop pests. **Content:** Studying the morphology, physiology, ecology, harmful nematodes, mites, a large group of vectors of pathogens and plant damage agents. Skills to independently determine the nature of damage by this group of pests, determine the structure of their oral apparatus to further determine the name and group of pesticides of contact or systematic action, determine the methods, doses and timing of their use.								√	√				
41	Module of Agricultural Direcrion	Ch.D	HSC	Agrochemistry	**Purpose**: To create good conditions for plant nutrition with the help of fertilizers, to study the features of their interaction with the soil. **Contents**: Theoretical foundations of chemicalization of agriculture; problems of plant nutrition, methods of its regulation; studies the basic properties of organic and mineral fertilizers, agrochemical properties of the main types	5					√							

					of soils in Kazakhstan. Taking into account soil fertility, climatic conditions and biological characteristics of agricultural crops, they teach the skills of optimizing the mineral nutrition of agricultural crops with the rational use of mineral, organic, complex mixed fertilizers and ameliorants.													
42		Ch.D	HSC	Selection and Seed production of Agricultural Crops	**Purpose:** To teach the theoretical foundations and practical knowledge necessary for breeding and seed research and the organization of seed production. **Content:** The subject of the study is the scientific and theoretical foundations of breeding and seed production, methods of their application in breeding and seed production practice, methods for obtaining and cultivating varieties of crops adapted to local soil and climatic conditions, resistant to diseases and pests, as well as the organization of the seed production system, seed quality provides information on modern methods of improvement Develops skills by methods of planning the breeding process, selection, creation and study of the source material for breeding; organization of primary seed production of a variety; modern technologies for finalizing seed material and carrying out varietal control.	5				√								
43		PD	EC	Mashine Use in Agriculture	**Purpose:** To teach the basics of the structure, design of agricultural machines and how to use them. **Content:** To study the designs, principles of operation of various agricultural	4									√			

					machines and equipment, including foreign ones. Combined tillage machines and aggregates. The prospect of developing the design of machines for sowing and planting, fertilizing. Modern directions of development of forage harvesters, grain harvesters, processing and processing of agricultural crops.													
44		PD	EC	Crops production Mechanization	**Purpose:** To teach the methods of classification and the principles and mechanisms of agricultural machines, the skills of repair work. **Content:** Studying the classification and principles of operation of agricultural machinery engines, technologies of mechanized work in animal husbandry and crop production, gain experience in disassembly, assembly and adjustment work, learn to identify faults and eliminate them. Forms the skills of technological processes of repair production - maintenance and preventive maintenance of machines.										√			
45		PD	HSC	Plant Breeding I	**Purpose:** To explain the importance of crop production in agriculture. Mastering the basic laws of creating a product, the main provisions (principles) of a commodity orientation. **Content**: It studies the types and varietal forms of field crops, biological characteristics, environmental requirements for their cultivation and methods for growing quality crops. Technically increases the maximum productivity of agricultural products with high quality and low costs, forms the	5				√								

					skills of lean cultivation.													
46		PD	HSC	Plant Breeding II	**Purpose:** Explain to students how to master the laws of product formation, master the methods of using advanced technologies for growing field (vegetable) crops, the correct application of a complex scientifically based system of agro-events in growing major crops. **Content:** Studying the specific and varietal forms of field crops, biology features, requirements for environmental conditions and methods of growing the largest crops of high quality. Forms the skills of innovative technologies for cost-effective cultivation to obtain maximum yields of agricultural products at its high quality and minimum costs.	5				√								
47		Ch.D	EC	Storage and Processing Technology for Crop products	**Purpose:** Students of the plant protection and quarantine program study general plant protection and quarantine prevention in the field of storage and processing; possession of theoretical and practical skills, special innovative methods and tools. **Content:** Drying and cleaning agricultural products after harvest in order to prepare them for storage; economical storage, general phytosanitary and preventive measures to protect against quarantine infections; monitors, regulates and controls the physiological processes occurring in warehouses, pits and stacks during storage in product layers. The course adapts harvested crop products to agronomic education programs and introduces the main stages of generation	6				√								

