The list of academic disciplines of the university component

6B07 - Engineering, Manufacturing and Civil engineering
(Code and classification of the field of education)

6B073 - Architecture and Civil engineering
(Code and classification of the direction of training)

0730
(Code in the International Standard Classification of Education)

B074 - Urban planning, construction works and civil engineering
(Code and classification of the educational program group)

6B07301 - Geodesy and Cartography
(Code and name of the educational program)

bachelor
(Level of preparation)

set of 2023

Semey 2023

Developed
By the Academic Committee of the EP
The head of the AC G.Nurimkhan
EP Manager K.Baibossinova

Reviewed
at the meeting of the Quality Assurance Commission of the Faculty of Engineering and Technology
Recommended for approval by the Academic Council of the University
Protocol № 4.6 "10" April 2023
Chairman of the Commission on Quality Assurance Abdilova G.

Approved at the meeting of the Academic Council of the University Protocol No. 8 "25" April 2023.

Approved
at the meeting of the Academic Council of the University
Protocol № 1 "01" of September 2023
Chairman of the Academic Council of the University Orynbekov D.R.

Bases of economics, law and ecological knowledge

Discipline cycle	General educational disciplines
Course	1
Credits count	5
Knowledge control form	Examination

Short description of discipline
The integrated discipline includes the main issues and principles in the field of fundamentals of law and anti- corruption culture, economics, entrepreneurship and leadership, ecology and life safety. Features of the use of regulatory legal acts, the ability to use the business, ethical, social, economic, entrepreneurial and environmental standards of society. Specifics of environmental-legal, economic, entrepreneurial relations, leadership qualities and principles of combating corruption.

Purpose of studying of the discipline
It consists in studying the basic patterns of the functioning of living organisms, the biosphere as a whole and the mechanisms of their sustainable development under the conditions of anthropogenic impact and emergency situations; in understanding the concept of corruption, the legitimacy of the fight against it, the content of the state penal policy; in the formation of students` basic fundamental stable knowledge on the basics of economic theory, in instilling the skills and abilities of economic thinking; in introducing students to the theory and practice of entrepreneurship, to the basics of creating their own business; in the formation of theoretical knowledge and practical skills for the development and improvement of leadership qualities.

Learning Outcomes
ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Learning outcomes by discipline
* analyzes the issues of safety and conservation of the natural environment as the most important priorities of life;*
* demonstrates knowledge of the fundamentals of nature management and sustainable development, assesses the impact of man-made systems on the environment;*
* shows knowledge of the main regulatory legal acts of the Republic of Kazakhstan, their understanding and application;*
* shows knowledge of the patterns of development of economic processes, clearly formulates his own position, finds and clearly sets out arguments in its defense;*
* is able to characterize the types of entrepreneurial activity and the entrepreneurial environment, draw up a business plan, create an entrepreneurial structure and organize its activities;*
* knows the fundamental provisions about the role of leadership in managing large and small social groups.*

Prerequisites
School course

Postrequisites
Basic and profile disciplines of the EP

Introduction to the Profession of Surveyor-Cartographer

Discipline cycle	Basic disciplines
Course	1
Credits count	6
Knowledge control form	Examination

Short description of discipline
The basic discipline that studies theoretical concepts and applied problems of geodesy as a science of the earth. The content of the discipline forms a modern understanding of the means and methods of creating topographic maps (plans), geodetic surveying used in various branches of the national economy. Students will learn how to measure geometric relations between elements of the earth`s surface with geodetic instruments, mathematically process the obtained field data and represent them on maps and plans.

Purpose of studying of the discipline
Formation among students of a modern understanding of the discipline of geodesy, as a science of the Earth, used in various fields of knowledge and practical human activities, about the means and methods of geodetic work in topographic and geodetic surveys, the creation and adjustment of topographic plans, in solving engineering, cadastral and other tasks .

