

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

M. AUEZOV South Kazakhstan University

«APPROVED»

Acting Chairman of the Board-Rector \_\_\_\_\_\_\_\_\_\_\_\_\_ K.Nurmanbetov

«\_\_\_»\_\_\_\_\_\_\_\_\_\_2024

**EDUCATIONAL PROGRAM**

6В08130- Plant Protection and Quarantine

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| 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 | В077- Plant growing |
| Type of EP | Acting |
| ISCE level | 6 |
| NQF level | 6 |
| SQF of education level | 6 |
| Language of learning | Kazakh, Russian |
| 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, 2024

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The educational program was considered by the decision of academic committee

of “Agricultural Sciences and Veterinary Medicine” branch

Protocol №\_\_\_\_\_ from «\_\_\_\_» \_\_\_\_\_\_\_\_\_\_2023.

Chairman of theАC \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_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.

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1. **PROGRAM CONCEPT**

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| **Mission of the University** | We are focused on generating new competencies, training a leader who translates research 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 in choice, development and action.** * Partnership - creates trust and support in relationships where everyone wins. * Social responsibility - ready to fulfill obligations, make decisions and be responsible for their results. |
| **Graduate Model** | * Deep subject knowledge, its application and constant expansion in professional activities. * Information and digital literacy and mobility in a rapidly changing environment. * Research skills, creativity and emotional intelligence. * Entrepreneurship, independence and responsibility for their activities and well-being. * Global and national citizenship, tolerance for cultures and languages. |
| **Uniqueness of the EP** | * The university has taken measures to maintain academic integrity and academic freedom, protection from any type of intolerance and discrimination: * • Rules of academic integrity (order No. 212 of October 10, 2022); * • Anti-corruption standard (order No. 221 n/a dated 12/07/2021).   • Code of Ethics (Order No. 212 of October 10, 2022) |
| **Academic Integrity and Ethics Policy** | The university has taken measures to maintain academic honesty and academic freedom, protection from any kind of intolerance and discrimination:   * Rules of academic integrity (protocol of the Academic Council No. 3 dated October 30 , 2018 ); * Anti-corruption standard (Order No. 373 n / a dated December 27, 2019). * Code of Ethics (protocol of the Academic Council No. 8 dated January 31, 2020). |
| **Regulatory and legal framework for the development of EP** | 1.Law of the Republic of Kazakhstan “On Education”;  2. Model rules for the activities 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. Standard rules for admission to training in educational organizations implementing educational programs 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. 600 with amendments and additions dated 06/02/2023. No. 252  4. State mandatory standards for higher and postgraduate education, approved by order of the Ministry of Education and Science of July 20, 2022 No. 2;  5. Rules for organizing the educational process in 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; with changes and additions from 09/23/2022. No. 79  6. Qualification reference book for 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.  7. Methodological recommendations for introducing ECTS principles into the educational process and expanding academic freedom. Appendix to the order of the Minister of Science and Higher Education. of the Republic of Kazakhstan dated February 12, 2024 No. 57  8. Guidelines for the development of educational programs for higher and postgraduate education, Appendix 1 to the order of the Director of the National Center for the Development of Higher Education of the Ministry of Education and Science of the Republic of Kazakhstan dated May 4, 2023 No. 601 n/k |
| **Organization of the educational process** | * Implementation of the principles of the Bologna Process * Student -centered learning * Availability \_ * And inclusiveness \_ |
| **Quality assurance of EP** | * Internal quality assurance system * Involvement of stakeholders in the development of the EP and its evaluation * Systematic monitoring   Updating the content (updating) |
| **Requirements for applicants** | They are established in accordance with the Standard Rules for admission to training in educational organizations implementing educational programs of higher and postgraduate education by order of the Ministry of Education and Science of the Republic of Kazakhstan No. 600 dated October 31, 2018, with changes and additions dated June 2, 2023. No. 252 |
| **Conditions for the implementation of educational programs (EP) for persons with disabilities and special educational needs(SSN)** | For students with SEN (special educational needs) and persons with disabilities (PSI), tactile PVC tiles, specially equipped toilets, a mnemonic diagram, and shower bars have been installed in educational buildings and student dormitories. Special parking spaces have been created. Crawler lift installed. There are desks for people with limited mobility (PLM), signs indicating the direction of movement, ramps. In the educational buildings (main building, building No. 8) there are 2 rooms with six working places adapted for users with disorders of the musculoskeletal system (DMS).For visually impaired users, the SARA™ CE Machine (2 pcs.) is available for scanning and reading books. The library website is adapted for the visually impaired. There is a special NVDA audio program with a service. The JIC website http://lib.ukgu.kz/ is open 24/7.  An individual differentiated approach is provided for all types of classes and in the organization of the educational process. |

