



«АККРЕДИТТЕУ ЖӘНЕ РЕЙТИНГТІҢ
ТӘУЕЛСІЗ АГЕНТТІГІ» КЕМ

НУ «НЕЗАВИСИМОЕ АГЕНТСТВО
АККРЕДИТАЦИИ И РЕЙТИНГА»

INDEPENDENT AGENCY FOR
ACCREDITATION AND RATING

REPORT

on the results of the work of the external expert commission for the evaluation for compliance with the requirements of the standards of specialized accreditation of educational programs
6B07304 "GEOSPATIAL DIGITAL ENGINEERING" AND 6B04102
"MATHEMATICAL ECONOMICS AND DATA ANALYSIS"
NON-COMMERCIAL JOINT-STOCK COMPANY "KAZAKH
NATIONAL RESEARCH TECHNICAL UNIVERSITY NAMED
AFTER K.I. SATPAEV"

Date of EEC visit: from April 19 to April 21, 2023

INDEPENDENT AGENCY FOR ACCREDITATION AND RATING

External expert commission

*Addressed to
Accreditation
Council of the IAAR*



REPORT

**on the results of the work of the external expert commission for the evaluation
for compliance with the requirements of the standards of specialized accreditation of
educational programs
6B07304 "GEOSPATIAL DIGITAL ENGINEERING" AND 6B04102 "MATHEMATICAL
ECONOMICS AND DATA ANALYSIS"
NON-COMMERCIAL JOINT-STOCK COMPANY "KAZAKH NATIONAL
RESEARCH TECHNICAL UNIVERSITY NAMED AFTER K.I. SATPAEV"**

Date of EEC visit: from April 19 to April 21, 2023

Almaty April 21, 2023

Content

(I) LIST OF SYMBOLS AND ABBREVIATIONS	3
(II) INTRODUCTION	4
(III) REPRESENTATION OF THE EDUCATIONAL ORGANIZATION	6
(IV) DESCRIPTION OF THE PREVIOUS ACCREDITATION PROCEDURE	7
(V) DESCRIPTION OF THE EEC VISIT	7
(VI) COMPLIANCE WITH SPECIALIZED ACCREDITATION STANDARDS	9
6.1. Standard "Management of the educational program"	9
6.2. Information Management and Reporting Standard.....	13
6.3. Standard "Development and approval of the educational program".....	16
6.4. Standard "Continuous monitoring and periodic evaluation of educational programs"	19
6.5. Student-Centered Learning, Teaching and Assessment Standard.....	22
6.6. Standard "Students"	25
6.7. Standard "Teaching Staff"	29
6.8. Standard "Educational resources and student support systems"	33
6.9. Public Information Standard	36
(VII) OVERVIEW OF STRENGTHS/BEST PRACTICE FOR EACH STANDARD	40
(VIII) OVERVIEW OF RECOMMENDATIONS FOR IMPROVING QUALITY	42
(IX) OVERVIEW OF THE RECOMMENDATION FOR THE DEVELOPMENT OF EDUCATIONAL ORGANIZATION	43
(X) RECOMMENDATION TO THE ACCREDITATION BOARD	44
Annex 1. Evaluation table "PARAMETERS OF A SPECIALIZED PROFILE"	45

(I) LIST OF SYMBOLS AND ABBREVIATIONS

ASIIN	Agency for the Accreditation of Educational Programs in Engineering, Computer Science, Science and Mathematics (ASIIN eV)
ECTS	European Credit Transfer and Accumulation System
IT	Information Technology
KAZSE	Kazakhstan Association of Modern (Elite) Education kazsee
AIS	Automated information system
AN	Academy of Sciences
DB	Basic disciplines
university	higher education institution
WEC	External expert commission
GKP on PVC	State utility company on the right of economic management
SPIIR	State program of industrial and innovative development of the Republic of Kazakhstan
DP	Documented procedure
UNT	Unified National Testing
KazNITU named after K.I. Satpayev, Satbayev University,	Kazakh National Research Technical University named after K.I. Satpaeva
SU	
KSU	Communal state institution
KTA	Comprehensive testing of applicants
MNVO RK	Ministry of Science and Higher Education of the Republic of Kazakhstan
MES RK	Ministry of Education and Science of the Republic of Kazakhstan
IAAR, IAAR	Independent Agency for Accreditation and Rating
NAS RK	National Academy of Sciences of the Republic of Kazakhstan
NAO	Non-profit joint stock company
research	Research work
IQAA	Independent Agency for Quality Assurance in Education
NPP	National Chamber of Entrepreneurs
OOD	General education disciplines
OP	Educational program
PD	Major disciplines
teaching staff	Teaching staff
RK	Republic of Kazakhstan
FROM TO	distance learning system
mass media	Mass media
SRO	Independent work of the student
SROP	Independent work of the student with the teacher
LLP	Limited Liability Partnership
UMS	Educational and Methodological Council

(II) INTRODUCTION

In accordance with the order of the Director General of the Independent Agency for Accreditation and Rating 37-23-OD dated February 23, 2023, from April 19 to April 21, 2023, an external expert commission evaluated educational programs 6B07304 "Geospatial Digital Engineering" and 6B04102 "Mathematical Economics and Data Analysis" Non-profit joint stock company "Kazakh National Research Technical University named after K.I. Satpayev" for compliance with the standards of primary specialized accreditation of the educational program (dated May 25, 2018 No. 68-18 / 1-OD, first edition).

The report of the external expert commission (EEC) contains an assessment of the quality of the submitted educational programs to the IAAR criteria, recommendations of the EEC for further improvement of educational programs and the conclusion of the expert commission according to the parameters of a specialized profile, the EEC visit program, as well as the results of a survey of teachers and students of educational programs.

The composition of the WEC:

Chairman of the WEC -Belykh Yury Eduardovich, Candidate of Physical and Mathematical Sciences, Associate Professor, IAAR Category I expert.

EEC Coordinator -Niyazova Guliyash Balkenovna, Head of the Project for Institutional and Specialized Accreditation of IAAR Universities (Astana, Republic of Kazakhstan).

Cluster 1. Specialized accreditation

6B07306 *Engineering systems and networks* IAAR Expert -Eremeeva Yuliya Nikolaevna, candidate of technical sciences, senior lecturer of the East Kazakhstan Technical University.
and 7M007304 *Engineering systems and networks* D. Serikbaeva (Ust-Kamenogorsk, Republic of Kazakhstan).

7M06301 *Integrated information security* IAAR Expert -Daribaev Beimbet Serikovich, PhD, Head of the Department of Information Security of the Kazakh National University named after. al-Farabi (Almaty, Republic of Kazakhstan).
Expert IAAR II category, employer -Kopishev Ilyas Ertaevich, Director of EL-IT LLP (Almaty, Republic of Kazakhstan).
IAAR expert, student –Yerlanov Bauyrzhan Yerlanuly, student of the educational program 7M06106 Information systems of the Almaty University of Energy and Communications named after. Gumarbek Daukeev (Almaty, Republic of Kazakhstan).

