

F.7.02-10

MINISTRY OF SCIENCEs AND higher EDUCATION OF THE REPUBLIC OF

KAZAKHSTAN

M.O. AUEZOV SOUTH KAZAKHSTAN UNIVERSITY

 «APPROVED»

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

 «\_\_\_»\_\_\_\_\_\_\_\_\_\_2024

**EDUCATIONAL PROGRAM**

6V08140- Fruit and vegetable growing

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| Registration Number |  |
| Code and Classification of Education | 6B08- Agriculture, bioresources and veterinary  |
| Code and Classification of Areas of Training | «6B081-Agronomy» |
| Group of educational programs (EP) | В077- Plant growing |
| Type of EP | Acting |
| ISCE level | 6 |
| NQF level | 6 |
| IQF level | 6 |
| Language learning | Kazakh, Russian, English |
| The complexity of EP | 240 credits |
| Distinctive features of EP | - |
| Partner University (JEP) - | - |
| University partner (DDEP) - | - |

Shymkent, 2024

F.7.02-10

Developers:

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| Full Name | Position | Signature |
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| Sh.N.Orazova | Director of LLP“Kazagronom” |  |
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The EP was considered at a meeting of the Academic Quality Committee of the \_\_\_faculty or the Higher School, Minutes № \_\_\_ «\_\_\_\_\_» \_\_\_\_\_\_ 2024 y.

Chairman of the Committee \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Tulemetova S.E.

The EP was considered and recommended for approval at Educational-methodical meeting of M. Auezov SKU

Minutes № « » 2024 y.

Chairman of the EMM\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ K. Sarykulov

The EP was approved by the decision of the Academic Council of the University

Minutes № « » 2024 y.

**CONTENT**

1. Concept of the program

2. PASSPORT of the Educational program

3. Competencies of an EP graduate

3.1 Matrix for correlating learning outcomes in the EP as a whole with the competencies being developed

4. Matrix of the influence of modules and disciplines on the formation of learning outcomes and information on labor intensity

5.Summary table reflecting the volume of disbursed loans by EP modules

6.Strategies, teaching methods and artificial intelligence, monitoring and assessment

7. Educational and resource support for EP

 Approval sheet

 Appendix 1. Review from the employer

 Appendix 2. Expert opinion

 Appendix 3. Professional standards

F.7.02-10

**1. CONCEPT OF THE PROGRAM**

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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 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. |
| **Uniqueness of the EP** | • 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 (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);  |
| **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. 6143. 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. 2524. 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. 796. 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. 578. 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
* Inclusivity
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| **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. |

1. **PASSPORT OF THE EDUCATIONAL PROGRAM**

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| **Purpose of the EP** | Preparation of competitive bachelors in the feld of Fruit and vegetable growing, with broad fundamental knowledge , satisfying the needs of society in highly qualifed personnel. |
| **Tasks of the EP** |  -the 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 studyEstablishing 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 Life long 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. 339 dated 12/12/2018.Professional standard “Horticultural activity” Order of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan “Atameken” No. 339 dated 12/12/2018.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. 263 dated 12/26/2019.Professional standard “Viticulture” Order of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan “Atameken” No. 263 dated 12/26/2019Professional standard "Forensic examination of documents", to the order Minister of Justice of the Republic of Kazakhstan No. 60 dated January 23, 2024 |
| **Name of the degree awarded** **List of qualifications and positions** | After the successful completion of this EP, the graduate is awarded “ Bachelor of Agriculture ” 6В08140 - “ Fruit and vegetable growing ”  of the educational program" Bachelors in ЕP 6B08110 – «Fruit and vegetable growing» can hold primary positions as a head of a peasant farm, a head of agriculture section, a specialist of the agricultural sector, farms for industry Fruit and vegetable growing, primary positions in research institutions without requiring a length of service in accordance with the qualification requirements in accordance with the Qualification directory of managers, specialists and other employees approved by order of the Minister of Labor and Social Protection of the Republic of Kazakhstan from 30 December I am 2020 № 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 horticulture ;- enterprises for the storage and processing of fruits and vegetables ; |
| **Objects of professional activity** | The objects of professional activity of graduates who have mastered the bachelor's program in the specialty "Fruit and vegetable growing" include:      research and production centers of the Ministry of Agriculture of the Republic of Kazakhstan, farms and peasant farms, private production cooperatives, joint-stock companies, limited liability partnerships, etc .; agricultural colleges. |
| **Subjects of professional activity** | - agricultural land ;- organic, mineral, green fertilizers;- Irrigation th water and ;- horticultural plants and grapes and their varieties. |
| **Types of professional activity** | *organizational and technological*- organization of production, placement of plantings of fruit and vegetable crops, provision of planting stock, storage, processing and marketing of products on a regional and regional scale;*production and management*- drawing up patterns of crop rotation in vegetable growing, fruit nursery and greenhouses, testing and implementation of advanced technological methods that allow to obtain high yields of fruit, berry and vegetable crops and organize storage, processing and marketing of products;*Experimental research*- etc. The behavior of the production testing of new varieties and methods of cultivation of fruit and vegetables;*financial and economic*- calculation of financial and labor resources for the production, storage and sale of fruits and vegetables;*consultation*- consultation of specialists and workers employed in the field of horticulture ;*educational (pedagogical)*- teachers in agricultural colleges |
| **Learning outcomes** | **LO 1** Fluently communicates in the professional environment and society in Kazakh, Russian and English, taking into account the principles of academic honesty and decency.**LO 2** To demonstrate socio-cultural, professional development, based on the formation of ideological, civic, spiritual and social responsibility, methods of scientific and experimental research.**LO 3** Owns modern methods of growing fruit, vegetable crops and potatoes in open and protected ground using GIS technology, differentiated fertilization in orchards and greenhouses and vegetable plantations.**LO 4** Reasonably substantiates the selection of varieties of fruit and vegetable crops, based on morphological characteristics, physiological state, determining factors for improving growth, the influence of meteorological factors on the development and quality of products in accordance with the requirements of the technical regulations of the CU / EurEU., And regulatory legal documents.**LO 5** Identifies the wounded varieties of fruit and vegetable crops cultivated in Kazakhstan with the ability to draw up a technological map of their cultivation, using methods for modeling the ecosystem, taking into account the agro-meteorological and soil-climatic conditions of the area.**LO 6** Apply methods for studying soils under fruit and vegetable crops and compose a system in the chemical and biological protection of plants from harmful organisms, taking into account fruit and crop rotations, land exposure, groundwater levels, the complex of fertilizers and agricultural machinery used.**LO 7** Recognize the compliance of agro-landscape conditions with the requirements of fruit and vegetable crops and grapes when they are placed on the territory of land use.**LO 8** Evaluates the physiological state of plants, the adaptive potential of varieties and hybrids in relation to soil and climatic conditions of cultivation and determines factors for improving plant growth and development to obtain high yields of high-quality agricultural, including fruit and vegetable products, their processing and storage.**LO 9** 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.**LO 10** Able to conduct scientific research based on knowledge, collect information from domestic and foreign sources on technologies for the production of horticultural products and analyze them according to appropriate methods, generalize the statistical processing of experimental results and formulate conclusions.**LO 11** Carries out marketing and commercial research in the agricultural markets of fruits and vegetables and chemicalization products of agricultural production.**LO 12** Applies research, entrepreneurial skills and experience in the face of uncertainty in agricultural production.**LO 13** To work effectively individually and as a member of a team, to correctly defend one's point of view in professional activities, to correct one's actions and to use various methods in solving agricultural problems. |