Learning Outcomes
ON 3 Use the fundamentals of cartography and geodesy to solve various problems on the ground

Learning outcomes by discipline
1) present basic knowledge of the means and methods of creating topographic maps (plans), methods and means of carrying out topographic surveys.
2) use topographic surveying material, in particular to read a topographic map skillfully, solving on its basis appropriate problems both graphical and mathematical calculations.
3) demonstrate the ability to work with optical-mechanical and electronic geodetic devices, the production of basic geodetic surveys of the terrain, in the mathematical processing of the results of geodetic measurements with the required accuracy

Prerequisites
School course

Postrequisites
Basic and profile disciplines of the EP

Mathematics

Discipline cycle	Basic disciplines
Course	1
Credits count	5
Knowledge control form	Examination

Short description of discipline

The purpose of this course is to provide students with fundamental training in mathematics. The course is aimed at forming a sufficiently high culture of mathematical thinking among students and developing the ability to creatively approach problem solving. In addition to studying the fundamental foundations of higher mathematics (elements of analytical geometry, linear algebra, mathematical analysis, differential equations), the course assumes consideration of various applications of mathematics to solving production problems from the field of professional specialization.

Purpose of studying of the discipline

creation of the basis for the development of logical thinking and mathematical culture. Formation of basic knowledge and acquisition of basic skills of using mathematical apparatus for solving theoretical and applied problems, as well as the necessary level of mathematical training for mastering other applied disciplines studied within a specific profile; skills of working with special mathematical literature

Learning Outcomes

ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Learning outcomes by discipline

1) Selects methods of mathematical analysis and modeling, theoretical and experimental research of applied problems
2) Uses mathematical symbolism to express quantitative and qualitative relations of objects
3) Applies methods of visual graphical representation of research result

Prerequisites

School course

Postrequisites

Basic and profile disciplines of the EP

Cartography

Discipline cycle	Basic disciplines
Course	1
Credits count	5
Knowledge control form	Examination and term work/Project

Short description of discipline

The discipline "Cartography", is a basic discipline that gives basic knowledge of the theoretical background of cartographic science, including the teaching of the creation and use of cartographic works, maps and methods of cartographic research, plays an important role and importance in the preparation of bachelor educational program "Geodesy and Cartography".
Cartography includes a broad range of questions on the creation of topographic and thematic maps at various scales in a wide variety of scientific areas of the economy.

Purpose of studying of the discipline

- development of spatial imagination and logical thinking skills;
- acquaintance with topographic, geographical maps and atlases, their properties as figurative and symbolic models of reality;
- teaching methods and methods of cartographic display of objects and phenomena;
- study of the theoretical and practical foundations of cartography;
- study of graphic constructions and design of maps, plans and profiles;
- computational processing of measurement results using electronic computers;
- creation and updating of topographic and thematic maps in the interests of the national economy, for research and protection of the environment and natural resources.

Learning Outcomes

ON 3 Use the fundamentals of cartography and geodesy to solve various problems on the ground
ON 4 Demonstrate the ability to draw plans and maps of the terrain using traditional and modern methods

Learning outcomes by discipline

1) recognize and describe the content and properties of topographic, thematic, general geographic maps, methods of cartographic representation, type, types and classifications of various maps and atlases
2) demonstrate the results of cartometric work, read a map freely, analyze and evaluate its content, apply formulas to calculate distortions and calculate geographic, polar and rectangular coordinates for various maps made in various projections
3) Demonstrate skills in creating a mathematical and geographic map base and plotting special content and various content elements on it in various ways

Prerequisites

Introduction to the Profession of Surveyor-Cartographer

Postrequisites

Basic and profile disciplines of the EP

Topographical drawing

Discipline cycle	Basic disciplines
Course	1
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline includes basic issues and principles in the field of topographic, cartographic and land surveying graphics, features of plotting, as well as the process of drawing on graphic materials. The basics of drawing conventional topographic, cartographic and land surveying signs, fonts and their application to create plans and maps, which are an integral part of the colorful design of documents of cartographic and other land surveying production are studied. Additionally presented to the study of the basics of computer graphics

Purpose of studying of the discipline

Studying the methods and techniques of line, font and colorful design of graphic documents of cartographic and land management production.

Learning Outcomes

ON 3 Use the fundamentals of cartography and geodesy to solve various problems on the ground
ON 4 Demonstrate the ability to draw plans and maps of the terrain using traditional and modern methods

Learning outcomes by discipline

1)Classify the main methods and techniques of paperwork for cartographic and land management production.
2)Describe how to draw and design graphic documents.
3)Demonstrate skills in the basics of cartography and geodesy in solving various problems on the ground

Prerequisites

Introduction to the Profession of Surveyor-Cartographer

Postrequisites

Computer graphics in construction Computer drawing in design Smart technologies in construction Digital technologies in the organization, management and planning of buildings Autocad in pojecting BIM-technologies in the design, construction and operation of buildings and structures

Educational - field geodetic practice

Discipline cycle	Basic disciplines
Course	1
Credits count	6
Knowledge control form	Total mark on practice

Short description of discipline

Educational - field geodetic practice is an important part of the educational process, which forms the students` theoretical knowledge of the discipline "Geodesy" professional skills of geodetic measurements on the ground using modern geodetic means and technologies. During the practice students consolidate, expand and deepen theoretical knowledge, learn to perform topographic and engineering-geodesic works with the necessary accuracy in conditions close to the production.