					of the first fine processing technology.													
48		Ch.D	EC	Storage and Processing Technology Vegetable products and Potato	**Purpose:** To train future highly qualified specialists solve problems related to improvement organization of storage and processing of crop products. **Content:** Explores the application of technologies for the production of vegetables and potatoes for storage and processing. Forms in future specialists solid theoretical knowledge and practical skills in the storage and processing of vegetables and potatoes in providing the population with this type of food. shaving. Mastering the technology of crop conservation requires good erudition, agronomic, technical and other knowledge.					√								
49		Ch.D	HSC	Technological practice I	**Purpose:** Consolidation of theoretical knowledge gained in the study of natural - scientific and professional disciplines; * gaining experience of practical work at the enterprise **Content:** To study the experience in the accumulation, storage and use of fertilizers, the organization of reclamation measures, the system of labor organization and measures developed in the economy to increase its productivity. Obtaining skills during the period of spring field work to get acquainted with the plan of spring sowing, the structure of sown areas.	4							√	√			√	
50	Technology of Cultivation and	Ch.D	EC	Technology of Cultivation of Cultures	**Purpose:** Acquaintance of students with the main environmental factors affecting the yield of vegetable crops, methods cultivation of vegetable crops on protected	4				√						√		

	Production of Plant-growing Products			in the Closed Ground	ground; **Content:** Considers questions compiling and maintaining the fertility of greenhouse soils; aware of the discipline methods of cultivation of individual vegetable crops are considered; studies methods agrochemical and agrophysical analysis of greenhouse soils and calculation methods needs of vegetable crops for fertilizer and irrigation. Considers the technology of growing crops in greenhouses as a branch of vegetable growing and a scientific discipline.													
51		Ch.D	EC	Production of Greenhouse Vegetable and Berries	**Purpose:** Forms students' theoretical knowledge of the influence of environmental factors on the yield of vegetable crops and berries in greenhouses. **Contents:** Ideas about harmful objects, theoretical knowledge, practical skills in building systems of protective measures. Forms knowledge and skills in biology and technology of cultivation of vegetable and berry plants; study of the biological characteristics of vegetable and berry crops, technological methods of their cultivation; the latest production technologies using drip irrigation and fertigation.					√						√		
52		Ch.D	EC	Technology of Cultivation of Cultures in the Open ground	**Purpose:** Obtaining knowledge, the formation of skills, practical skills and professional competencies for growing vegetables, mushrooms and seedlings in various types of open ground by students in this specialty.	4				√	√					√		

					Content: Knowledge and understanding of fruit and vegetable crops and methods of their cultivation, developing intensive technologies for obtaining planting material and horticultural products. For year-round and balanced provision of the population with fruits and vegetables, the production of fruits and vegetables is carried out as in open ground. Receives skills in the development of agricultural technology for the cultivation of fruit and vegetable crops.													
53		Ch.D	EC	Resource-saving Technologies in Adaptive - landscape Agriculture	**Purpose:** Forms knowledge about improving soil fertility through the implementation of various agro-meliorative measures to ensure a sustainable and high yield of crops, economically, environmentally and technologically efficient land use. **Content:** Under the conditions of a market economy, he studies the processes of restructuring the economic mechanism in agriculture, taking into account the resource-saving factor and organizing production on the principles of resource and energy conservation. Forms practical skills to increase production efficiency while reducing costs and minimizing damage to the environment					√	√					√		
54	Module of Dual education	PD	HSC	Soil Science	**Purpose**: Forms an idea of the soil as the main tool for agricultural production, to acquaint students with basic information about the soil, bio-inert system, biogeocenosis as an integral and irreplaceable part of the biosphere. **Content**: Studies the formation,	5					√							

					development, structure, composition and properties of soils, and also develops measures for the protection and rational use of soils. Recognizes the peculiarities of the relationship between soil and biota. The role of soil in the transformation of flora and fauna. Master the skills of the influence of environmental factors on soil processes and dynamics.													
55		PD	HSC	Agriculture	**Purpose:** Explains the types of farming systems (simple, extensive, intensive). To teach the scientific foundations and the main links of the agricultural system. Explain the importance of crop rotation. **Content:** To form knowledge and skills on the scientific and technological foundations of modern agriculture; laws; scientific agriculture; characteristics and features of application in agricultural production. Skills for the use of arable land in order to obtain agricultural products - grain, root crops, hay; on environmental problems arising from the use of intensive chemical-technogenic methods in agriculture and the features of modern methods of farming.	4				√	√							
56		Ch.D	EC	Gardening and Viticulture	**Purpose:** To acquaint future specialists with the technology for obtaining products of horticultural production, its agrotechnical, biological and other specialized special operations and the significance and significance of technological stages, teach them to work independently in production conditions, studying the place and methods of execution.	5				√						√		