**3. COMPETENCIES OF AN EP GRADUATE**

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| **GENERAL COMPETENCIES** (SOFTSKILLS). Behavioral skills and personal qualities |
| GC1. Competence in managing one's literacy | GC1.1. The ability to self-learn, self-develop and constantly update their knowledge within the chosen trajectory and in an interdisciplinary environment.GC1.2. Ability to express thoughts, feelings, facts and opinions in the professional field.GC1.3. Ability for mobility in the modern world and critical thinking. |
| GC2. Language competence | GC2.1. Ability to build communication programs in the state, Russian and foreign languages.GC2.2. Ability to interpersonal social and professional communication in conditions of intercultural communication. |
| GC3. Mathematical competence and competence in the field of science | GC2.1. Ability to build communication programs in the state, Russian and foreign languages.GC2.2. Ability to interpersonal social and professional communication in conditions of intercultural communication. |
| GC4. Digital competence, technological literacy | GC4.1. 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 educational 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.GC5.2. Ability to social and cultural development based on the manifestation of citizenship and morality.GC5.3 The ability to build a personal educational trajectory throughout life for self-development, career growth and professional success.GC5.4. The ability to successfully interact in a variety of socio-cultural contexts at school, at work, at home and at leisure. |
| GC6. Entrepreneurial competence | GC6.1. Ability to be creative and entrepreneurial in a variety of environments.GC6.2. The ability to work in a mode of uncertainty and rapidly changing task conditions, make decisions, allocate resources and manage your time.GC6.3. Ability to work with consumer requests. |
| GC7. Cultural awareness and self-expression | GC7.1. The ability to show worldview, civil and moral positions.GC7.2. The ability to be tolerant of the traditions and culture of other peoples of the world, to have high spiritual qualities. |
| **PROFESSIONAL COMPETENCIES** (HARDSKILLS). |
| Theoretical knowledge and practical skills specific to this field | 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. Нave 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. Рroduce development of agro-technical measures to improve the fertility of soil; to have admission s assessment of soil fertility and reproduction . |

**3.1 Matrix for correlating learning outcomes in the EP as a whole with the competencies being developed**

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|  | **ER 1** | **ER 2** | **ER3** | **ER4** | **ER5** | **ER6** | **ER7** | **ER8** | **ER9** | **ER10** | **ER11** | **ER12** | **ER13** |
| GC 1 | **+** |  |  | **+** |  |  |  |  |  |  |  |  |  |
| GC 2 |  | **+** |  |  |  |  |  |  |  | **+** |  |  | + |
| GC 3 | **+** |  | **+** |  |  |  |  |  |  |  |  |  |  |
| GC 4 | + |  |  |  |  |  |  |  |  |  |  | **+** |  |
| GC 5 |  |  |  | **+** |  |  |  |  |  |  | **+** |  |  |
| GC 6 | + |  |  |  |  |  |  |  |  |  |  | **+** |  |
| GC 7 |  | + |  |  |  |  |  |  |  |  |  |  |  |
| PC 1 |  |  |  | + |  | + |  | + | + |  |  |  |  |
| PC 2 |  |  |  |  | + |  |  | + | + | + |  |  |  |
| PC 3 |  |  |  |  |  | + |  | + |  |  |  |  |  |
| PC4 |  |  |  | + |  |  |  | **+** |  |  |  |  |  |
| PC 5 |  |  |  |  | + | + |  |  |  | + | **+** |  |  |
| PC 6 | **+** |  |  | **+** |  |  |  |  |  |  |  |  |  |
| PC 7 |  |  | + |  |  |  |  |  |  | + |  |  | + |