Purpose of studying of the discipline

The purpose of studying the discipline is to consolidate the knowledge gained by students in lectures and practical classes, as well as the formation of practical skills and abilities, general cultural, professional competencies.

Learning Outcomes

ON 3 Use the fundamentals of cartography and geodesy to solve various problems on the ground
ON 4 Demonstrate the ability to draw plans and maps of the terrain using traditional and modern methods

Learning outcomes by discipline

1) determine the importance and responsibility, composition and content of topographic and geodetic works required to solve various tasks of construction production.
2) demonstrate the ability to work with geodetic instruments, in the construction of topographic plans of different scales, in the leveling of the route with the construction of profiles of a given direction and in solving various engineering and geodetic problems in the production of geodetic measurements on the ground.
3) offer solutions in the organization of geodetic measurements on the ground using modern geodetic equipment and technology

Prerequisites

Introduction to the Profession of Surveyor-Cartographer

Postrequisites

Industrial practice I

Geodetic Instrumentation

Discipline cycle	Basic disciplines
Course	2
Credits count	5
Knowledge control form	Examination

Short description of discipline

The discipline "Geodesic Instrumentation" is a basic discipline that studies the development of geodetic instruments, their standardization and metrological support of measurements.
This course allows you to study the requirements for geodetic instruments, the arrangement of mechanical components of electrical instruments, the development of measurement methods, the design of geodetic instruments, and the processing of the results of the study of instruments.
Studies the main parameters and requirements in instrumentation, production, technical and design activities and proceeds from the requirements of geodesy to the measurement results

Purpose of studying of the discipline

To give an idea about the structure and design of surveying instruments

Learning Outcomes

ON 3 Use the fundamentals of cartography and geodesy to solve various problems on the ground

Learning outcomes by discipline

1. to present basic knowledge about various types of geodetic instruments, their purposes, features and principles of operation, in order to make a reasonable choice of a tool for a specific geodetic task.
2. demonstrate practical skills in working with geodetic instruments, including their installation, calibration, measurement of angles, lengths and heights, as well as processing of the received data.
3. make a reasonable choice of methods for processing geodetic data, correcting and smoothing data, calculating coordinates and heights, as well as creating networks and determining their accuracy.

Prerequisites

Introduction to the Profession of Surveyor-Cartographer

Postrequisites

Basic and profile disciplines of the EP

World of Abai

Discipline cycle	Basic disciplines
Course	2
Credits count	3
Knowledge control form	Examination

Short description of discipline
The discipline is aimed at studying historical facts, the philosophical and artistic foundations of the works of Abay Kunanbaev, Shakarim Kudaiberdiev, which form worldview and aesthetic values, the student`s ability to express his opinion, practical skills and perception of such human qualities as morality, honesty, artistic character. The genius of the writers of Kazakh literature and the role of M. Auezov in the study and popularization of Abai`s heritage, the significance of his works for history, literature and science are determined.

Purpose of studying of the discipline
Formation of the meaning of philosophical and ideological being, understanding of the problems raised in the works of Abai Kunanbayuly, Shakarim Kudaiberdiuly, Mukhtar Auezov and application of the acquired knowledge in the practice of everyday life.

Learning Outcomes
ON 1 Demonstrate socio-cultural, economic, legal, environmental knowledge, communication skills, apply information technology, taking into account modern trends in the development of society.

