Graduate Model of the Educational Program
6B08701 - Agricultural Machinery and Technology

Upon graduation, the graduate should be able to:
Skills:

- Perform technological calculations to substantiate the system of machines and equipment for the production, storage, and processing of agricultural products.
- Install, adjust, operate, maintain, and repair technological and electrical equipment.
- Ensure compliance with technological discipline and proper operation of machinery and technological equipment.
- Analyze the enterprise's production activities and take measures to improve production efficiency, reduce material and energy consumption, and increase labor productivity using modern information technologies.
- Conduct educational and training activities.

Knowledge and Understanding:

- Understand the fundamental laws of physics, methods of mathematical analysis, new information technologies, and a complex of specialized theoretical knowledge and practical skills related to the sustainable development of the agricultural sector.
- Be familiar with the provisions of the Unified System for Design Documentation (USDD), standardization, and certification of agricultural products in the context of ISO requirements.
- Grasp the basic laws of mechanics as applied to the design of working parts of agricultural machines and processing enterprises.
- Understand the theoretical foundations of electrical engineering, automation, and methods for calculating electrical, thermal energy, and hydraulic installations in the sector.
- Know the design and operational processes of machines and apparatus in crop production, animal husbandry, and processing enterprises.
- Apply methods of electrical measurement, understand the structure, main parameters, characteristics, testing methods, and calculation of electrical equipment, electronic and microprocessor technologies.
- Understand methods for assembling machine units, repair and maintenance enterprises, as well as energy supply and electrification systems for production facilities.
- Use techniques of technical and economic analysis and make engineering and management decisions.
- Grasp the basics of management and marketing and procedures for establishing small and medium-sized businesses in agriculture and the agro-technical service sector.

Competencies:

- Manage agricultural machinery and adjust technological equipment for production and processing in the industry and agro-technical services.

- Utilize computer technology in developing projects for agricultural enterprises and service centers.
- Control the quality of raw materials and finished products within the production cycle of the enterprise.
- Design, install, adjust, repair, and operate systems for electrification and automation of agriculture.
- Navigate issues of labor legislation, occupational safety and health standards, environmental safety, industrial sanitation, and fire protection, as well as apply the legislative and regulatory acts of the Republic of Kazakhstan in agriculture.
- Apply new energy- and resource-saving technologies in the fields of mechanization, electrification of agriculture, and processing enterprises.