					Content: Studying the diversity of melons and grapes, various ways of obtaining melon and viticulture products; the current state of the industry and the prospects for its development; intensive technologies for obtaining planting material and products required for varieties and hybrids of modern melon growing and viticulture. Considers the methods of applying intensive technologies in the cultivation of melons and grapes.													
57		Ch.D	EC	Gardening Activities	**Purpose:** Formation of ideas, theoretical knowledge, practical skills in the rational construction and management of the horticulture industry. **Content:** Forms knowledge and skills of agronomic research and development aimed at solving complex problems in the organization and production, storage and primary processing of products of fruit, vegetable, medicinal and essential oil crops, grapes; design, landscaping and operation of landscape gardening and landscape facilities; creation of new varieties and development of technologies for growing horticultural crops.					√						√		
58		Ch.D	EC	Fruit and Vegetable Growing	**Purpose:** Forms students' skills in growing fruits and vegetables. **Content:** Forms students' concepts of fruit and vegetable growing as a science that studies the biology of fruit and berry plants, their place and role in the ecological system, regular connections with environmental factors and, on this basis, the theoretical foundations being	4				√						√		

					developed necessary to determine the prospects for the development of the industry and create differentiated technology for growing highly productive plantations; and vegetable crops and their cultivation.													
59		Ch.D	EC	Growing of Sugar Beet and its Seeds	**Purpose:** Forms theoretical knowledge on the biological foundations of root beet culture, technologies for its cultivation for processing into sugar and obtaining seed material. **Content:** To study the cultivation of sugar beet in order to increase the productivity and efficiency of the sugar beet complex of the Republic of Kazakhstan. Rules for the use of chemicals in accordance with the instructions for labor protection of workers working with pesticides and chemicals. Applying pesticides at a certain depth to kill weeds in the field. Map of damage to beet fields by weeds.				√						√		
60		Ch.D	EC	Organization of Scientific Research work	**Purpose:** To teach students how to organize scientific research and conduct scientific experiments. **Contents**: The features of science, its goals, functions, types of scientific research are considered. General scientific and special research methods, basic methods for choosing a suitable research topic and methods for creating programs for its implementation; algorithmic search for information from documentary sources of information. Create research programs, master the skills of analyzing scientific literature on the topic of research.	4			√								√
61		Ch.D	EC	Organization	**Purpose:** To study the methods and				√									

				of Scientific Research in Modern conditions	techniques of conducting scientific work in order to use the obtained knowledge for the successful completion of coursework, diploma design, participation in student scientific papers, preparation of scientific publications based on the results of independent research during the period of study at the university. **Contents:** Considers modern innovative technologies of science, features, its goals; general scientific and special research methods; the main methods for choosing a relevant topic for research and methods for creating a program for its implementation, as well as searching for information based on scientific data in information sources; forms the skills of analyzing scientific literature on the topic of research.													
62		Ch.D	HSC	Industrial Practice I	**Purpose:** Generalization and deepening of theoretical knowledge in the field of crop production and agriculture based on the study of the work of organizations. **Content:** Collection of information about the activities of an educational institution and the professional activities of an agronomist. Analysis of normative documents that determine the content of education under the updated program. Instilling the skills of mastering the practical foundations of the future profession. Development of skills for collecting and accumulating empirical material. Development of skills for	5										√	√	√

					structuring, systematizing knowledge and presenting it in various ways. Development of public speech skills, presentation of reporting documentation.													
63	Quarantine of Agricultural Plants	Ch.D	EC	Quarantine objects and Control measures	**Purpose:** Forms knowledge and skills on quarantine objects and technologies protection of plants and products from them. **Content:** Organizes measures to combat especially dangerous quarantine weeds and insects in the production and delivery of agricultural products, the calculation of their harmfulness of products and the study of their economic costs. Forms the skills of carrying out quarantine measures in institutions for the cultivation, storage and processing of crops. Selects the optimal types, norms and terms of application of chemical and biological plant protection products for effective control of weeds, pests and diseases.	4						√				√		
64		Ch.D	EC	Protection from Quarantine Objects	**Purpose:** Forms knowledge about the optimal types, norms and terms of use of chemical and biological plant protection products for effective control of weeds, pests -us and diseases. **Contents:** Knows and understands measures to protect plants from quarantine pests, diseases and weeds. Determining the reasons that testify to the regularities in the formation of the flora and fauna of quarantine objects, the nature of the geographical distribution under the influence of natural and anthropogenic factors. Predicts quarantine objects of							√				√		