Cluster 2. Specialized accreditation

6B04102 *Mathematical economics and data analysis* Expert IAAR Category I –Pogrebetskaya Marina Vladimirovna, candidate of pedagogical sciences, associate professor of the North Kazakhstan University named after M. Kozybaev, member of the Expert Commission on Higher Education IAAR (Petropavlovsk, Republic of Kazakhstan).

IAAR expert, student –Sarabek Nazerke Yerikkyzy, a 3rd year student of the educational program, a teacher of primary classes of a humanitarian college (Aktobe, Republic of Kazakhstan).

6B07304 *Geospatial digital engineering* IAAR Expert -Rustamov Eldar Jahangir oglu, professor of the Azerbaijan University of Architecture and Civil Engineering (Baku, Republic of Azerbaijan).

Cluster 3. Primary specialized accreditation

6B11201 Occupational health and safety at work
6B07502 Standardization, certification and metrology (by industry)

Expert IAAR Category I –Chidunchi Irina Yurievna, PhD, Associate Professor of Toraigyrov University (Pavlodar, Republic of Kazakhstan).

IAAR expert, student –Fayzullina Dinara Nurbaevna, student of the educational program 6B07502 Standardization, certification and metrology (by industry) of the West Kazakhstan Engineering and Technical University (Uralsk, Republic of Kazakhstan).

Cluster 4. Primary specialized accreditation

6B11310 Digital logistics

Expert IAAR Category I –Pak Yuriy Nikolaevich, Doctor of Technical Sciences, Professor of the Karaganda Technological University (Karaganda, Republic of Kazakhstan).

IAAR expert, student –Koshetaev Dias Sansyzbayuly 1st year student of the educational program 7M11301 Logistics (by industry) (Astana, Republic of Kazakhstan).

6B04103 Business engineering
6B04104 Startup bachelor's degree

Expert IAAR Category I –Zakirova Dilnara Ikramkhanova, PhD, professor at Turan University (Almaty, Republic of Kazakhstan).

Expert IAAR Category I, employer –Pilipenko Yury Alexandrovich, Chairman of the International Association of Producers of Goods and Services "Expobest" (Almaty, Republic of Kazakhstan).



(III) REPRESENTATION OF THE EDUCATIONAL ORGANIZATION

Non-commercial joint stock company "KazNITU" named after K. I. Satpayev. Year of foundation and formation: 1934 - Kazakh Mining and Metallurgical Institute (KazMMI); 1960 - Kazakh Polytechnic Institute (KazPTI); 1994 - Kazakh National Technical University (KazNTU); 1999 - Kazakh National Technical University named after K.I. Satpaev 2001 - KazNRTU named after K. I. Satpaev was given a special status; 2014 - NJSC "KazNRTU" named after K. I. Satpayev and was given a special status of a Research Holding with the right to commercialize technologies; 2017 - KazNITU named after K.I. Satpayev underwent a rebranding procedure and received the name Satbayev University (Satbayev University).

Kazakh National Research Technical University named after K.I. Satpayev acts on the basis of the Charter approved by the order of the Chairman of the State Property and Privatization Committee of the Ministry of Finance of the Republic of Kazakhstan dated January 12, 2015 No. 19, certificate of state registration of a legal entity No. 9387-1910-01-AO dated January 14, 2015. According to the order of the Ministry of Education and Science of the Republic of Kazakhstan dated October 13, 2018 No. 569 "On approval of a new classifier of directions", licenses were reissued and applications were received in 42 directions to the license dated July 11, 2015 No. KZ56LAA00005304: bachelor's degree - 16; magistracy - 15; doctoral studies - 11.

The university implements 138 educational programs: bachelor's degree - 57, master's degree - 47, doctoral studies - 37.

The academic, scientific, innovative and educational activities of Satbayev University are aimed at providing a high level of professional competence and intellectual development to university graduates of all levels of training, who also adhere to high standards of morality and culture, which allows Satbayev University graduates to be competitive in the rapidly changing labor market.

To date, Satbayev University has: 8 academic institutions (former faculties), 5 research institutes, 32 departments.

The total contingent of university students is 8844 people.

The total number of faculty members is 693, of which 633 are full-time and 60 are part-time. Of the 633 full-time teachers, 303 have academic degrees and titles, which is 47.8% of the degrees, including 62 people who are doctors of science, 153 candidates of science and 88 PhDs. Of the 60 teachers working part-time, 24 people are degreed. The university has 245 masters in various fields of science.

The university implements joint international master's and doctoral programs with the Polytechnic University of Valencia (Spain), the New School of Economics (London), under the Erasmus + program, cooperation with the Thomas More University of Michelin (Belgium), the Marie Curie Institute (Sorbonne), Paris, as well as the University of Beira Interior, Polytechnic Institute of Coimbra (Portugal), Tallin University of Technology (Estonia), Lodz University of Technology, Bialystok University of Technology, Lublin University of Technology (Poland), Slovak University of Technology in Bratislava, Anhalt University of Applied Sciences (Germany). The research activity of the university is aimed at the development of fundamental and applied scientific research in the field of high technologies and is concentrated on 10 scientific areas, priority for the development of the economy of the Republic of Kazakhstan. The university actively attracts private investment and uses public-private partnership tools, creating an effective technological corridor "from scientific discovery to commercial results."

At the moment, the university is implementing 111 projects and scientific and technical programs financed from state and extrabudgetary funding. The Certificate of Accreditation as a

subject of scientific and (or) scientific and technical activity was received by both Satbayev University and scientific research institutes, including 4 laboratories of SPIIR.

Satbayev University occupies a leading position in national and international rankings and is an associate member of 9 associations and consortiums in the field of education, science and technology. Information about university graduates is periodically consecrated in the social networks of the university.

Educational programs are accredited in four agencies: 14 in ASIIN, 30 in IQAA, 59 in IAAR, 11 in KAZSEE.

(IV) DESCRIPTION OF THE PREVIOUS ACCREDITATION PROCEDURE

Educational programs "Geospatial Digital Engineering" and 6B04102 "Mathematical Economics and Data Analysis" of NJSC "KazNRTU" named after K. I. Satpayev "an external assessment for compliance with the standards of specialized accreditation of educational programs of organizations of higher and (or) postgraduate education was held in IAAR in 2018 with an accreditation period of 5 years: 6B04102/5B050600 Economics Mathematical Economics and Data Analysis/Economics, No. AB 1799/2, valid 14.06.2018-13.06.2023, 6B07304/5B090300 Geospatial Digital Engineering/Land Management, No. AB1807 , validity date 14.06 .2018 – 06/13/2023. According to OP 6B07304 Geospatial Digital Engineering, all comments and suggestions from the EEC have been completed. According to OP 6V04102 Mathematical economics and data analysis, the recommendations of the WEC have been partially implemented.

(V) DESCRIPTION OF THE EEC VISIT

The work of the EEC was carried out on the basis of the Program of the visit, agreed by the rectorNon-profit joint stock company "Kazakh National Research Technical University named after K.I. Satpaev"and approved by the IAAR CEO on April 4, 2023 using a hybrid model for conducting specialized and primary specialized accreditation of educational programsNon-profit joint stock company "Kazakh National Research Technical University named after K.I. Satpaev".