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

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **No. 1** | **Module name** | **Cycle**  | **Compo****nent**  | **Name disciplines** | **Brief description disciplines** | **Quan-ty loans** | **Formed results learning (codes)** |
| **RO 1** | **RO 2** | **PO3** | **RO 4** | **RO5** | **RO 6** | **RO 7** | **RO8** | **RO 9** | **RO10** | **RO1 1** | **RO1 2** | **RO****1 3** |
| 2 | Social Sciences Module | OOD | OK | History of Kazakhstan | **The purpose of the** **discipline:** Formation of an objective idea of the history of Kazakhstan based on a deep understanding and scientific analysis of the main stages, patterns, originality of the historical development of Kazakhstan.**Contents:** Ancient people and the rise 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 , social and political development , foreign policy and international relations . Methods and techniques of historical description for the analysis of the causes and consequences of events in the history of Kazakhstan. | 5 |  | √ |  |  |  |  |  |  |  |  |  |  |  |
| 3 | OOD | OK | Philosophy | **The purpose of the discipline :** Formation of a holistic understanding of philosophy as a special form of knowledge of the world, its main sections, problems and methods of studying them in the context of future professional activity. Formation of students' philosophical reflection, skills of introspection and moral self-regulation.**Contents:** The emergence of a culture of thinking. The subject and method of philosophy. Fundamentals of philosophical understanding of the world: questions of consciousness, spirit and language. Being. Ontology and metaphysics. Knowledge and creativity. Education, science, engineering and technology. Philosophy of man 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" is a new Kazakh philosophy. | 5 |  | √ |  |  |  |  |  |  |  |  |  |  |  |
| 4 | Socio-Political Knowledge Module | OOD | OK | Sociology and political science | **The purpose of the discipline :** Formation of knowledge about socio-political activity, explanation of socio-political processes and phenomena.**Contents:** Consideration of the socio-ethical values of societies. Understanding the features of social, political, cultural, psychological institutions in the context of their role in the modernization of Kazakhstani society. Making decisions to resolve conflict situations in society, including professional society. Studies of political institutions and processes, methods of analysis and interpretation of ideas about politics, power, state and civil society, understand and apply the methods and techniques of sociological, comparative analysis, understand the essence and content of the political situation in the modern world. Analysis and classification of the main political institutions. | 4 |  | √ |  |  |  |  |  |  |  |  |  |  |  |
| 5 | OOD | OK | Culturology and psychology | **The purpose of the discipline :** Formation of scientific knowledge 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 |  | √ |  |  |  |  |  |  |  |  |  |  |  |
| 6 | Socio-ethnic development module | OOD | VC | Ecosystem and law | **The purpose of the discipline :** 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 interaction between man and nature, productivity of ecosystems and the biosphere. Entrepreneurial activity in conditions of limited resources, increasing the competitiveness of business and the national economy. Regulation of relations in the field of ecology and safety of human life. Knowledge and observance of Kazakh law, obligations and guarantees of subjects, state regulation of public relations to ensure social progress. Application of scientific research methods. | 5 | √ |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | DB | HF | Basics of financial literacy management and competent distribution of finances | **The purpose of the discipline:**  The purpose of the discipline is to study personal and family financial resources, which are critical to achieving financial well-being.**Contents:**  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 | √ |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | DB | HF | Abay studies | **The purpose of the discipline :** Preservation of the "national code" in the project "Kazakhstan" based on the work of A. Kunanbaev**Content:** And a historical review of the history of Kazakhstan and Kazakh literature of the 19th-20th centuries. Studies of the heritage of Abai in the XX-XXI centuries . Chronology of Abay's creativity. Abai is a great poet, ethnographer, founder of Kazakh written literature. Abay is the compiler of the Code of Laws "The Regulations of Karamola", social significance. Abai is a thinker, religious scholar, philosopher. The role of Abai in education and science, the concept of the "Whole Man". “Words of Edification” by Abai, epic novel by M. Auezov “The Way of Abai”. K.Tokaev "Abai and Kazakhstan in the XXI century", role, significance .  |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | DB | HF | Mukhtar studies | **The purpose of the discipline :** Formation of a historical, literary understanding of the work of M. Auezov in the context of the history of literature, patriotism and cultural and spiritual position. Development of artistic thinking, skills of independent research activity.**Contents:** Life and career of M. Auezov Semipalatinsk, Tashkent, St. Petersburg periods. The activities of M. Auezov in the magazines "Sholpan", "Abai". Publicism M. Auezov. Artistic review of the stories "Korgansyzdyn kүni", "Kyr suretteri", "Oқyғan azamat", "Kokserek", the play Enlik-Kebek and the stories "Kyly zaman", "Қarash-қarash" қiғasy" , monograph "Abay Құnanbaev" , epic novel "Abay Zholy". | √ |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 |  | DB | HF | Service to the community | **The purpose of the discipline :** 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.**Contents:** The concept and meaning of Service learning, the history of the formation and development of the Service Learning concept. 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. |  | √ |  |  |  |  |  |  |  |  |  |  |  |  |
| eleven |  | DB | HF | Fundamentals of anti-corruption culture | **The purpose of the discipline:** Formation of an anti-corruption worldview, strong moral foundations of the individual, citizenship, stable skills of anti-corruption behavior.**Content:** Overcoming legal nihilism, forming the foundations of the legal culture of students in the field of anti-corruption legislation. Formation of conscious perception, attitude to corruption. Moral rejection of corrupt behavior, corrupt morality, ethics. Mastering the skills necessary to counteract corruption. Creation of an anti-corruption standard of conduct. Anti-corruption propaganda, dissemination of ideas of legality, respect for the law. Activities aimed at understanding the nature of corruption, awareness of social losses from its manifestations, the ability to reasonably defend one's position, and look for ways to overcome manifestations of corruption. | √ |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | Module of communications and physical culture | OOD | OK | Kazakh (Russian) language | **The purpose of the discipline :** Formation of communicative competence using the Kazakh (Russian) language in the socio-cultural, professional sphere and public life, improving the ability to write academic texts.**Content:** Levels A1, A2, B1, B2-1, B2-2 (B2, C1 Russian) are presented in the form of cognitive-lingual-cultural complexes, consisting of spheres, themes, sub-themes and typical situations of communication of the international standard: social and domestic, socio-cultural , educational and professional, modeled by forms: oral and written communication, written speech works, listening. Demonstration of understanding of the language material in texts on the educational program, knowledge of terminology and development of critical thinking. | 10 | √ |  |  |  |  |  |  |  |  |  |  |  | √ |
| 13 | OOD | OK | Foreign language | **The purpose of the discipline:** Formation of intercultural and communicative competence of students in the process of foreign language education at a sufficient level of A2 and a level of basic sufficiency B1. О the student reaches the level B2 of the common European competence if the language level at the start is higher than the level B1 of the common European competence**Content.** Levels A 1 , A2, B1, B2 are presented in the form of cognitive-linguo-culturological complexes, consisting of spheres, themes, sub-themes and typical situations of communication of the international standard : written communication, written speech works, listening. Demonstration of understanding of the language material in texts on the educational program, knowledge of terminology and development of critical thinking. | 10 | √ |  |  |  |  |  |  |  |  |  |  |  | √ |
