

**Director of Mining and Metallurgy  
Institute**

2022 year.

Protocol № 1 AC MMI



Educational Program (EP): 8D07306 Geospatial Digital Engineering (6D071100 Geodesy)

The educational program "8D07306 Geospatial Digital Engineering" (6D071100 Geodesy) has been developed in accordance with the National Qualification Framework, aligned with the Dublin Descriptors and the European Qualification Framework. The program is designed based on a modular system of discipline study, forming general cultural and professional competencies.

The uniqueness of this program lies in the formation of a scientific elite capable of developing and implementing advanced methods and technologies for comprehensive analysis of geospatial data, forecasting natural and man-made processes, and creating intelligent spatial data management systems. The doctoral program is focused on conducting fundamental and applied research in satellite geodesy, digital cartography, GIS, and remote sensing to address global challenges of sustainable development and territorial management.

The planning and management of the educational program "7M07306 Geospatial Digital Engineering" are carried out based on the priority areas and strategic goals of Satbayev University (<https://official.satbayev.university.ru/university/mission-strategy>) and the O.A. Baikonurov Mining and Metallurgical Institute, reflecting the vision, mission, strategic directions, and key performance indicators (<https://official.satbayev.university.ru/mining-metallurgy>).

The main objective of the educational program is to create an effective system for training scientific and scientific-pedagogical personnel of a new generation through the integration of education and science. These specialists should be capable of addressing issues related to the advancement of society, economy, industry, science, and the development of new technologies in the fields of geodesy and geospatial digital engineering.

#### **4. Educational Program Development Tasks**

1. Readiness for research and project activities – Training specialists in geodesy, cartography, geoinformatics, including related fields, with the ability to select, modify, and develop research methods based on specific research objectives.
2. Readiness to develop and implement local-level technological methods – Preparing specialists for the development and implementation of technologies for solving geospatial engineering challenges.
3. Readiness for information retrieval and knowledge integration – Enabling specialists to search for and obtain new information necessary for solving professional problems and actively participating in the activities of enterprises or organizations.
4. Readiness for scientific communication and professional discussions – Enhancing specialists' ability to communicate complex ideas effectively, participate in organizational and managerial activities, and take responsibility for professional decisions.
5. Readiness for lifelong learning and continuous professional development – Preparing specialists for self-learning and constant enhancement of their professional skills.
6. Readiness to analyze scientific publications and present research results – Training specialists to analyze scientific literature and present their research findings in accordance with internationally accepted standards.
7. Readiness to navigate modern research approaches and methodologies – Ensuring specialists understand contemporary methods, trends, and pathways in solving professional challenges.

#### **5. Long-term action plan for the development and improvement of educational (educational work, educational and methodological work), scientific (research work, scientific and educational work, scientific and methodological work) and organizational and managerial activities for 2023-2026**

<b>Content of the event</b>	<b>Responsible</b>
Formation of a working group and commission for the development of the educational program plan	<del>non-formal</del> Institute Director, Head of Department, Teaching Staff (TS)
Defining the goals and objectives of the educational program development plan	Institute Director, Head of Department, TS
Studying and analyzing the competitive environment, identifying opportunities for the department to enhance the image and attractiveness of the educational program for consumers (students, parents, business partners)	Institute Director,

Effective positioning of the educational program implemented by the department based on analytical research of the educational services market	Head of Department, TS
Updating and improving the content of the educational program, including the names of disciplines that define modern professional competencies of specialists	Institute Director,
Strengthening the material and technical base	Head of Department, TS
Enhancing career guidance work and attracting applicants through trilateral agreements	Institute Director, Head of Department, TS
Engaging teaching staff from business partners in the educational process	Institute Director, Head of Department, TS
Developing and implementing digital interactive learning formats, combining theoretical and practical teaching methods	Career Committee, Directorate, Head of Department, TS
Integrating innovative educational technologies into the learning process	Head of Department, TS
Providing electronic educational materials and multimedia resources for all disciplines of the educational program	Head of Department, TS
Ensuring the participation of faculty and students in interuniversity and international conferences	Institute Director, Head of Department, TS
Developing scientific schools and preparing students	Institute Director, Head of Department, TS
Regular professional development of the teaching staff	Institute Director, Head of Department, TS
Ensuring safe and comfortable working, learning, and extracurricular conditions for students	Institute Director, Head of Department, TS
Developing an action plan with geodesy and cartography associations for further professional certification of the educational program	Institute Director, Head of Department, TS
Developing corporate culture	Directorate, Head of Department

Reviewed at the meeting of the MSaG Department Protocol № 3 dated September «20», 2022.

Head of the Department of MSaG



Orynbasarova E.O.