In order to coordinate the work of the EEC, on April 17, 2023, a kick-off meeting was held, during which powers were distributed among the members of the commission, the schedule of the visit was specified, and agreement was reached on the choice of examination methods.

To obtain objective information about the quality of educational programs and the entire infrastructure of the university, to clarify the content of self-assessment reports, meetings were held with vice-rectors of the university in areas of activity, heads of structural divisions, heads of educational programs, heads of departments, representatives of teaching staff, students, graduates (for educational programs with graduates), employers. A total of 93 representatives took part in the meetings.

Information about employees and students who took part in meetings with the EEC IAAR

Participant category	Quantity
Vice-Chancellors, Members of the Board	3
Heads of structural divisions	17
Institute directors	5

Heads of EP, heads of departments	7
teachers	16
Students, undergraduates	22
Graduates	eleven
Employers and representatives of the practice base	10
Total	92

During the visit, and watching videos, members of the EEC got acquainted with the state of the material and technical base.

At the meetings of the EEC IAAR in a hybrid format with the target groups of the university, the mechanisms for implementing the policy of the university and the specification of individual data presented in the self-assessment report of the university were carried out.

EEC members visited the bases of practices assessed by the OP:RSE "State Institute of Agricultural Aerial Photogeodetic Surveys", LLP "Antal".

During the visit, the following classes were attended:

- according to the educational program 6B07304 Geospatial digital engineering in the discipline "Land management (Lecture)", Usipbaev Nurlan Begazimovich, 929 GKK, 11:05-13:00;
- in the educational program 6B04102 Mathematical Economics and Data Analysis in the discipline "[Macroeconomics](#)» Mykolos Fodor Mate, 11:05 - 11:55.



(VI) COMPLIANCE WITH SPECIALIZED ACCREDITATION STANDARDS

6.1. Standard "Management of the educational program"

- ✓ *The organization of higher and (or) postgraduate education must have a published quality assurance policy. The quality assurance policy should reflect the relationship between research, teaching and learning.*
- ✓ *The organization of higher and (or) postgraduate education must demonstrate the development of a culture of quality assurance, including in the context of EP.*
- ✓ *Commitment to quality assurance should apply to any activity performed by contractors and partners (outsourcing), including the implementation of joint/double-degree education and academic mobility.*
- ✓ *The management of the EP demonstrates its readiness to ensure transparency in the development of the EP development plan based on an analysis of its functioning, the actual positioning of the EP and the focus of its activities on meeting the needs of the state, employers, students and other stakeholders. The plan should contain the dates for the start of the implementation of the educational program.*
- ✓ *The EP management demonstrates the existence of mechanisms for the formation and regular revision of the EP development plan and monitoring its implementation, assessing the achievement of learning goals, meeting the needs of students, employers and society, making decisions aimed at continuous improvement of the EP.*
- ✓ *The EP management should involve representatives of stakeholder groups, including employers, students and teaching staff, in the formation of the EP development plan.*
- ✓ *The management of the EP must demonstrate the individuality and uniqueness of the EP development plan, its consistency with national priorities and the development strategy of the organization of higher and (or) postgraduate education.*
- ✓ *The organization of higher and (or) postgraduate education must demonstrate a clear definition of those responsible for business processes within the EP, an unambiguous distribution of staff duties, and delimitation of the functions of collegial bodies.*
- ✓ *The management of the EP must provide evidence of the transparency of the educational program management system.*
- ✓ *The management of the EP must demonstrate the existence of an internal quality assurance system for the EP, including its design, management and monitoring, their improvement, decision-making based on facts.*
- ✓ *The management of the EP must carry out risk management, including within the framework of the EP undergoing primary accreditation, and also demonstrate a system of measures aimed at reducing the degree of risk.*
- ✓ *The management of the EP should ensure the participation of representatives of employers, teaching staff, students and other interested parties in the collegiate management bodies of the educational program, as well as their representativeness in making decisions on the management of the educational program.*
- ✓ *The OO must demonstrate innovation management within the EP, including the analysis and implementation of innovative proposals.*
- ✓ *The management of the EP must demonstrate evidence of readiness for openness and accessibility for students, teaching staff, employers and other interested parties.*
- ✓ *The management of the EP should be trained in education management programs.*

Evidence

The goals and development strategy of accredited programs are based on the following strategic documents of the university: [Development strategy of the non-profit joint-stock company "KazNITU K.I. Satpayev" for 2022 - 2026](#), [Quality policy of KazNITU K.I. Satpaeva](#), [Academic policy of KazNITU K.I. Satpaev](#).

The development indicators for accredited programs are defined in the Development Plan OP 6B04102 Mathematical Economics and Data Analysis for 2022-2026 (approved by the Director of the Institute for Project Management) and the Development Plan OP 6B07304 Geospatial Digital Engineering for 2022-2026 (approved by the Academic Council of the Mining and Metallurgical Institute named after A.I. O.A. Baikonurova). Program development plans have the same structure, corresponding to the main strategic objectives [University development strategies](#) which ensures their consistency with the national development priorities of the country

and the strategy of the university. At the same time, the content of the Plans does not reflect the uniqueness and individuality of the development of accredited programs.

Evidence of participation in the development of these plans of interested parties, discussion of plans at collegiate bodies is not presented. In the course of interviews with different groups, information about the management of EP development plans was also not confirmed.

The management defines the following goals of accredited programs in educational programs. The purpose of the educational program [6B07304 Geospatial digital engineering](#) is to prepare a graduate as a competitive specialist in the field of land management and cadastre, with critical thinking, able to use theoretical and practical information to perform land management and cadastral work in the field of monitoring land and real estate, cadastral and economic valuation of land and other real estate, regulatory framework in the development of projects.

The purpose of the educational program [6B04102 Mathematical economics and data analysis](#) is the training of professionals who possess economic knowledge with the professional application of mathematical methods, including econometrics, methods of economic and mathematical modeling and analysis, the ability to work with applied computer programs.

Interviews with heads of educational programs confirmed understanding of external and internal factors of program development, main risks.

In KazNITU K.I. Satpaeva developed and approved [Quality policy](#). The policy defines the mission, vision, strategic objectives of the university, as well as the basic principles and strategic stakes. The policy reflects the relationship between research, teaching and learning. Experts note that the Policy indicates the vision of the university “to be in the Top 300 universities in the world”, while the Strategy notes “to be in the Top 200 universities in the world”.

The internal quality assurance system is regulated by the document [Quality guide](#), approved by the decision of the Board of October 15, 2020, protocol No. 35.

The effectiveness of the development of a quality culture is confirmed by the passage of external evaluation procedures:

- certification [quality management systems, institutional accreditation at the National Agency for Quality Assurance in Education](#) (2020);
- accreditation of educational programs in ASIIN (Germany) - 4 educational programs, IQAA (Kazakhstan) - 30 educational programs, IAAR - 53 educational programs, KAZSEE - 13 educational programs;
- [International institutional assessment in the European University Association \(EUA\) under the International Assessment Program](#) (IEP, International Evaluation Program);
- participation in international rankings (1st place in the National Ranking of Technical Universities, participation in [QS World University Ranking](#) with position (405).