Learning outcomes by discipline

1) Analyzes the philosophical and artistic foundations of works, historical facts related to the creative heritage of Abai Kunanbayev, Shakarim Kudaiberdiyev, Mukhtar Auezov
2) Uses in practice the humanistic ideas of Abai`s philosophical and artistic works
3) Assesses the place and significance of Abai`s works in the history of literature and science

Prerequisites
The module of socio-political knowledge (sociology, political science, cultural studies, psychology)

Postrequisites
Basic and profile disciplines of the EP

Higher Geodesy

Discipline cycle	Profiling discipline
Course	2
Credits count	8
Knowledge control form	Examination and term work/Project

Short description of discipline
The discipline that studies the modern achievements of science and production higher geodesy, the basics of scientific processing field measurements and surveying techniques using the latest geodetic instruments. The content includes topics related to determining the shape, size, gravitational field of the Earth, establishment of a coordinate system, creation of state reference geodetic networks to ensure the accuracy and density of mapping of the area and performance of engineering and geodesic works, study of geodynamic phenomena

Purpose of studying of the discipline
studying the geometry of the earth`s ellipsoid, solving problems on the surface of the ellipsoid, building geodetic networks using satellite geodesy methods

Learning Outcomes
ON 3 Use the fundamentals of cartography and geodesy to solve various problems on the ground

Learning outcomes by discipline
1) present knowledge of the means and methods of making high-precision geodetic measurements on the ground in the creation, development and reconstruction of state geodetic networks, the shape, dimensions and gravitational field of the Earth, the organization of geodetic monitoring of geodynamic processes.
2) demonstrate the ability to perform field and cameral geodetic work on the creation, development and reconstruction of geodetic, leveling, gravimetric networks and networks of special purpose, on the study of geodynamic phenomena.
3) to offer acquired knowledge in mathematical processing of results of field high-precision geodetic measurements when solving professional tasks.

Prerequisites
Introduction to the Profession of Surveyor-Cartographer

Postrequisites
Basic and profile disciplines of the EP

Industrial practice I

Discipline cycle	Basic disciplines
Course	2
Credits count	7
Knowledge control form	Total mark on practice

Short description of discipline
Deepening and consolidation of theoretical knowledge obtained in geodesy and engineering geodesy, cartography, photogrammetry. Performing engineering-topographic surveys, designing plan and height geodetic support, the implementation of angular and linear measurements in the polygonometer course, performing tachymetric surveying As a result of field work performance deciphering the results. When performing computational and graphic works, students learn how to prepare papers according to the requirements of the State Standard

Purpose of studying of the discipline
- consolidation and deepening of the student`s theoretical training, aimed at acquiring practical skills and competencies in the field of professional activity.

Learning Outcomes
ON 5 Demonstrate skills and abilities in the field of geodetic data processing, analysis of measurement results, development and application of geographic information systems, as well as methods and tools for optimizing and improving geodetic production processes.
ON 6 Process and analyze cartographic information obtained during Earth monitoring to ensure the quality, observation of the digital terrain model
Learning outcomes by discipline
1) search, analyze and evaluate information;
2) solve problems in the field of automation of new technologies in geodesic production;
3) perform all types of measurements in geodesic production
Prerequisites
Educational - field geodetic practice
Postrequisites
Industrial practice II

Applied Geodesy

Discipline cycle	Profiling discipline
Course	2
Credits count	10
Knowledge control form	Examination and term work/Project

Short description of discipline
The discipline "Applied Geodesy" is a comprehensive study of the basic methods and tools of engineering geodesy and engineering surveys. Students will master the skills of performing geodetic work in the construction of various objects, including buildings, roads, bridges and other engineering structures. They will study the methods of marking work, leveling, topographic surveys, as well as methods of geodetic control and quality control of the work performed.
Purpose of studying of the discipline
Gaining knowledge and revealing the features of the principles, methods and technologies of engineering and geodetic work in surveying, designing, erecting and operating structures and technical equipment.
Learning Outcomes
ON 5 Demonstrate skills and abilities in the field of geodetic data processing, analysis of measurement results, development and application of geographic information systems, as well as methods and tools for optimizing and improving geodetic production processes.
ON 8 Solve geodetic problems aimed at ensuring maximum efficiency and the required quality of engineering and geodetic work in the design, construction and operation of buildings and structures.
Learning outcomes by discipline
1) Provide basic knowledge of geodetic works for engineering projects, including the definition of geometric parameters of objects, control of construction processes and the creation of a geodetic framework.
2) Demonstrate comprehensive knowledge of the methods and tools of applied geodesy and engineering surveys necessary for geodetic support of the construction of various engineering structures, such as buildings, roads, bridges and others.
3) Demonstrate the skills of performing center work, leveling, topographic survey, as well as the implementation of geodetic control and quality control of the work performed in the design, construction and operation of engineering structures.
Prerequisites
Higher Geodesy
Postrequisites
Basic and profile disciplines of the EP

