Graduate Profile of the Educational Program
6B08703 – Digital Technologies in the Agro-Industrial Complex (Bachelor's level)

Upon completion of the program, the graduate should be able to:
Skills:

- develop and implement digital solutions for managing technological processes in the agro-industrial complex;
- collect, process, analyze, and visualize data using geographic information systems (GIS), sensor networks, unmanned technologies, and other digital tools;
- automate production processes in crop and livestock farming as well as in processing enterprises;
- configure, maintain, and integrate software and hardware systems within the agricultural sector;
- apply data analysis, machine learning, and predictive analytics methods to improve the efficiency of agricultural production;
- ensure cybersecurity of the information systems within an agribusiness enterprise;
- carry out educational and training activities.

Knowledge and Understanding:

- the fundamentals of digital technologies, programming, databases, network technologies, and artificial intelligence as applied to agro-industrial production tasks;
- principles of operation of automated systems for technological process control (SCADA and other control systems);
- modern methods for collecting and processing Big Data in the agro-industrial complex;
- the architecture and design principles of digital platforms for agriculture;
- standards and regulations in the field of information security and data protection;
- principles of sustainable agricultural development, smart farming, and precision agriculture;
- fundamentals of digital economy and evaluating the effectiveness of digital solution implementation in agribusiness;
- current legislation and strategic documents of the Republic of Kazakhstan in the field of digitalization and agricultural policy.

Competencies:

- in designing and implementing digital systems for monitoring and managing agricultural processes;
- in using modeling software, GIS technologies, ERP and CRM systems in the agricultural sector;
- in analyzing digital data to support evidence-based managerial and technological decision-making;

- in managing IT projects in agriculture, including planning, implementation, and outcome evaluation;

- in understanding legal regulations concerning ICT, occupational safety, ecology, and sustainable development in the agro-industrial complex;

- in applying innovative digital solutions for energy saving, optimizing logistics, and increasing labor productivity in agricultural production.