Experts note that a clear definition of those responsible for business processes within the framework of the EP, the unambiguous distribution of job responsibilities of personnel, the delimitation of the functions of collegial bodies occurs through the development and implementation [three-level system of normative documentation](#). The documentation is available to any user on the official website in the section More / Official Satbayev University / Documents / Internal regulatory documents. Experts note that the deep nesting of sections on the site complicates the search for documents.

Members of the EEC note that during the interviews, representatives of the academic community demonstrated the unambiguity of understanding and distribution of functions between responsible persons.

One of the effective communication tools between representatives of the academic community is the SU Solutions mobile application. where all interested persons can ask questions, make suggestions. The effectiveness of such appeals is noted by teachers, students and heads of departments.

The university team is involved in the development of a new KPI system for employees and social GPI for students. These systems will bring the motivation system to a new level.

The risk management system is governed by a documented procedure [DP KazNITU 613. Risk management](#) (approved by the Board of Directors on April 14, 2022, minutes No. 3) and [risk management policy](#) (approved by the Board of Directors on November 25, 2022, Minutes No. 3).

The main risks of the university are identified in the Risk Map and include, among other things, the risks associated with the implementation of the EP. At the graduating departments, Risk Prevention Action Plans for the 2022-2023 academic year have been developed as part of a specific program. Some of the risks in these plans are formal.

The collegiate bodies include representatives of employers, teaching staff, students and other interested persons. So, for example, the Academic Committee included representatives of stakeholders, teaching staff of the department, studying in accordance with order No. 401-P / Ø dated 11/23/2022.

An analysis of the implementation of the recommendations of the EEC following the results of accreditation in 2018 showed that according to OP 6V04102 Mathematical Economics and Data Analysis, part of the recommendation was not implemented:

- Continue work in the field of ensuring the possibility of preparing students for professional certification in all EPs.
- Strengthen work on the development and implementation of joint educational programs with foreign educational organizations.
- To intensify work on updating educational programs, with the publication of all the changes made on the website of the university, with the involvement of all interested parties.
- Expand the range of programs for internal and external academic mobility of the EP, assist in obtaining external grants for education.
- To intensify the activities of the university alumni association.
- To stimulate the participation of teachers in academic mobility programs, joint scientific research with foreign partners and international projects
- Continue work on the systematic replenishment of the library fund with professional literature in the context of accredited educational programs, including in English.

Analytical part

IAAR experts, having interviewed different target groups, as well as surveying teaching staff and students, familiarizing experts with internal documents and the content of accredited programs, note the following.

At KazNITU K.I.Satpaev, a culture of quality assurance has been created and is constantly being improved. The university has a published quality policy. One of the main elements of a quality culture is a quality management system with a high level of regulatory support. The effectiveness of the internal quality assurance system is confirmed by the high ratings of the university and the results of accreditation.

Due to the lack of facts confirming the management of development plans for accredited programs, members of the EEC note the need to determine a unified approach of the university to the development, management and monitoring of development plans for the EP. When developing a general approach, the members of the commission propose to take into account all the basic requirements: the participation of stakeholders, transparency of development, the presence in the analysis plan of the functioning and real positioning of the EP, the focus of the plan on meeting the needs of stakeholders, determining the uniqueness and advantages of the EP in accordance with the characteristics of the region and the strategic objectives of the university, placement on the information resources of the university.

When developing a general procedure, the management of the EP will need to review the

Development Plans of accredited programs and ensure their individuality and uniqueness.

When updating the Program Development Plan, the Guideline OP 6B04102 "Mathematical Economics and Data Analysis" must also take into account recommendations based on the results of external reviews of previous years.

A risk management system is being formed at KazNITU K.I. Satpayev, fundamental documents have been adopted at the level of general management, and a risk management department has been created in 2023. There is a practice of identifying risks for specific programs. At the same time, experts note in some cases a formal approach to identifying risks at the EP level, as well as the need to develop a culture of risk management among employees and teachers.

Despite the introduction of individual innovative proposals at the university, the meeting participants were unable to demonstrate the mechanisms for managing innovation within the framework of the EP.

Students of EP 6B07304 "Geospatial Digital Engineering" note an open communication system with the program management, constant support for individual development (involvement in projects, competitions, events), support and interaction between the head of the department and the dean in solving strategic and operational issues. The graduating department has stable ties with organizations in the field of land management and cadastre.

A survey of teaching staff conducted during the visit of the EEC IAAR showed that 92.7% rated the involvement of teaching staff in the process of making managerial and strategic decisions on the management of the EP as "very good and good".

According to experts, for unambiguous guidelines for the development of the university and its programs, it is necessary to bring the development vision in line with its place in the university rankings. The members of the EEC included this recommendation in the section of the report "Overview of recommendations on the development of the organization of education".

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering" and 6B04102 "Mathematical Economics and Data Analysis"

- The University actively develops a culture of quality assurance, which is evidenced by participation in external evaluation procedures, maintenance and development of the quality management system and its integration with ESG standards and principles, development of KPI for teaching staff and social GPI for students.

- The level of development of the quality management system of the university, the degree of documentation of processes provides a clear definition of those responsible for business processes within the EP, the distribution of staff duties, and the delimitation of the functions of collegial bodies.

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering"

- Guideline EP 6B07304 "Geospatial Digital Engineering" provides a high degree of open accessibility for students, teaching staff, employers, government agencies in their field.

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- Until December 2023, the university management should ensure the development of a common procedure for the formation, revision and monitoring of the EP development plan.

- In 2024, the management of the EP will update the EP development plans and ensure their individuality and uniqueness.

- When updating the Program Development Plans in 2024, the management of the OP will ensure that program risks are identified and managed.

VEK recommendations for EP 6V04102 "Mathematical Economics and Data Analysis"

- The leadership of the EP in the Program Development Plan should include the effectiveness of the implementation of the recommendations of the EEC based on the results of accreditations (2018 and 2023) and measures to improve programs based on the recommendations.

Conclusions of the EEC according to the criteria:

According to the standard "Management of the educational program" OP 6B04102 "Mathematical Economics and Data Analysis" disclosed 17 criteria, of which 2 have strong positions, 12 have satisfactory positions, 3 - suggest improvement.

According to the standard "Management of the educational program" 6B07304 "Geospatial Digital Engineering" disclosed 17 criteria, of which 3 have strong positions, 12 have satisfactory positions, 2 suggest improvement.

6.2. Information Management and Reporting Standard

✓ The OO must demonstrate the existence of a system for collecting, analyzing and managing information based on the use of modern information and communication technologies and software tools and that it uses a variety of methods to collect and analyze information in the context of the EP.

✓ The management of the EP must demonstrate the existence of a mechanism for the systematic use of processed, adequate information to improve the internal quality assurance system.

✓ The management of the EP must demonstrate fact-based decision making.

✓ Within the framework of the EP, a system of regular reporting should be provided, reflecting all levels of the structure, including an assessment of the effectiveness and efficiency of the activities of departments and departments, scientific research.

✓ The PA must establish the frequency, forms and methods for assessing the management of the EP, the activities of collegial bodies and structural divisions, top management, and the implementation of scientific projects.