| 14 | OOD | OK | Physical culture | **The purpose of the discipline:** 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 order to prepare for professional activities; to the persistent transfer of physical exertion, neuropsychic stress and adverse factors in future work.**Contents:** Implementation of physical culture and health and training programs. A complex of general developmental and special exercises ­. In sports (gymnastics, sports and outdoor games, athletics , etc.). To control and self-control in the process of training, insurance and self-insurance. Competition judging . From the means of professionally applied physical training. Modern health systems: breathing system according to A. Strelnikova, K. Buteyko, K. Dineika, articular gymnastics according to Bubnovsky.  | 8 |  |  |  |  |  |  |  |  |  |  |  |  | √ |
| 15 | DB | VC | Professional Kazakh (Russian) language | **The purpose of the discipline :** To form future specialists' communication skills in the professional and cultural-official Kazakh (Russian) language in the field of agriculture .**Content:** Development of the ability to establish contacts at a professional level, competently build communications based on the The purpose of the disciplines and situation of communication. Instilling the ability for creativity, innovation, collegiality in the process of building a program of speech behavior in the Kazakh (Russian) language in the field of professional communication. | 3 | √ |  |  |  |  |  |  |  |  |  |  |  | √ |
| 16 | DB | VC | Professional Oriented foreign language | **The purpose of the discipline :** To form future specialists' communication skills 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 | √ |  |  |  |  |  |  |  |  |  |  |  | √ |
| 17 | OOD | OK | Information and Communication Technologies (in English) | **The purpose of the discipline:** 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. OS. Human interaction with computers. Database systems. Database management. Networks and telecommunications. Cyber protection. Internet technologies. Cloud and mobile technologies. multimedia technologies. Smart technologies. Electronic technologies. Electronic business. Electronic control. | 5 | √ | √ |  |  |  |  |  |  |  |  |  |  |  |
| 1 8 | Fundamentals of natural sciences | DB | VC | Agro-meteorology | **The purpose of the discipline:** 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 agro-meteorological 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 agro-meteorological 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 |  |  |  | √ | √ |  |  |  |  |  |  |  |  |
| 19 \_ | DB | VC | Plant biology | **The purpose of the discipline:** 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 development, the behavior of conducting development processes, phenomena occurring in plant life.**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 |  |  |  |  |  |  |  | √ | √ |  |  |  |  |
| 20 | DB | HF | Inorganic and Analytical Chemistry | **The purpose of the discipline :** To acquire 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 . with modern chemical, physico-chemical methods of analysis. | 4 |  | √ |  |  |  |  |  |  |  | √ |  |  |  |
| 21 | DB | HF | Organic chemistry  | **The purpose of the discipline :** Forms knowledge about mastering the theoretical foundations of organic chemistry and gaining 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. |  | √ |  |  |  |  |  |  |  | √ |  |  |  |
| 2 2 | DB | HF | Introduction to the specialty | **The purpose of the discipline :** To explain the content of professional activity and give the necessary knowledge that will have a great impact, prepare highly qualified specialists who are able to make decisions independently.**Content:** Studying the theoretical foundations and modern technologies of fruit and vegetable production. Research and experiments in agriculture, scientific analysis of the results of experiments, creative application of scientific achievements in agricultural practice. Practical experience in growing vegetables in open and protected ground, obtaining planting material for planting fruit and berry crops of the seed system of vegetable crops; defines the management structure of a specialized enterprise for the production, storage and processing of vegetables and fruits. | 4 |  |  |  |  | √ | √ |  |  | √ |  |  |  |  |
| 2 3 | DB | HF | Fundamentals of academic writing \_ | **The purpose of the discipline :** To introduce students to 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 The purpose of the disciplines, 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. | √ | √ |  |  |  |  |  |  |  |  |  |  |  |
| 24 \_ |  |  | Educational practice | **The purpose of the discipline:** Consolidation and deepening of the received theoretical knowledge , mastering the necessary skills and abilities , etc.**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 |  |  |  |  |  |  |  |  |  |  |  |  | √ |
| 25 | Standardization and business planning in the agro-industrial complex / | DB | VC | Standardization, certification and metrology | **The purpose of the discipline :** Forms theoretical knowledge and practical skillsin 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 |  | √ |  | √ |  |  |  |  |  | √ |  |  |  |
| 26 | DB | HF | Fundamentals of Agribusiness and Entrepreneurship | **The purpose of the discipline : Students** will learn the basics of the theory and practice of business in the field of agricultural economics. **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 |  |  |  |  |  |  |  |  |  |  |  | √ |  |
| 27 | DB | HF | Organization of production and business planning of protected ground in the agro-industrial complex | **The purpose of the discipline :** 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. |  |  |  |  |  |  |  |  |  |  | √ | √ | √ |
| 28 | PD | HF | Organization of research work | **Purpose :** To teach students the methods of organizing scientific research and setting up scientific experiments. To teach the methodological foundations of organizing and planning the research activities of future specialists.**Contents:** The features of science, its The purpose of the disciplines, functions, types of scientific research are considered. General scientific and special research methods, the main methods for choosing an appropriate research topic and methods for creating a program for its implementation. Algorithmic search for documentary sources of information. Skills in creating a research program, analyzing scientific literature on the research topic.  | 4 |  |  |  |  |  |  |  |  |  | √ |  |  |  |
| 29 | PD | HF | Organization of scientific research in modern conditions | **The purpose of the discipline:** 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 work, preparation of scientific publications based on the results of independent research during the period of study at the university.**Content:** Considers modern innovative technologies of science, features, its The purpose of the disciplines; 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 . |  |  |  |  |  |  |  |  |  | √ |  |  |  |
| thirty | General biology and plant protection | DB | HF | Taxonomy of agricultural plants | **The purpose of the discipline :** 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 |  |  |  | √ |  |  | √ |  | √ |  |  |  |  |
| 31 | DB | HF | Systematics of Flowering plants | **The purpose of the discipline:** To teach students the features of the structure, growth and development, systematic 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 phyto-calendar 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. |  |  |  | √ |  |  | √ |  | √ |  |  |  |  |
| 32 | DB | HF | Protection of fruit crops from pests | **The purpose of the discipline:** О to get acquainted with the composition of the types of pests of agricultural crops and create the biological basis for reducing their harmfulness.**Content:** Engaged in general biology, morphology, physiology and taxonomy of organisms that damage fruit crops. A set of measures for the prevention and elimination of outbreaks and their further spread in the garden or nursery is considered. Research knowledge about pests of fruit plants depending on the ecological characteristics of the region, the dynamics of development during the growing season and their age. | 5 |  |  |  |  |  | √ | √ |  |  |  |  |  |  |
| 33 | DB | HF | Protection of fruit crops from diseases | **The purpose of the discipline :**  Determination of the composition of types of diseases of agricultural crops; determines the limits of harmfulness of plant diseases; diagnostics and accounting of pests and diseases of agricultural crops.**Contents:** Studies fruit diseases - pome and stone fruits - powdery mildew, scab, rot, clasteriosporosis, spotting and others. Considers the pathogens of these plants, factors contributing to the weakening of their immunity and leading to an increase in the harmfulness of these pests. Instills prevention and prevention skillsdiseases of fruit crops and exterminating methods of struggle against them. |  |  |  |  |  | √ | √ |  |  |  |  |  |  |