**2. PASSPORT of the Educational program**

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| **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. * Establishing conditions for the development of in-demand knowledge and skills, as well as a conscious attitude towards enhancing the welfare of society and conserving the planet within the framework of the SDGs. |
| **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 “Рlant reproduction” Order of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan “Atameken” No.65 dated 03/04/2023.   * Professional standard "Forensic environmental examination", to the order   Minister of Justice of the Republic of Kazakhstan dated January 23, 2024 No. 60 |
| **Name of the degree awarded**  **List of qualifications and positions** | After the successful completion of this EP, the graduate is awarded “ Bachelor of Agriculture ” 6В08130- «Plant Protection and Quarantine» of the educational program"  • 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 for compliance with standards, 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**

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| **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. Тo 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. Тo 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**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **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. 1 | | Fundumentals of the Public Sciences | | GED | | OC | | History of Kazakhstan | **Purpose: І**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 | | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 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 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. "Mangіlіk El" and "Modernization of Public Consciousness" are a new Kazakhstan philosophy | 5 | | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 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 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 | | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 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 | | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 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-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. | 5 | |  | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 6 | | PD | | EC | | Basics of financial literacy  management and competent distribution of finances. | The purpose of the discipline is to study personal and family financial resources, which are critical to achieving financial well-being.  Contents of the discipline. Financial planning and consumer safety. Basic methods and techniques for effective spending and saving money. Protecting and investing your own financial resources. The role and significance of personal finance, its capabilities for achieving financial stability. Filtering out a lot of dubious financial information. Incentives for independent management of responsibilities and optimal financial capabilities of the consumer. Making smart financial decisions when building a professional career. | 3 | | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 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. | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 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. | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
|  | |  | | PD | | EC | | Service to Society | **Purpose: Т**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. |  | |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
|  | |  | | 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. |  | |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 9 | | 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 А1, А2, В1, В2-1, В2-2 (В2, С1 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 | | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 1 | | 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 - 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. | 10 | | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 1 | | 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 | |  |  |  |  |  | |  | |  | |  | |  |  |  | √ |
| 1. 1 | | 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, 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. | 3 | | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 1 | | 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 | | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 1 | | 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 management. Networks and Telecommunications.Cybersecurity. Internet technologies. Cloud and Mobile technologies. Multimedia technologies. Smart technology. E-technologies. Electronic business. Electronic government. | 5 | | √ | √ |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 1 | | 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 | |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 16 | | 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 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. | 5 | |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 1 | | 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 | |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 18 | | PD | | EC | | Biotechnology of Microorganisms | **Purpose:** Assimilation by students of 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. |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 1 | | 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 reduction. Efficiency of plant protection against pests and diseases Application of a complex of protection methods | 4 | |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 2 | | 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 |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 2 | | 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 of elements. modern chemical, physico-chemical methods of analysis. | 4 | |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 2 | | 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. |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 2 | | 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 | |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 2 | | PD | | EC | | Fundamentals of Academic writing | **Purpose:** To familiarize students with the 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. |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 5 | | 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 | |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 2 | | Standardization and Business planning in the Agroindustrial complex | | 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  **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. | 4 | |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 2 | | 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 | |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 2 | | PD | | EC | | Organization of Production and Business planning of Protected soil in the Agro-industrial Complex | **Purpose:** To train students in planning agricultural experiments, observations and accounting in experience.  **Contents:** Knowledge and understanding 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. |  |  |  |  |  | |  | |  | |  | |  |  |  |  |
| 1. 3 | | 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 | |  |  |  | √ |  | |  | |  | |  | |  |  |  |  |
| 1. 3 | | 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. |  |  |  | √ |  | |  | |  | |  | |  |  |  |  |