✓ The TOE must demonstrate the determination of the procedure for and ensuring the protection of information, including the identification of persons responsible for the reliability and timeliness of the analysis of information and the provision of data.

✓ An important factor is the availability of mechanisms for involving students, employees and teaching staff in the processes of collecting and analyzing information, as well as making decisions based on them.

✓ The management of the EP must demonstrate the existence of a mechanism for communication with students, employees and other interested parties, as well as mechanisms for resolving conflicts.

✓ The PA must demonstrate the existence of mechanisms for measuring the degree of satisfaction with the needs of teaching staff, staff and students within the framework of the EP.

✓ The PA should provide for an assessment of the effectiveness and efficiency of activities, including in the context of the EP.

✓ The information expected to be collected and analyzed within the framework of the EP should take into account:

- key performance indicators;
- the dynamics of the contingent of students in the context of forms and types;
- academic performance, student achievement and dropouts;
- satisfaction of students with the implementation of the EP and the quality of education at the university;
- availability of educational resources and support systems for students.

✓ The PA must confirm the implementation of the procedures for processing personal data of students, employees and teaching staff on the basis of their documented consent.

Evidence

KazNITU K.I. Satpaeva demonstrated the presence of the following systems for collecting, analyzing and managing information in the context of the EP:

1) information management within the official website of the university (<https://satbayev.university>);

2) management of educational and methodological information within the educational portals HeRo Study Space (<https://satbayev.hero.study/>) and LMS Polytechnonline (<https://polytechnonline.kz/>);

- 3) electronic hostel automation system
 "Dormitory"(<https://dormitory.satbayev.university/>);
 4) HR accounting system (<http://hr.satbayev.university/>);
 5) electronic document management Salem Office (<https://salemoffice.kz/>);
 6) Microsoft Office 365 software product (<https://www.office.com/>).
 7) official pages of the university in social networks for dissemination of information to interested parties: [instagram](#), [YouTube](#), [TikTok](#).

On the website of KazNITU K.I. Satpaev posted [set of three-level system of normative documentation](#), which significantly increases the transparency of the management system.

The main information flows of the university are: educational portal HeRo Study Space <https://satbayev.hero.study/> (since 2023, the university is abandoning this platform and switching to its own); distance education portal <https://polytechonline.kz/>; also Microsoft 365 platform; "Anti-plagiarism system" <http://strikeplagiarism.com/en/>, in which students' graduation papers are mandatory checked for uniqueness; a webinar that allows you to conduct online lectures; placement of scientific articles of teaching staff and scientists of KazNITU and others.

At the moment, on the basis of KazNITU K.I. Satpaev, a model of a digital university is being developed as part of a national pilot project. This is a project aimed at creating a unified digital ecosystem of higher education in the country, which will reduce financial costs for the access of a broader mass of students to quality education, reduce the burden on infrastructure, and increase the productivity of scientists and teachers. Such a digital infrastructure will be formed on the basis of Satbayev University, which will provide access to it to all Kazakhstani universities, which will combine the intellectual and material resources of the country and mutually strengthen them.

Assessment of the management of accredited programs, assessment of the graduating department as a structural unit of the university, is carried out twice a year in accordance with [DP KazNITU 801. Internal audit](#). Certified employees and teaching staff of the University who have been trained in the preparation of internal auditors of the MS are involved in the internal audit.

The university provides a system of regular reporting at all levels of the information management structure. At the end of the academic year (before June 1 of the current academic year), the management of the EP submits reports on the internal audit of the QMS. The collection, control and analysis of reports is carried out by the corporate development department. The procedure and criteria for conducting an analysis of activities are established in a documented procedure [DP KazNITU 502. Management analysis](#).

The protection of information, the responsibility of persons, the procedures for analyzing and granting access are regulated by the approved internal [Information security policy](#). The policy provides for the adoption of the necessary measures in order to protect information assets as material values of the university from accidental or deliberate modification, disclosure or destruction, as well as to maintain the confidentiality, integrity and availability of information, to ensure the processes of information interaction with customers and partners.

Access to information in closed databases is granted to officials with access to information processing through mandatory authorization. Teachers, students and advisers have personal accounts, access to which is carried out by login and password.

Each employee, upon employment, along with personal documents, provides HR with a signed consent to the collection and processing of personal data in the form [F KazNITU 601-22. Consent to data processing](#), as well as to protect their personal data in ways that do not contradict the legislation of the Republic of Kazakhstan.

For performance evaluation From September 2023, the teaching staff will introduce a KPI system. Teachers confirm their active participation in the development of the main criteria and provisions of this assessment.

Students, teachers and stakeholders are involved in the processes of collecting and analyzing information through questionnaires, interviews, and functioning SU Solutions mobile application and decision-making based on them during meetings of collegiate bodies. For the preparation of internal reports and its analysis, methods of structural analysis and quantitative methods of descriptive statistics are used, which was demonstrated by the university on the example of continuous analysis of the distribution curve of exam results and elimination of deviations.

The university has developed and operates [DP KazNITU 714. Questionnaire. Customer Satisfaction Assessment](#), which reflects the rules, forms of activities to monitor customer satisfaction (feedback). Periodicity at least once a year. Questionnaires used to survey students: "Student satisfaction with the university", "Teaching staff satisfaction with the university", "Teaching staff through the eyes of students", "Students' satisfaction with the quality of teaching disciplines", "Employer satisfaction with the quality of training of SU graduates". The results of the surveys are presented in the form of a consolidated Report on the assessment of the quality of education and the level of satisfaction of SU consumers. In 2022, according to the report, 95% of students are satisfied with the quality of education, 89% with the level of technical equipment, and 87% with the work of support services. During meetings with the target groups, it was noted that students are familiar with the results of the evaluation of teachers,

The collected and analyzed information covers the key performance indicators of the EP, the dynamics of the contingent of students and their level of performance, taking into account the satisfaction of students with the quality of the EP implementation, the availability of training resources, the demand for EP graduates in the labor market and their career growth; the effectiveness of teaching, monitoring indicators of the department. All information regarding the dynamics of the contingent of students in the context of forms and types of training, as well as the level of progress, achievements and deductions of students are displayed in the automated workplaces of employees.

Communication with students, employees and other stakeholders includes interpersonal communications: "student-teacher", "student-student", "student-group", "teacher-teacher" in the educational process, in classrooms, through electronic document management, corporate mail, Microsoft Teams, Microsoft 365, social network Instagram. Communication is also carried out through exhibitions, presentations, seminars, conferences, meetings, etc.

The official website of the university contains the contact details of the departments, operates [rector's blog](#). In the Microsoft Teams application, Outlook corporate mail contains the email addresses of university employees and students. Each student's page has a "Feedback" section where the student can suggest improvement actions, ask a question, etc.

Analytical part

An analysis of the activities of accredited programs in accordance with the criteria of the standard "Information Management and Reporting" allows us to draw the following conclusions.

KazNITU K.I. Satpaeva has a leading position in the field of information technology. At the same time, students noted some difficulties in the technological support of the educational process associated with the introduction of new platforms. The information collected and analyzed by the university takes into account the availability of educational resources and support systems for students.

The university demonstrated to EEC experts the effective use of statistical methods for managing activities and educational programs.