					agricultural crops.													
65		Ch.D	EC	Quarantine Inspection and Examination of Crop products	**Purpose:** Forms knowledge about the organization of seed preparation, sowing agricultural. Crops and caring for them plant protection system harmful organisms and adverse weather events. **Content:** It studies the basic principles of quarantine inspection and examination, supervision of compliance by employers with sanitary and hygienic and sanitary anti-epidemiological norms and rules, carried out by a specially authorized executive body.	6						√				√	√	
66		Ch.D	EC	Quarantine of Agricultural Plants	**Purpose:** To study measures for ensuring quarantine phytosanitary safety in accordance with the law RK in the field of phytosanitary safety **Content:** Organizes the preparation of seeds, sowing agricultural crops and their care; clarification of the protection system plants from pests and adverse weather phenomena. Chooses the best types norms and terms use of funds plant protection for effective fight with weeds, pests and diseases							√				√	√	
67		PD	EC	Fundamentals of Phytosanitary systems and Technologies	**Purpose:** Forms knowledge about the methods of phytosanitary monitoring of agroecosystems for the detection of harmful organisms. **Content:** Studying the theoretical principles of accounting for harmful organisms, making forecasts for their development and distribution, informative support for forecasts. Instruments and	4						√		√		√		

					equipment for phytosanitary diagnostics, methods for examining crops and plantings, predicting and signaling the timing of the fight against pests and diseases of agricultural crops are described.													
68		PD	EC	Phytosanitary monitoring of Harmful organisms	**Purpose:** Forms knowledge about the methods of phytosanitary monitoring of agroecosystems for the detection of harmful organisms. **Content:** Studying the theoretical principles of accounting for harmful organisms, making forecasts for their development and distribution, informative support for forecasts. Instruments and equipment for phytosanitary diagnostics, methods for examining crops and plantings, predicting and signaling the timing of the fight against pests and diseases of agricultural crops are described.						√	√	√		√		
69		Ch.D	HSC	Industrial Practice II	**Purpose:** Systematization, generalization and deepening of theoretical knowledge in the field of plant protection and quarantine based on the study of the work of organizations in which students have practical training. **Content:** Considers technology, economics, organization and management of agricultural production, the organization of the agronomic service and the methods of work of the chief agronomist, agronomists of industries and production units of the economy. Gaining skills with maps by crops, take part in the development of a work plan for spring	5								√		√	√	

					field work and its implementation, as well as in organizing control over the quality of work and products.													
70	Module of new Professional competencies acquisition	PD	EC	Subjects on the Additional Educational Program	**Purpose:** Acquisition of new professional competencies in the field of related educational programs. **Content:** They study the additional educational program Minor (Minor) - a set of disciplines and (or) modules and other types of educational work, determined by students for study in order to form additional competencies	12											√	√
71	Module of Final Certification	Ch.D	HSC	Predegree or Industrial Practice	**Purpose:** Consolidation of theoretical knowledge gained in the study of the disciplines provided for by the curriculum, gaining experience in the study of an actual scientific problem and preparing for the completion of the bachelor's final qualifying work. **Content:** Knowledge - formation of general professional and professional competencies necessary for the development of crop cultivation technologies, acquisition of production experience of independent work in the conditions of professional agronomic activity, updating knowledge, skills and abilities in the field of agriculture in real conditions of agronomic activity.	8				√							√	
72		Ch.D	EC	Writing and Defending a Thesis, a Graduate work or Preparing and Passing	**Purpose:** Systematization, consolidation and expansion of theoretical knowledge and practical skills in the educational program and their application in solving specific problems in the field of plant protection. **Content:** Knowledge and understanding-	12				√							√	

				a Comprehensive exam	oriented practice, as the final stage of training, is responsible for the formation of the student's skills of independent work in the professional field. Successful defense of a graduation project at a meeting of the State Attestation Commission is the legal basis for awarding the student the appropriate qualification.													

5. SUMMARY TABLE REFLECTING THE VOLUME OF DEVELOPED LOANS IN THE CONTEXT OF MODULES OF THE EDUCATIONAL PROGRAM

Course of Study	Semester	The number of mastered modules	Number of studied disciplines			Amount of credits					Total hours	Total loans KZ	Amount	
			OC	HSK	EC	Theoretical education	Physical training	Training practice	Internship Undergraduate practice	Final examination			exam	Dif. offset
1	1	3	5		2	28	2				900	30	6	1
	2	3	3	2	3	27	2	1			900	30	5	3
2	3	6	2	3	2	28	2				900	30	5	2
	4	6	3	4	1	24	2		4		900	30	5	3
3	5	5	-	3	4	30					900	30	7	
	6	4	-	2	3	25			5		900	30	4	1
4	7	3	-	1	3	16			5		630	21	3	1
	8	4	-	1	4	21					630	21	5	0
	9	1		1					10	8	540	18		
Total			**13**	**17**	**22**	**199**	**8**	**1**	**24**	**8**	**7200**	**240**	**40**	**11**