| 1. 3 | | 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 | |  |  |  |  |  | |  | | √ | | √ | |  |  |  |  |
| 1. 3 | | 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. |  |  |  |  |  | |  | | √ | | √ | |  |  |  |  |
| 1. 3 | | 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 | |  |  |  |  |  | |  | | √ | | √ | |  | √ |  |  |
| 1. 3 | | 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. |  |  |  |  |  | |  | | √ | | √ | |  | √ |  |  |
| 1. 3 | | 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 | |  |  |  |  |  | |  | | √ | | √ | |  |  |  |  |
| 1. 3 | | 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. |  |  |  |  |  | |  | | √ | | √ | |  |  |  |  |
| 1. 3 | | 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.  **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. | 4 | |  |  |  |  |  | |  | | √ | | √ | |  |  |  |  |
| 1. 4 | | 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. |  |  |  |  |  | |  | | √ | | √ | |  |  |  |  |
| 1. 4 | | 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 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. | 5 | |  |  |  |  | √ | |  | |  | |  | |  |  |  |  |
| 1. 4 | | 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 | |  |  |  | √ |  | |  | |  | |  | |  |  |  |  |
| 1. 4 | | 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 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. | 4 | |  |  |  |  |  | |  | |  | |  | | √ |  |  |  |
| 1. 4 | | 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. |  |  |  |  |  | |  | |  | |  | | √ |  |  |  |
| 1. 4 | | 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 skills of lean cultivation. | 5 | |  |  |  | √ |  | |  | |  | |  | |  |  |  |  |
| 1. 4 | | 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 | |  |  |  | √ |  | |  | |  | |  | |  |  |  |  |
| 1. 6 | | 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 of the first fine processing technology. | 6 | |  |  |  | √ |  | |  | |  | |  | |  |  |  |  |
| 1. 6 | | 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. |  |  |  | √ |  | |  | |  | |  | |  |  |  |  |
| 1. 4 | | Ch.D | | HSC | | Technological practice I | **Purpose:** Сonsolidation 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 | |  |  |  |  |  | |  | | √ | | √ | |  |  | √ |  |
| 1. 4 | | Technology of Cultivation and Production of Plant-growing Products | | Ch.D | | EC | | Technology of Cultivation of Cultures in the Closed Ground | **Purpose:** Acquaintance of students with the main environmental factors affecting the yield of vegetable crops, methods  cultivation of vegetable crops on protected 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. | 4 | |  |  |  | √ |  | |  | |  | |  | |  | √ |  |  |
| 1. 4 | | Ch.D | | EC | | Production оf Greenhouse Vegetable аnd 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. |  |  |  | √ |  | |  | |  | |  | |  | √ |  |  |
| 1. 5 | | 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.  **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. | 4 | |  |  |  | √ | √ | |  | |  | |  | |  | √ |  |  |
| 1. 5 | | Ch.D | | EC | | Chemical Analysis of Soil, Plants and Fertilizers | **Purpose** Study methods for analyzing soils, plants and fertilizers to determine the content of elements for compliance with regulatory requirements.  **Contents:** Studies the system of measures of chemical influence on the soil, masters modern methods of soil and agrochemical analyzes and the use of their results in production activities, competently determines the trends of the soil-forming process in different agricultural landscapes to improve its properties when cultivating agricultural crops. Forms theoretical and practical knowledge and skills to improve legal regulation, manage the nutrition of agricultural plants, determine optimal rates, timing and methods of applying fertilizers in various production conditions. |  |  |  | √ | √ | |  | |  | |  | | √ |  |  |  |
| 1. 5 | | 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, 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. | 5 | |  |  |  |  | √ | |  | |  | |  | |  |  |  |  |
| 1. 5 | | 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 | |  |  |  | √ | √ | |  | |  | |  | |  |  |  |  |
| 1. 5 | | 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.  **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. | 5 | |  |  |  | √ |  | |  | |  | |  | |  | √ |  |  |
| 1. 5 | | 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. |  |  |  | √ |  | |  | |  | |  | |  | √ |  |  |
| 1. 5 | | 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 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. | 4 | |  |  |  | √ |  | |  | |  | |  | |  | √ |  |  |
| 1. 5 | | Ch.D | | EC | | Growing оf Sugar Beet аnd іts 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. |  |  |  | √ |  | |  | |  | |  | |  | √ |  |  |
| 1. 2 | | 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 | |  |  | √ |  |  | |  | |  | |  | |  |  |  | √ |
| 1. 3 | | Ch.D | | EC | | Organization of Scientific Research in Modern conditions | **Purpose:** To study the methods and 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. |  | |  |  | √ |  |  | |  | |  | |  | |  |  |  |  |
| 1. 5 | | Ch.D | | HSC | | Industrial Practice І | **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 structuring, systematizing knowledge and presenting it in various ways. Development of public speech skills, presentation of reporting documentation. | 5 | |  |  |  |  |  | |  | |  | |  | |  | √ | √ | √ |
| 1. 5 | | 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 | |  |  |  |  |  | | √ | |  | |  | |  | √ |  |  |
| 1. 6 | | 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. |  |  |  |  |  | | √ | |  | |  | |  | √ |  |  |
| 1. 6 | | 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 | |  |  |  |  |  | | √ | |  | |  | |  | √ | √ |  |
| 1. 6 | | 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 |  |  |  |  |  | | √ | |  | |  | |  | √ | √ |  |
| 1. 6 | | 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 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. | 4 | |  |  |  |  |  | | √ | |  | | √ | |  | √ |  |  |
| 1. 6 | | 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. |  |  |  |  |  | | √ | | √ | | √ | |  | √ |  |  |
| 1. 6 | | Сh.D | | HSC | | Industrial Practice ІІ | **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 field work and its implementation, as well as in organizing control over the quality of work and products. | 5 | |  |  |  |  |  | |  | |  | | √ | |  | √ | √ |  |
| 1. 6 | | 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 | |  |  |  |  |  | |  | |  | |  | |  |  | √ | √ |
| 1. 6 | | 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 | |  |  |  | √ |  | |  | |  | |  | |  |  | √ |  |
| 1. 7 | | Ch.D | | EC | | Writing and Defending a Thesis, a Graduate work or Preparing and Passing a Comprehensive exam | **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-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. | 12 | |  |  |  | √ |  | |  | |  | |  | |  |  | √ |  |

**5.SUMMARY TABLE REFLECTING THE VOLUME OF DISBURSED LOANS BY EP MODULES**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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, TEACHING METHODS AND ARTIFICIAL INTELLIGENCE, MONITORING AND ASSESSMENT**

|  |  |
| --- | --- |
| 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-kіtаr", "Kitаr.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 " 6В08130- Plant Protection and Quarantine "

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