The University conducts a systematic measurement of the satisfaction and needs of stakeholders. At the same time, the management of the university and the EP needs to ensure that teachers and students are informed about the results of all types of surveys.

A survey of students showed that satisfaction:

- informing students about courses, educational programs and academic degrees: fully satisfied and partially satisfied - 84.9%;
- informing the requirements in order to successfully complete this specialty: fully satisfied and partially satisfied - 87.1%.

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering"

- Communications with students, employees and other stakeholders, including conflict resolution, are built on the basis of effective mechanisms: the SU Solutions mobile application, regular meetings with the university administration and EPs, and the well-organized work of advisors.

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- Ensure that teachers and staff are informed on a regular basis about the results of all surveys conducted at the university.

Conclusions of the EEC according to the criteria:

According to the standard "Management of the educational program" OP 6B04102 "Mathematical Economics and Data Analysis" and 6B07304 "Geospatial Digital Engineering" disclosed 17 criteria, of which 1 has a strong position, 16 have a satisfactory position.

6.3. Standard "Development and approval of the educational program"

- ✓ *The TOE shall define and document the procedures for the development of EPs and their approval at the institutional level.*
- ✓ *The management of the EP must ensure that the content of the EP complies with the established goals, including the intended learning outcomes.*
- ✓ *The management of the EP must demonstrate the existence of mechanisms for reviewing the content and structure of the EP, taking into account changes in the labor market, the requirements of employers and the social demand of society.*
- ✓ *The management of the EP should ensure the availability of developed models of the EP graduate that describe the learning outcomes and personal qualities.*
- ✓ *The management of the EP must demonstrate the conduct of external reviews of the content of the EP and the planned results of its implementation.*
- ✓ *The qualification awarded upon completion of the EP must be clearly defined and correspond to a certain level of the NSC and QF-EHEA.*
- ✓ *The management of the EP should determine the influence of disciplines and professional practices on the formation of learning outcomes.*
- ✓ *An important factor is the possibility of preparing students for professional certification.*
- ✓ *The management of the EP must provide evidence of the participation of students, teaching staff and other interested parties in the development of the EP, ensuring its quality.*
- ✓ *The management of the EP should ensure that the content of the academic disciplines and the planned results correspond to the level of education (bachelor's, master's, doctoral studies).*
- ✓ *The structure of the EP should provide for various types of activities that ensure the achievement of the planned learning outcomes by students.*
- ✓ *An important factor is the correspondence between the content of the EP and the learning outcomes of the EP implemented by organizations of higher and (or) postgraduate education in the EHEA.*

Evidence

The development and approval of educational programs are regulated [IP 029-03-02.1.01-2022 Regulation on the development of EP](#), approved by the RS of 04/28/2022, protocol No. 3. The university has also developed [Graduate frame model](#), approved by the decision of the Board of NJSC "KazNITU K.I. Satpaev". EEC experts note the absence of logical links between these two documents.

Updated [version of the educational program 6B07304 "Geospatial Digital Engineering"](#) developed by the Academic Committee for the direction and approved at the meeting of the Academic Council of KazNITU K.I. Satpayev on April 28, 2022, protocol No. 3. At the moment, senior courses are also conducted according to the program approved in 2021.

In 2023, the graduating department of mine surveying and geodesy developed a detailed [model of a graduate in EP 6B07304 "Geospatial Digital Engineering"](#) containing relevant competencies.

OP 6B07304 Geospatial Digital Engineering is aimed at developing the competencies of graduates in the use of modern IT technologies in solving the main tasks in the field of land management and cadastre. The program also aims to develop entrepreneurial, research and management competencies; development of language training, provision of interdisciplinary links.

The structure of EP 6B07304 Geospatial Digital Engineering consists of cycles: general education disciplines (GED), consisting of 5 modules, the number of ECTS credits is 56; basic disciplines (DB), consisting of 3 modules, ECTS credits 112 and 117, respectively; major disciplines (PD), consisting of 5 modules. The total number of ECTS credits for this module is 72 and 67, respectively. The total number of credits under the accumulative system is 240, of which 228 ECTS are theoretical training and 12 ECTS are final certification.

According to the curriculum 6B07304 Geospatial Digital Engineering, graduates of the EP are awarded the academic degree of bachelor of engineering and technology. Students who successfully complete the courses have the opportunity to receive the Leica Geosystems Kazakhstan certificate. Negotiations were held and an agreement was concluded with NEBOSH regarding the receipt of the International Certificate in Occupational Health and Safety (IGC). To date, negotiations are underway on a joint program with MIIGAİK (Moscow) and Baku State University (BSU) (Baku).

The demand for the program is confirmed by the contingent of 667 students, of which 649 (97%) study on a grant.

[Educational program EP 6B04102 "Mathematical economics and data analysis"](#), presented to the experts, developed and approved at a meeting of the Educational and Methodological Council KazNITU K.I. Satpayev dated December 19, 2018, protocol No. 3. No changes have been made to the program since its approval in 2018.

OP 6B04102 Mathematical Economics and Data Analysis was developed by analogy with the program of the London School of Economics at the University of London. Its uniqueness lies in its interdisciplinary content at the intersection of IT and economics. The program is aimed at the formation of knowledge in the field of mathematics and statistics, the development of competencies in the use of modern software in solving economic problems, the development of language training. Training is conducted in English. The contingent is 157 people.

The graduate model for this program is presented to experts in the form of a description of skills and abilities, is not posted on the website of the university and is not included in the educational program. The learning outcomes are presented in the annex to the self-assessment report, but are not contained in the educational program. At the same time, experts confirm that the program includes disciplines that provide high mathematical training (Algebra I, II, Further Linear Algebra I, II, Differential and Integral Calculus I, II, Further Differential and Integral Calculus, Econometrics I, II, etc. .) and the formation of skills in the field of IT (Algorithms and data structures, the Python language in scientific activities, the R language in statistical analysis tasks, etc.).

According to [curriculum EP 6B04102 Mathematical economics and data analysis](#), developed for 2022-2023 and approved by the Chairman of the Board - Rector, graduates of the EP are awarded the academic degree of Bachelor of Economics and Business. There are no opportunities for professional certification for students in this program. The experts were also not

provided with facts confirming the planned processes for the development of joint or double-degree programs, although the implementation of the program in English quite contributes to this.

Learning outcomes for accredited programs are formed at the level of the entire program and at the level of individual modules or academic discipline. A special place is given to all types of practices that form the required learning outcomes.

The efficiency and quality results of accredited EPs are confirmed by the demand for specialists in the labor market.

Analytical part

Analysis of accredited EPs according to this standard allows us to draw the following conclusions.

The university has documented procedures for the development, coordination and approval of educational programs. Programs are developed by collegiate bodies - academic committees.

At the same time, experts note a different level of updating of the presented accredited programs.

So, OP 6B07304 Geospatial Digital Engineering is distinguished by annual content updates, updates and consistency at all levels of learning outcomes. Leading experts in the field of land management are involved in the development of programs.

According to EP 6B04102 "Mathematical Economics and Data Analysis", the graduate model needs to be updated in accordance with the internal requirements of the university.