6. STRATEGIES AND METHODS OF TRAINING, MONITORING AND EVALUATION

Learning Strategies	Student-centered learning: the learner is the center of teaching/learning and an active participant in the learning and decision-making process. Practice-oriented learning: focus on the development of practical skills.
Teaching methods	Conducting lectures, seminars, various types of practices: • application of innovative technologies: • problem learning; • case study; • work in a group and creative groups; • discussions and dialogues, intellectual games, competitions, quizzes; • methods of reflection, projects, benchmarking; • Bloom's taxonomy; • presentations; • rational and creative use of information sources: • multimedia training programs; • electronic textbooks; • digital resources. Organization of independent work of students, individual consultations.
Monitoring and assessing the achievability of learning outcomes	Current control on each topic of the discipline, control of knowledge in classroom and extracurricular activities (according to the syllabus). Assessment Forms: • surveys in the classroom; • testing topics of academic discipline; •test papers; • protection of independent creative works; • discussions; • trainings; • colloquia; • essays, etc. Midterm control at least two times during one academic period within the same academic discipline. Intermediate certification is carried out in accordance with the working curriculum, academic calendar. Conduct forms: • exam in the form of testing; •oral exam; • a written exam; • combined exam; • protection of projects; protection of practice reports. **Final state certification.**

EDUCATIONAL AND RESOURCE SUPPORT OF THE EP

Information Resource Center	The structure of the Educational Information Center includes 6 subscriptions, 16 reading rooms, 2 electronic resource centers (ERC). The basis of the network infrastructure of the Educational and Information Center is 180 computers with Internet access, 110 workstations, 6 interactive whiteboards, 2 video doubles, 1 video conferencing system, 3 A-4 format scanners, JIC software - AIBS "IRBIS-64" under MS Windows (basic set of 6 modules), stand-alone server for uninterrupted operation in the IRBIS system. The library fund is reflected in the electronic catalog available to users on the site http://lib.ukgu.kz on-line 24 hours 7 days a week. Thematic databases of their own generation: "Almamater", "Proceedings of SKSU scientists", "Electronic archive" have been created. Online access from any device 24/7 via the external link http://articles.ukgu.kz/ru/pps. Catalogs are processed electronically. EC consists of 9 databases: "Books", "Articles", "Periodicals", "Proceedings of the teaching staff of SKSU", "Rare Books", "Electronic Fund", "SKGU in Print", "Readers" and "SKU". The EIC provides its users with 3 options for accessing its own electronic information resources: from the “Electronic Catalog” terminals in the catalog hall and in the EIC subdivisions; through the information network of the university for faculties and departments; remotely on the library website http://lib.ukgu.kz/. Open access to international and republican resources: "Springer Link", "Polpred", "Web of Science", "EBSCO", "Epigraph", to electronic versions of scientific journals in the public domain, "Zan", "RMEB", "Adebiet", Digital library "Aknurpress", "Smart-kitar", "Kitar.кz", etc. For people with special needs and disabilities, the library website has been adapted to the work of visually impaired users
Material and technical base	For conducting practical classes and passing educational, industrial and undergraduate practice within the framework of dual education, there is: Training and production base "Kainar-bulak". Land area: 2.8000 ha Cereals, vegetables, melons, medicinal, industrial crops are cultivated at the scientific-experimental site. An intensive orchard of fruit trees, a collection vine nursery, plantations of berry crops have been laid out using new drip irrigation technologies, using mineral fertilizers and biostimulants. The scientific and experimental base "Kainar-bulak" is equipped with a technopark, scientific laboratories for conducting agricultural experiments. For classroom (lecture, practical, laboratory) classes there are: Lecture rooms – 4, Classrooms for laboratory classes – 5, Auditorium for practical exercises- 2, Greenhouses – 2, Experimental site – 2, Training workshop – 1, Educational and auxiliary premises: Library -1, Reading rooms – 1, Food point – 15, Assembly Hall -1 Sports hall – 1, Medical point – 8, Computer rooms – 4.

APPROVAL SHEET

according to the Educational program " 6B08130- Plant Protection and Quarantine "

Director of DAA _____ Naukenova A.S.

Director of DASc _____ Nazarbek U.B.

Director of DE&C _____ ____ Bazhirov T.S.