GIS in Geodesy and Cartography

Discipline cycle	Basic disciplines
Course	3
Credits count	5
Knowledge control form	Examination and term work/Project

Short description of discipline
The discipline "GIS in Geodesy and Cartography" is a basic discipline that studies the creation and updating of topographic and thematic maps and spatial data models based on the results of decoding images obtained by different methods, allowing the collection and analysis of topographic-geodesic and cartographic materials and GIS technologies to study the natural resource potential of the country, as well as geoanalysis and modeling
Purpose of studying of the discipline
Training of highly qualified specialists with theoretical knowledge and practical skills in the use of methods and means of automatic processing of geographic information, the use of GIS technologies and database management systems.
Learning Outcomes
ON 5 Demonstrate skills and abilities in the field of geodetic data processing, analysis of measurement results, development and application of geographic information systems, as well as methods and tools for optimizing and improving geodetic production processes.
ON 6 Process and analyze cartographic information obtained during Earth monitoring to ensure the quality, observation of the digital terrain model
Learning outcomes by discipline
1) recognize the principles of organization of geographic information in GIS, the basic technologies of data collection and processing
2) analyze and process cartographic information using a PC, develop digital models and use them for geoinformatics
3) demonstrate the ability to classify and structure topographic-geodetic and cartographic materials and GIS technologies
Prerequisites

Cartography Introduction to the Profession of Surveyor-Cartographer

Postrequisites

Basic and profile disciplines of the EP

Application of global navigation satellite systems in geodesy

Discipline cycle	Basic disciplines
Course	3
Credits count	5
Knowledge control form	Examination

Short description of discipline

Discipline "Application of global navigation satellite systems in geodesy" introduces students to the principles and methods of using GNSS in geodetic work. Students learn the basics of GNSS functioning, the principles of determining coordinates and heights, as well as methods for processing and analyzing the received data. They also master specialized GNSS software and learn how to use them in various geodetic tasks.

Purpose of studying of the discipline

The purpose of the discipline "Application of global navigation satellite systems in geodesy" is to familiarize students with the principles and methods of using global navigation satellite systems in geodetic work. The main goal is to prepare students for the use of GNSS to determine coordinates, heights and perform various geodetic tasks.

Learning Outcomes

ON 5 Demonstrate skills and abilities in the field of geodetic data processing, analysis of measurement results, development and application of geographic information systems, as well as methods and tools for optimizing and improving geodetic production processes.

Learning outcomes by discipline

1) plan and conduct geodetic measurements using global navigation satellite systems (GNSS) to determine the coordinates and altitude characteristics of points on the ground.
2) analyze and evaluate the accuracy of measurement results using GNSS.
3) develop skills in working with modern geodetic equipment, software and GNSS databases, use GNSS in various geodetic projects and contribute to the development of modern geodesy.

Prerequisites

New technologies of cartographic production Technology of creating geodetic reference networks by modern methods Modern geodetic instruments and technologies

Postrequisites

Basic and profile disciplines of the EP Final examination

Industrial practice II

Discipline cycle	Basic disciplines
Course	3
Credits count	7
Knowledge control form	Total mark on practice

Short description of discipline

This course is used to study the basic concepts of systems of coordinates and heights, the principles of the construction of state geodetic networks, the principles of modern geodetic instruments, geodetic measurement techniques, composition and technology of geodetic work, providing the creation of topographic plans.
Deepening of the initial professional experience of the student, development of general and professional competencies, checking his readiness for independent work activities in the workplace.

Purpose of studying of the discipline

- consolidation and improvement of professional skills acquired in the course of training, studying in the studied specialty,
- development of general and professional competencies,
- mastering modern production processes,
- adaptation of students to the specific conditions of the activities of enterprises and organizations of various organizational and legal forms.

Learning Outcomes

ON 5 Demonstrate skills and abilities in the field of geodetic data processing, analysis of measurement results, development and application of geographic information systems, as well as methods and tools for optimizing and improving geodetic production processes.
ON 8 Solve geodetic problems aimed at ensuring maximum efficiency and the required quality of engineering and geodetic work in the design, construction and operation of buildings and structures.