From the previous accreditation procedure, the question remains of creating conditions for professional certification of students of EP 6B04102 "Mathematical Economics and Data Analysis" and the development of a joint or double-degree program. Due to the fact that the program was developed similar to the program of the London School of Economics, University of London and implemented in English, it has a good potential for internationalization.

Questioning of students conducted during the visit of the EEC IAAR showed that 87.7% of students were completely or partially satisfied with the quality of the educational program. 77.7% of students agreed that the course content was well structured.

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering"

- The uniqueness of EP 6B07304 "Geospatial Digital Engineering" lies in its interdisciplinary content at the intersection of knowledge in the field of land management and IT technologies, the implementation of the program is partially in English. The strong position of the program in the regional market is confirmed by the size of the contingent (currently 667 students, of which 649 (97%) are grantees), as well as feedback from employers.

VEK recommendations for EP 6V04102 "Mathematical Economics and Data Analysis"

- Until September 2023, the management of the EP should ensure the revision and updating of the graduate model.

- The leadership of the EP in 2024 and beyond on an ongoing basis to provide the opportunity to prepare students for professional certification.

- Until 2027, ensure the development and implementation of a joint (s) and / or two-degree EP with foreign universities.

Conclusions of the EEC according to the criteria:

According to the standard "Development and approval of the educational program" OP

6B04102 "Mathematical Economics and Data Analysis" disclosed 12 criteria, out of 9 they have satisfactory positions, 3 - suggest improvement.

According to the standard "Development and approval of the educational program" 6B07304 "Geospatial Digital Engineering" disclosed 12 criteria, of which 1 has a strong position, 11 have a satisfactory position.

6.4. Standard "Continuous monitoring and periodic evaluation of educational programs"

✓ The PA should determine the mechanisms for monitoring and periodically evaluating the EP to ensure the achievement of the goal and meeting the needs of students, society, and show the focus of the mechanisms on the continuous improvement of the EP.

✓ Monitoring and periodic evaluation of the EP should include:

- the content of the program in the light of the latest achievements of science in a particular discipline to ensure the relevance of the discipline taught;
- changes in the needs of society and the professional environment;
- workload, performance and graduation of students;
- the effectiveness of student assessment procedures;
- expectations, needs and satisfaction of students with EP training;
- educational environment and support services, and their compliance with the objectives of the EP.

✓ The management of the EP must demonstrate a systematic approach in monitoring and periodically assessing the quality of the EP.

✓ The OO, the management of the EP should determine a mechanism for informing all interested parties about any planned or taken actions in relation to the EP.

✓ All changes made to the OP must be published.

Evidence

Monitoring and evaluation of accredited programs of KazNITU K.I. Satpayev is carried out in accordance with the following internal regulations:

- [Regulations on the Commission of intrauniversity control](#)
- [Regulations on the Academic Planning Committee](#)
- [Regulations on the development of educational programs](#)
- [Regulations on the Academic Committee for Educational Programs](#)
- [Satbayev University Quality Manual](#)
- [DP KazNITU 801. Internal audit](#)
- [DP KazNITU 502. Management analysis](#)

The assessment of the quality of the educational program by the main stakeholders is carried out in accordance with the scheme for monitoring the implementation of the EP, presented to the experts. The indicators for monitoring the implementation of the EP are grouped into main blocks: block 1 - resource support for the EP (staffing, the state of educational documentation, educational and methodological support of the educational process); Block 2 - the contingent of the EP (the average score of the UNT and KTA, the safety of the contingent, the occupancy of groups, budgetary and commercial reception, student satisfaction, etc.); Block 3 - demand for EP (employment, retention of graduates, etc.).

The following mechanisms are used to evaluate the EP:

1) conducting a survey of students at the end of the semester "Satisfaction of students with the quality of teaching the discipline", "Satisfaction of employers with the quality of graduate training". The results of the survey are discussed at meetings of collegial bodies. The members of the commission were provided with a Report on the assessment of the quality of education and the level of consumer satisfaction S.U. The results of the survey "Satisfaction with the quality of teaching the discipline" are posted in the information system and are available to students;

2) examination of the EP by external experts. According to the accredited program, examinations are presented: Doctor PhD, Associate Professor, Department of Land Resources and

Cadastral of the Kazakh National Agrarian Research University A.N. Zhidikbaeva and Doctor of Technical Sciences, Professor of the Kyiv National University of Construction and Architecture R.V. Schultz; President of Leica Geosystems Kazakhstan LLP M.A. Kochetova;

3) examination of the EP in the ESUVO system;

4) analysis of students' progress. Analysis of learning outcomes for courses in the context of the EP, the efficiency and reliability of information for managing the quality of educational activities is ensured through the use of the educational portal "Hero study", which contains all information on the educational activities of students;

5) organization of mutual visits of teaching staff;

6) conducting internal audits.

The functioning of each of these mechanisms was confirmed by the participants of the task forces when meeting with the experts.

As noted in the previous standard, the OP's guidance 6B07304 "Geospatial Digital Engineering" on a systematic basis provides a revision of the structure and content, taking into account changes in the labor market, the requirements of employers and the social demand of society. For example, the program includes a new discipline "Using 3D modeling to solve geospatial data. The results of the research work "Improving the management of the technical and biological stage of reclamation of disturbed lands in open-cast mining" were introduced in the development of a syllabus for the discipline "Reclamation and protection of lands from erosion." Specific disciplines include the latest achievements of science:

- Mastering work with satellite positioning technologies, unmanned aerial vehicles and laser scanners to accompany cadastral work (discipline "Geodesic instrumentation").

- Fundamentals of automated preparation of the graphic part of design documents in the AutoCAD environment (discipline "Engineering and computer graphics")

- The use of modern technologies and software products in solving land management and cadastral tasks, as well as the optimal choice of satellite imagery materials and their integration into GIS programs when creating cadastral maps (discipline "Digital mapping").

When holding International conferences, various stakeholders are necessarily invited to speak at plenary meetings and during the section, where issues on obtaining the necessary competencies by graduates of accredited educational programs are discussed. For example: During the International Scientific and Practical Conference dedicated to the 115th anniversary of Corresponding Member of the Academy of Sciences of the Kazakh SSR A.Zh.Mashanova and the 100th anniversary of the Academician of the Academy of Sciences of the Kazakh SSR Zh.S. , conducting geotechnical monitoring to ensure industrial safety”

The quality of EP 6V04102 "Mathematical Economics and Data Analysis" is also the object of monitoring and periodic evaluation, but experts note the need to update the educational program in accordance with the requirements [P 029-03-02.1.01-2022 Regulation on the development of EP.](#)

The main source for informing stakeholders about changes in programs is the official website of the university and the pages of graduating departments. The management of the EP places educational programs, models of graduates and curricula on the website. At the same time, information about changes in educational programs, available through different navigation, has a different volume and a different degree of relevance.

Yes, from the link <https://official.satbayev.university/en/educational-programmy> educational programs for the 2022-2023 academic year are posted in pdf format.

By links <https://official.satbayev.university/ru/geology-oil-gas-business/msg/educational-programmy-mdig> And <https://official.satbayev.university/ru/project-management/nauchno-obrazovatelnyy-tsentr-matematicheskoy-ekonomiki/obrazovatelnye-programmy-mime> some curricula and models of the EP are posted.