| 34 | DB | HF | Protection of vegetable crops from pests . | **The purpose of the discipline :** Pests and diseases of agricultural crops the main systemic groups of pathogens. Neighborhood taking into account the preservation of the environment, agricultural technology, chemical, biological and other methods of plant protection correct and effective use of the complex**Content:** Studying pests of vegetable crops in separate groups plants leaf types of cabbage, green, bulbous, root crops, tomatoes, cucumbers and others. Studying knowledge on taxonomy, common and distinctive features of their structure and features of application harm. Considers extermination and general preventive measures for the control of various groups of pests in an integrated crop protection system. | 5 |  |  |  |  |  | √ | √ |  |  |  |  |  |  |
| 35 | DB | HF | Protection of vegetable crops from diseases . | **The purpose of the discipline :** Pests and diseases of agricultural crops the main systemic groups of pathogens. Neighborhood taking into account the preservation of the environment, agricultural technology, chemical, biological and other methods of plant protection correct and effective use of the complex .**Contents:** Studies diseases of various groups vegetables - cabbage - black leg, keel of cabbage; septoria, late blight of tomato; powdery mildew of cucurbits and others bacterial, viral, fungal, and non-infectious diseases of othervegetable. Considers pathogens agents of the spread of these diseases. Studying knowledge on biological, agro-technical and chemical methods of combating the use of approved production of drugs. |  |  |  |  |  | √ | √ |  |  |  |  |  |  |
| 36 | DB | HF | Chemical and biological methods of crop protection | **The purpose of the discipline :** Timely , effective and competent application of measures to protect plants from pests, diseases and weeds using chemical and biological preparations and prevent environmental pollution.**Contents:** Patterns of the occurrence of infections, foci of pests and diseases, and chemical treatments of fruit and vegetable cropsstudies the system of biological protection. Develops the ability to determine the types of pests by the nature of plant damage, their development, ways of existence and distribution; study of diseased plants. On the basis of phytopathological and entomological studies, short-term, medium-term and long-term forecasts of the spread of various diseases and pests are made. Explores the theoretical foundations of chemicalization of agriculture; problems of plant nutrition, methods of its regulation; learn the basic properties of organic and mineral fertilizers. | 5 |  |  |  |  |  | √ | √ |  |  |  |  |  |  |
| 37 | DB | HF | Harmful nematodes, mites and rodents | **The purpose of the discipline :** 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 application. |  |  |  |  |  | √ | √ |  |  |  |  |  |  |
| 38 |  |  |  | Technological practice | **The purpose of the discipline:** Z 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 land reclamation measures, the system of labor organization and developed in au pair measures to improve its performance . Obtaining skills during the period of spring field work to get acquainted with the plan of spring sowing, the structure of sown areas. | 4 |  |  |  |  |  |  |  |  |  |  |  | √ |  |
| 39 | Agricultural direction module | PD | VC | Agrochemistry | **The purpose of the discipline:** Teaching students how to create the best conditions for plant nutrition with the help of fertilizers, the features of their interaction with the soil **Contents :** And studies the theoretical foundations of the chemicalization of agriculture; questions of the nutritional regime of plants, methods of its regulation; basic properties of organic and mineral fertilizers; agrochemical properties of the main types of soils in Kazakhstan. Studying methods of control and instrumentation in organizing monitoring, methods for the correct use of fertilizers, taking into account soil and climatic conditions, biological and varietal characteristics of crops, practical skills in performing agrochemical analyzes. | 5 |  |  | √ |  |  | √ |  |  |  |  |  |  |  |
| 40 | P D | VC | Breeding and seed production of agricultural crops | **The purpose of the discipline :** The main object of breeding and seed production should master the correct application of varietal and the requirements for them in production, methods for studying the soil and climatic characteristics of the region for growing varieties.**Content:** Breeding and seed production occupy a special place in increasing the yield of agricultural crops. Provides information about the selection of arable crops and the scientific and theoretical foundations of seed production, methods of their application in the practice of breeding and seed production, methods for breeding and growing cult varieties that are resistant to diseases and pests, adapted to local soil and climatic conditions, as well as the organization of the seed production system, modern ways to improve the quality of seeds. | 5 |  |  |  |  | √ |  | √ | √ |  |  |  |  |  |
| 41 | DB | HF | Machinery in agriculture | **The purpose of the discipline :** 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 |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 42 | DB | HF | Crop mechanization | **The purpose of the discipline :** 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. |  |  |  |  |  | √ |  |  | √ |  |  |  |  |
| 43 | DB | VC | Plant growing 1 | **The purpose of the discipline :** 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:** Studying the types and varietal forms of field crops, biological characteristics, environmental requirements for their cultivation and methods of growing quality crops . Technically increases the maximum productivity of agricultural products with high quality and low costs, forms the skills of lean cultivation. | 5 |  |  |  |  | √ |  |  | √ |  |  |  |  |  |
| 44 | DB | VC | Plant growing 2 | **The purpose of the discipline:** 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 in order to obtain maximum yields of agricultural products at its high quality and minimum costs. | 5 |  |  |  |  | √ |  |  | √ |  |  |  |  |  |
| 45 |  Technology of growing fruit and vegetable crops | B D | HF | Fruit growing | **The purpose of the discipline :** The study of the theoretical foundations and modern technologies for the production of fruits, carrying out agrotechnical measures for growing fruits and obtaining quality products, obtaining quality products at low labor and equipment costs.**Content:** Forms knowledge about pome fruits, stone fruits, grapes and other fruits; morphology and biology of their growth and development; varietal technology of their cultivation and reproduction in nursery, taking into account local natural conditions; Treats crown formation by applying various types of pruning; skills methods of pest control and diseases, proper application of fertilizers and proper harvesting of fruit crops. | 5 |  |  | √ |  |  | √ |  |  |  |  |  |  |  |
| 46 | DB | HF | Horticulture \_ | **The purpose of the discipline :** And history, value of fruit growing, classification morphological, biological and industrial, features growth and fruiting of fruit plants, biological basics of their reproduction, fruit nursery, significance and their structure, the technology of laying an orchard. Formation of the crown of fruit trees, pruning, types of pruning**Content:** Instills the skills of mastering modern gardening, identification of species and forms based on the use of reference determinants and herbarium fund. Learns to master the paths obtaining high quality yields of pome fruits, stone fruits, berries, ornamental seedlings, flowers and medicinal plants for use in cultivation of fruit and ornamental gardens; studies advanced management practices nurseries of these crops, their storage and use in winter vaccinations. |  |  | √ |  |  | √ |  |  |  |  |  |  |  |
| 47 | PD | HF | Advanced technologies in fruit growing | **The purpose of the discipline :** Theoretical foundations of fruit growing and modern technology training**Content:** Explores the main benefits of intensive plantings of fruit crops. Considers breeding achievements in the field of fruit growing on dwarf, semi-dwarf rootstocks, and also masters the most modern fruit growing technologies . . Weak and fast-growing gardens; overcoming post-planting stress in fruit crops. Determines the use of mechanization and high-tech laboratory equipment and biotechnological methods ( cryopreservation in liquid nitrogen of pome pollen and stone fruit cuttings. | 4 |  |  | √ |  |  | √ |  |  |  |  |  |  |  |