Learning outcomes by discipline

1) solve geodetic tasks to ensure maximum efficiency of the required quality of engineering and geodesic works on buildings and structures
2) create and design engineering and geodesic networks
3) choose the software package and process digital mapping

Prerequisites

Industrial practice I

Postrequisites

Pre-diploma practice Production practice III

Methods of Academic Writing

Discipline cycle	Basic disciplines
Course	4

Credits count	5
Knowledge control form	Examination

Short description of discipline
The discipline "Methods of Academic Writing" is basic and provides students with the necessary skills and tools to successfully write scientific papers of various types. Students learn the basic rules for the design of scientific texts, develop critical thinking skills, learn to analyze and synthesize information, and structure their ideas and arguments. This discipline plays an important role in the formation of competent and competent authors of scientific papers

Purpose of studying of the discipline
The purpose of the discipline is to develop students` academic writing skills. The discipline is aimed at developing students` ability to effectively and efficiently write scientific texts and other types of academic papers.

Learning Outcomes
ON 10 Demonstrate a comprehensive set of professional skills necessary for successful work in the surveying industry, such as the development of academic writing skills, the ability to work with regulatory and technical documentation, an understanding of the economic and management aspects of surveying production

Learning outcomes by discipline
1) design scientific texts according to the requirements of the academic style, including structure, citation and bibliographic references.
2) analyze and synthesize information, create high-quality and meaningful scientific work.
3) successfully present their ideas and research in an academic environment

Prerequisites
Basic and profile disciplines of the EP

Postrequisites
Final examination

Normative and technical documentation in geodesy

Discipline cycle	Basic disciplines
Course	4
Credits count	5
Knowledge control form	Examination

Short description of discipline
The discipline is devoted to the study of the system of national standards regulating issues (GOST) in the field of geodesy and remote sensing, national standards regulating the creation, dissemination and use of spatial data and geodetic products. And also, the current state standards in the field of photogrammetry, state standards in the field of remote sensing of the Earth. Students will get acquainted with professional standards in the field of geodesy and the use of the results of space activities.

Purpose of studying of the discipline
The purpose of the discipline is to familiarize students with the main regulatory and technical documents regulating geodetic activities. The discipline is aimed at developing the understanding and application of regulatory and technical documentation in the process of planning, execution and control of geodetic works.

Learning Outcomes
ON 10 Demonstrate a comprehensive set of professional skills necessary for successful work in the surveying industry, such as the development of academic writing skills, the ability to work with regulatory and technical documentation, an understanding of the economic and management aspects of surveying production

Learning outcomes by discipline
1. to analyze the current state legislation in terms of provisions related to measurements, processing, control, use of geodetic equipment
2. demonstrate skills in collecting, systematizing and analyzing legal and scientific and technical information on assignment in the field of cartographic and geodetic activities
3. conduct expert reviews of technical projects for cartographic and geodetic works, evaluate the accuracy of geodetic measurements

Prerequisites
Basic and profile disciplines of the EP

Postrequisites
Final examination

Economics and management of geodetic production

Discipline cycle	Basic disciplines
Course	4
Credits count	3
Knowledge control form	Examination

Short description of discipline
The discipline "Economics and management of geodetic production" is devoted to the study of economic aspects and management principles related to the organization and management of geodetic production. The discipline will allow you to study the basics of economic theory, budgeting, financial planning, as well as the principles of organization and management of geodetic projects. The study of the discipline will allow you to develop decision-making skills, cost optimization and resource management in the geodetic field.

Purpose of studying of the discipline
Formation of students` knowledge and skills in the field of economics and management for geodetic production. The discipline is aimed at developing professional competencies necessary for successful work in the geodetic industry, including an understanding of economic principles, management concepts and decision-making skills.

Learning Outcomes
ON 10 Demonstrate a comprehensive set of professional skills necessary for successful work in the surveying industry, such as the development of academic writing skills, the ability to work with regulatory and technical documentation, an understanding of the economic and management aspects of surveying production

Learning outcomes by discipline

1) Analyze and predict the economic efficiency of geodetic projects, taking into account cost, income and risk factors.
2) Develop planning and resource management skills in geodetic production, including budget optimization, allocation of labor and material resources, and task control.
3) To master the skills of managing surveying projects, including scheduling, making strategic decisions and solving problems that arise during the project.

Prerequisites

Basic and profile disciplines of the EP

Postrequisites

Final examination