| 48 | PD | HF | Innovative technologies in horticulture | **The purpose of the discipline :** The main advantages in the production of fruit crops, breeding achievements, products throughout the year production of conveyor receipts in vegetable growing, the use of mechanization, seed preparation before sowing The most modern methods, effective samples of vegetable crops.timely placement, cultivation of vegetable crops, use of high-yielding varieties.**Content:** Applies the latest achievements of science in the horticulture industry, and studies a set of measures and approaches for conducting scientific , methodological , scientific and production activities for the cultivation of fruit and ornamental crops , for the formation of the practical foundations of modern environmentally safe, resource-saving technologies for the production of pome, stone fruit and ornamental crops; assess the scientific and technical state and level of production of horticultural products based on the collection and analysis of data , their statistical processing for conclusions. |  |  | √ |  |  |  |  |  |  | √ |  |  |  |
| 49 | PD | HF | Advanced technologies in vegetable growing | **The purpose of the discipline :** Theoretical and modern foundations of vegetable growing technology training**Content:** Teaches knowledge in the field of selection and technological achievements in vegetable growing of open and protected ground; overcoming post-planting stress in vegetable crops: automation of production processes , automation of regulation of the composition of the nutrient medium in greenhouse production and climate control and protection of plants in industrial greenhouses, as well as the application of biotechnological methods in seed production, storage and processing of vegetable crops and potatoes.  | 4 |  |  | √ | √ |  |  |  |  | √ |  |  |  |  |
| 50 | PD | HF | World vegetable growing | **The purpose of the discipline :** Must know modern methods of preparing vegetable seeds for sowing, effective sowing patterns, high-yielding varieties, favorable sowing and planting seedlings.**Contents:** Examines the production of fresh vegetables on a global scale, for tomatoes, onions, cabbage and other crops. Considers the technological features of their production in the southern countries based on the use of modern innovative technologies and intensification in vegetable growing. He studies the morphology and agro-technical needs (to heat, to light, etc., in the fields and in greenhouses) of the main vegetable crops of the countries of near and far abroad. |  |  |  | √ |  |  |  |  |  | √ |  |  |  |
| 51 | PD | HF | Examination of the quality of fruit and vegetable products | **The purpose of the discipline :**  Studying the laws of formation of the quality of fruits and vegetables and study of methods for determining quality **Content:** Analyzes and determines common for the main groups of fruit and vegetable products - appearance, taste, smell, size, as well as their allowable values for deviation. In addition, it studies and determines nutritional values, their compliance with state standards and technical specifications. n fruit and vegetable products are essential goods. Determines the commodity-varietal affiliation of high-quality, standard fruit and vegetable products, controls the relevant documentation confirming the required level of quality. | 4 |  |  |  | √ |  |  |  |  |  | √ |  |  |  |
| 52 | PD | HF | Merchandising of fruits and vegetables and mushrooms | **The purpose of the discipline :** Study of methods for determining the quality indicators of fruit and vegetable products .**Content:** Determines the quality of fruit and vegetable products. It studies the commercial qualities of various groups of fruit and vegetable crops and mushrooms: morphological, organoleptic, biochemical and other economically valuable features and properties of products when they are consumed fresh, put into storage and as raw materials during primary and deep processing., most of the population in winter the spring period consumes vegetables that are stored in autumn or imported. |  |  |  |  |  |  |  |  |  |  | √ | √ |  |
| 53 | Storage and processing of agricultural products | DB | HF | Technology of storage and processing of crop products | **The purpose of the discipline :** To teach students of the Horticulture program theoretical and practical skills, special innovative methods and tools in the field of plant breeding, including grain, seed, potato, grape, fruit and vegetable crops, storage and processing.**Content:** Teaches the scientific basis of drying and cleaning agricultural products - grains, seeds or rice - vegetables, root crops, to prepare for storage after harvesting and organize their economical storage.At the same time, he got acquainted with the stages of technology for the first fine processing of harvested plant products: grape juice, grape juice; barley variety suitable for beer production (two-row), the order of its storage before processing; storage of root crops and cabbage; valuable varieties of wheat, etc. to obtain high-quality cereals . presents technological requirements. | 6 |  |  |  |  |  |  |  | √ |  |  |  |  |  |
| 54 | B D | HF | Technology of storage and processing of vegetable crops and potatoes | **The purpose of the discipline :** Learn how to determine the conformity of batches of potatoes to the requirements of the standard**Content:** Explores the application of technologies for the production of vegetables and potatoes for storage and processing. Considers proper transportationvegetable and potato products from the field, pre-processing , - drying, cleaning from unnecessary residues of tops, observing the technological requirements according to the standard and specifications. It determines the commodity-grade affiliation for storage in piles, in trenches, as well as as a raw material for processing in the food, pharmaceutical and other industries.  |  |  |  |  |  |  |  | √ |  |  |  |  |  |
| 55 | P D | HF | Irrigated agriculture  | **The purpose of the discipline :** To teach students to obtain high and stable crop yields in order to improve the characteristics of irrigation in different regions, types of irrigation complex, organizational, economic and technical measures to improve hydrological, soil and agro-climatic conditions, increase land productivity and use of water resources.**Content:** Considers the techniques and methods of growing crops in the area of agriculture with insufficient natural moisture. Determines the types and methods, volumes of the irrigation rate for irrigation of a given crop, selects varieties and hybrids for a specific area of farming with a steady deficit of water supply and irrigation regime . It studies the influence of climatic factors in the production of environmentally friendly products , instills skills in innovative techniques and methods of application to obtain high yields of good quality. | 4 |  |  |  |  | √ |  |  |  | √ |  |  |  |  |
| 56 | P D | HF | 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. |  |  |  |  |  |  |  |  | √ |  |  |  |  |
| 57 | P D | HF | Oilseed production technology | **The purpose of the discipline:** Formation of theoretical knowledge about the characteristics of the biology of field crops, practical skills in the development and application of resource-saving technologies when cultivating them in various agrolandscape and environmental conditions.**Content:** It studied the main types of oilseed breeding technology, and also considered the transformation of organic matter in oilseed seeds during their maturation and chemical processes that occur during seed ripening after harvesting. Determines the influence of natural and climatic conditions on plant productivity. Determines agro-ecological quality indicators, field and reproductive indicators of oilseeds: seed purity, moisture content, weediness, color and smell, content and quality, silkiness, etc. | 4 |  |  |  |  |  |  |  |  | √ |  |  |  |  |
| 58 | PD | HF | Selection and seed production of vegetable crops | **The purpose of the discipline:** Organizes the correct management of primary seed production , variety breeding, variety renewal of the main widely cultivated vegetable crops and potatoes**Content:** Understands the basics and advanced modern methods of developing the breeding process of vegetable crops and their seed production, the basics of seed certification. Uses new approaches to search for primary, environmentally friendly breeding material and methods of hybridization, selection and other activities of the breeding process. Regulates the creation of a breeding database of promising varieties of vegetable crops. |  |  |  |  | √ |  | √ | √ |  |  |  |  |  |
| 59 |  |  | Industrial practice І | **The purpose of the discipline :** To expand and deepen theoretical knowledge in the field of crop production and agriculture based on the study of the work of organizations.**Contents:** Collection of information about the activities of educational institutions and 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 |  |  |  |  |  |  |  |  |  |  |  | √ | √ |
| 60 | education module | B D | VC | Agriculture | **The purpose of the discipline:** 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 |  |  |  |  | √ |  |  |  | √ |  |  |  |  |
| 61 | DB  | VC | Soil science | **The purpose of the discipline :** To form an idea of the soil as the main tool for agricultural production, to acquaint students with the 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 |  |  |  |  |  | √ |  |  | √ |  |  |  |  |
| 62 | DB | HF | Protection of grapes from pests and diseases | **The purpose of the discipline :** Fundamentals of agronomic toxicology and harmful resistance of organisms to pesticides. Pests and diseases of agricultural crops and timely weed control with chemical poisons be able to apply**Content:** Studying a set of organizational and economic measures, ecological, biological, chemical and agro-technical means of limiting the spread and development of the most dangerous pests and pathogens of grapes; theoretical knowledge about the species and systematic, the causes and development of diseases, the biological characteristics of pests and to instill skills and abilities in identifying, signaling, forecasting, control measures and preventing the development and spread of diseases and pests. | 4 |  |  |  |  |  | √ | √ |  |  |  |  |  |  |
| 63 | B D | HF | Viticulture with the basics of intensification | **The purpose of the discipline :**  Formation of knowledge in the field of horticulture, teaching students the knowledge of the biological and morphological characteristics of grapes**Content:** Considers the morphology and agro-technical needs of grapes in soil and climatic factors of vital activity. Studying innovations in growing based on the improvement of the selection process, ampelographic new achievements in viticulture for compiling a technological map for the cultivation of grapes; in addition, it considers the issues of fresh, processed grape consumption and long-term storage in various gaseous media. It instills the skills of progressive technology of growing grapes , reproduction, laying young vineyards, as well as rejuvenating old ones. |  |  |  |  |  | √ |  |  |  |  |  |  |  |
| 64 | B D  | HF | Vegetable growing | **The purpose of the discipline :** Vegetable growing is one of the types of crop production. Industry, its features and significance. Sow seeds preparation, cultivation of high-quality seedlings, plant nutrition, area calculation, favorable conditions for growing plants, creation, rational crop rotation and crop rotation build**Content:** Forms knowledge about pome, stone fruits, grapes and other fruits; morphology and biology of their growth and development; varietal technology for their cultivation and reproduction in the nursery, taking into account local natural conditions; Treats crown formation by applyingvarious types of pruning; skills in how to deal with pests and diseases, the correct application of fertilizers and the correct harvesting of fruit crops. | 4 |  |  | √ |  |  |  | √ |  | √ |  |  |  |  |
| 65 | B D | HF | Growing vegetables and potatoes | **The purpose of the discipline :**  Preparing potato seeds for sowing, growing high-quality seedlings, calculating the area for plant nutrition, creating favorable conditions for growing plants.**Content:** Instills skills in vegetable and potato farming on a scientific basis, i.e. make an informed choice of methods of agro-technical operations, the choice of varieties (by maturity, resistance to external factors or diseases and pests) and care measures (cultivation, top dressing with macro and micro fertilizers, pest and disease control methods; crop rotation schemes and cultural turn over.  |  |  | √ |  |  |  | √ |  | √ |  |  |  |  |
| 66 | DB | HF | Greenhouse production of vegetables | **The purpose of the discipline :**  Vegetable growing on protected soils in Kazakhstan. Importance, history, depending on the new economic situation of the task and the path of rapid development.**Content:** He studies greenhouse production, introduces the arrangement of the main types of protected ground cultivation facilities, masters the methods and methods of year-round growing vegetables. He studies the importance of the production of off-season and early vegetables for year-round provision of the population with fresh vegetables. Assesses the nutritional and dietary value of greenhouse vegetables . can apply various types of crop rotations of greenhouse crops; knows how to organize vegetable growing in open ground and the production of off-season and early vegetables (seedling and non-seedling culture using protected ground). | 4 |  |  | √ |  |  | √ |  |  |  |  |  |  |  |
| 67 | DB | HF | Production of greenhouse vegetables and berries | **The purpose of the discipline :** Vegetable growing on protected soils in Kazakhstan. Importance, history, depending on the new economic situation of the task and the path of rapid development.**Content:** Able to draw up a technological map for the cultivation of greenhouse crops of vegetables; uses the biological characteristics of greenhouse varieties and hybrids of vegetables; develops technologies for cultivating varieties of vegetable and berry plants bred for production in greenhouses; correct construction of the technological chain of methods of their cultivation; the latest technologies for growing greenhouse crops using drip irrigation and fertigation, cassette methods for growing seedlings for closed and open ground.  |  |  | √ |  |  | √ |  |  |  |  |  |  |  |
| 68 | PD | HF | Melon growing  | **The purpose of the discipline :**  Formation of skills in the use of intensive technologies in the cultivation of horticultural crops.**Content:** Studying the variety of melons (melon, watermelon, pumpkin, squash, squash, etc.) ways to obtain high yields of good quality melon products, the current state of the industry and the prospects for its development ; requirements, development of intensive technologies for obtaining planting material and products, imposed on varieties and hybrids by modern melon growing. Instills skills in the use of intensive technologies in the cultivation of melons .  | 5 |  |  |  |  |  |  | √ |  |  |  |  |  |  |
| 69 | PD | HF | Intensive melon growing and viticulture | **The purpose of the discipline :** Formation of knowledge in the field of horticulture, teaching students the biological and morphological characteristics of grapes.**Content:** Studying the quality of products and technological aspects of the production of melons and grapes. Integrated mechanization in soil preparation, planting, vineyard care and harvesting , cultivation of high-yielding zoned varieties, comprehensive plant protection, the use of promising organo-mineral fertilizers sized for the predicted harvest of melons and grapes. He studies progressive technologies and cultivation of gourds and grapes, taking into account world achievements in this area. |  |  |  |  |  |  | √ |  |  |  |  |  |  |
| 70 |  |  | Work practice II | **The purpose of the discipline:** With the 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 undergo 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 |  |  |  |  |  |  |  |  |  |  |  | √ | √ |
| 71 | Module acquisition of new professional competencies |  |  | Disciplines for additional educational program | **The purpose of the discipline:** 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 |  |  |  |  |  | √ |  |  | √ |  |  |  |  |
| 72 | Final assessment module |  |  | Pre-diploma or industrial practice | **The purpose of the discipline:** To consolidate the theoretical knowledge gained in the study of the disciplines provided for by the curriculum, gain experience in the study of an actual scientific problem and prepare 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. | 10 |  |  |  |  |  |  |  |  |  |  |  |  | √ |
| 73 |  |  | Writing and defending a thesis (project) or preparing and passing a comprehensive exam | **The purpose of the discipline:** 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](https://ru.wikipedia.org/w/index.php?title=%D0%93%D0%BE%D1%81%D1%83%D0%B4%D0%B0%D1%80%D1%81%D1%82%D0%B2%D0%B5%D0%BD%D0%BD%D0%B0%D1%8F_%D0%B0%D1%82%D1%82%D0%B5%D1%81%D1%82%D0%B0%D1%86%D0%B8%D0%BE%D0%BD%D0%BD%D0%B0%D1%8F_%D0%BA%D0%BE%D0%BC%D0%B8%D1%81%D1%81%D0%B8%D1%8F&action=edit&redlink=1) is the legal basis for awarding the student the appropriate qualification. | 8 |  |  |  |  |  |  |  |  |  |  | √ |  | √ |

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

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Course of training | Semester | Amount of the mastered modules | Amount of the studied disciplines | Amount of KZ credits | Total in hours | Total loans KZcredits | Amount |
| Compulsory component | University component | Optional component | Theoretical training | Physicaltraining  | Training practice | Production practice | Pre-diploma practice | exam | Dif. offset |  |
| 1 | 1 | 4 | 5 | 1 | 1 | 28 | 2 |  |  |  | 900 | 30 | 5 | 2 |  |
| 2 | 2 | 3 | 2 | 3 | 27 | 2 | 1 |  |  | 900 | 30 | 6 | 2 |  |
| 2 | 3 | 6 | 2 | 4 | 2 | 28 | 2 |  |  |  | 900 | 30 | 6 | 2 |  |
| 4 | 6 | 3 | 2 | 2 | 25 | 2 |  | 3 |  | 900 | 30 | 5 | 2 |  |
| 3 | 5 | 5 | - | 1 | 6 | 30 |  |  |  |  | 900 | 30 | 6 | 1 |  |
| 6 | 4 | - | 3 | 2 | 25 |  |  | 5 |  | 900 | 30 | 3 | 1 |  |
| 4 | 7 | 2 | - | 2 | 2 | 15 |  |  | 5 |  | 600 | 20 | 3 | 1 |  |
| 8 | 4 | - | - | 5 | 20 |  |  |  |  | 600 | 20 | 5 | 0 |  |
| 9 |  |  |  |  |  |  |  | 8 | 12 | 600 | 20 | - | 1 |  |
| **Total** |  | **13** | **15** | **23** | **198** | **8** | **1** | **21** | **12** | **7200** | **240** | **39** | **12** |  |

**6.STRATEGIES, TEACHING METHODS AND ARTIFICIAL INTELLIGENCE, MONITORING AND ASSESSMENT**

|  |  |
| --- | --- |
| **Learning strategies** | Student–centered learning: The student is the center of teaching/learning and an active participant in the learning and decision-making process.Practice-oriented training: orientation to the development of practical skills. |
| **Teaching methods** | Conducting lectures, seminars, various types of practices with:• the use of innovative technologies:• problem-based learning;• case study;• work in a group and creative groups;• discussions and dialogues, intellectual games, olympiads, quizzes;• reflection methods, projects, benchmarking;• Bloom's taxonomies;• presentations;• \* rational and creative use of information sources:• \* multimedia training programs;• \* electronic textbooks;• \* digital resources. • \* machine learning methodsOrganization of independent work of students, individual consultations. |
| **Monitoring and evaluation of the achievability of learning outcomes** | Current control on each topic of the discipline, control of knowledge in classroom and extracurricular classes (according to syllabus). Assessment forms:• survey in the classroom;• testing on the topics of the academic discipline;• control works;• protection of independent creative works;• discussions;• trainings;• colloquiums;• essays, etc.Boundary control at least twice during one academic period within the framework of one academic discipline.Intermediate certification is carried out in accordance with the working curriculum, academic calendar.Forms of conducting:• exam in the form of testing;• oral examination;• written exam;• combined exam;• project defense;• protection of practice reports.Final state certification. |

**7. 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 haCereals, 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**

on the Educational program " 6V08140- Fruit and vegetable growing  "

Director of DAA \_\_\_\_\_\_\_\_\_\_\_\_ Naukenova A.S.

Director of DASc \_\_\_\_\_\_\_\_\_\_ Nazarbek U.B.

Director of DE&C \_\_\_\_\_\_\_ \_\_\_\_ Bazhirov T.S.