By links <https://satbayev.university.ru/specialties/geoprostranstvennaya-tsifrovaya-inzheneriya?professionSubjectId=17> And <https://satbayev.university.ru/specialties/matematicheskaya-ekonomika-i-analiz-dannykh-b?professionSubjectId=17> a short description of the programs is posted. At the same time, the description of EP 6B04102 "Mathematical Economics and Data Analysis" does not correspond to its name. Experts note that it would be more logical for external users to place all information about programs on one page or resource.

Analytical part

The analysis of accredited EPs according to this standard allowed us to draw the following conclusions.

KazNITU K.I. Satpaeva conducts monitoring and periodic evaluation of EP 6V04102 "Mathematical Economics and Data Analysis" and 6V07304 "Geospatial Digital Engineering" in order to meet the needs of stakeholders and social demands of society (monitoring of progress and achievements of students, external expertise, interaction with employers, labor market representatives and other organizations, consideration of possible risks and their solutions). 100% of the teaching staff were rated as "very good" and "good" to the extent that the educational program in terms of content and quality of implementation meets the expectations of the labor market and employers.

According to OP 6B07304 "Geospatial Digital Engineering", experts note a high degree of updating and compliance with modern achievements in science and technology.

OP 6B04102 "Mathematical Economics and Data Analysis", approved in 2018, requires updating the content, including learning outcomes.

Experts draw attention to the lack of a general procedure for evaluating educational programs, clear deadlines and criteria for monitoring the EP.

Basic information about educational programs is posted on different pages of the university's official website and requires unification to increase accessibility to users.

Strengths of OP 6B07304 "Geospatial Digital Engineering"

- OP 6B07304 "Geospatial Digital Engineering" is updated annually, which is confirmed by the approved educational programs for 2020-2021, 2021-2022, 2022-2023 academic years. The program of each year has an updated graduate model and learning outcomes, includes changes in the content of disciplines.

- The content of the disciplines is defined in the context of the latest achievements of science and technology in the field of land management (3D modeling, mastering work with satellite positioning technologies, unmanned aerial vehicles and laser scanners, the basics of automated preparation of the graphic part of design documents, the use of modern technologies and software products in solving land management and cadastral tasks, optimal selection of satellite imagery materials and their integration into GIS programs when creating cadastral maps, etc.). The content of the programs includes the results of research work of teachers.

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- Until the beginning of 2024, the university management should ensure the development of a common procedure that regulates the frequency, forms and methods for assessing the EP.

- By July 1, 2023, update the description of educational programs on the official website of the university in the section Applicants / Undergraduate / Educational programs, supplement the description with links to the content of the programs.

– By the end of 2023, review and unify the placement of information about the educational programs of the university: create a section/website/page for each educational program with a full description of the program, content, curricula, characteristics of program changes, etc.

WEC Recommendations for 6B04102 "Mathematical Economics and Data Analysis"

– Until September 2023, the management of the EP should ensure the revision of the structure and content of the EP in accordance with the approved Regulations on the development of educational programs, taking into account changes in the labor market, the requirements of employers and the social demand of society.

Conclusions of the EEC according to the criteria:

According to the standard "Continuous monitoring and periodic evaluation of educational programs"OP 6B04102 "Mathematical Economics and Data Analysis" disclosed 10 criteria, of which 9 have satisfactory positions, 1 suggests improvement.

According to the standard "Continuous monitoring and periodic evaluation of educational programs"6B07304 "Geospatial Digital Engineering" disclosed 10 criteria, of which 3 have a strong position, 6 have a satisfactory position, 1 suggests improvement.

6.5. Student-Centered Learning, Teaching and Assessment Standard

✓ *The management of the EP should ensure respect and attention to the various groups of students and their needs, provide them with flexible learning paths.*

✓ *The management of the EP should provide for the use of various forms and methods of teaching and learning.*

✓ *An important factor is the presence of own research in the field of teaching methods of academic disciplines of the EP.*

✓ *The management of the EP should demonstrate the existence of feedback mechanisms on the use of various teaching methods and the assessment of learning outcomes.*

✓ *The management of the EP should demonstrate the existence of mechanisms to support the autonomy of students with simultaneous guidance and assistance from the teacher.*

✓ *The management of the EP must demonstrate the existence of a procedure for responding to complaints from students.*

✓ *The OO must ensure the consistency, transparency and objectivity of the mechanism for evaluating learning outcomes for each SP, including appeal.*

✓ *The PA must ensure that the procedures for assessing the learning outcomes of students of the EP correspond to the planned results and goals of the program, publishing the criteria and assessment methods in advance.*

✓ *The PA should define the mechanisms for ensuring the achievement of learning outcomes by each EP graduate and ensure the completeness of their formation.*

✓ *Assessors should be proficient in modern methods of evaluating learning outcomes and regularly improve their skills in this area.*

Evidence

EEC experts confirm that the management of accredited programs ensures respect and attention to various groups of students and their needs, provides them with flexible learning paths and creates conditions for successful personal and professional self-realization based on the use of various teaching methods and technologies.

Student-centered education at KazNITU K.I. Satpayev is regulated by the following regulatory documents: "[Academic Policy](#)", "[Rules of credit technology of education at KazNRTU named after K.I. Satpayev \(master's degree\)](#)", "[Code of Academic Integrity NAO KazNITU named after K.I. Satpaev](#)", "[Regulations on the final certification \(Undergraduate Thesis\)](#)", "[Regulations on the organization and conduct of the examination session](#)".

Education under accredited programs is organized according to credit technology and ensures the formation of an individual learning path, which is confirmed by the individual plans

of students. Education is technologically supported by the educational portal Hero Study and LMS Polytechnonline.

Evidence of attention to the needs of students are the following facts: the formation of study groups of students according to the languages of instruction: Kazakh, English, Russian; providing opportunities for offline learning; availability of video lectures and educational materials; developing a culture of academic integrity; creating conditions for students with disabilities; creation of conditions for the formation of an individual trajectory; creation of comfortable space in educational buildings. All educational and methodological documentation is compiled in three languages of instruction (Kazakh, Russian, English). The university operates [Regulation on integrated \(inclusive\) education](#) and [The order of stay of foreign students in NJSC KazNITU named after K.I.Satpayev](#).

Teaching in accredited programs is based on the use of various modern technologies and teaching methods. During the targeted meeting, the students confirmed the active use of project-based learning, case studies, field studies (conferences, exhibitions and other events), the use of individual tasks by teachers. To organize self-study and develop research skills for students, the resources of electronic library systems are available: SU, Clarivate Analytics (Web of Science), ELSEVIER, SCOPUS, etc.

When developing syllabuses, the achievements of world science and practice are taken into account. For example, the content of practical classes in the discipline "Soil Science" OP 6B07304 "Geospatial Digital Engineering" considers the results of research by foreign scientists published in journals included in the Scopus database with an impact factor Q1: the article "Spatiotemporal multi-index analysis of desertification in dry Afromontane forests of northern Ethiopia by scientist Lee Woo-Kyun with H-Index 27 published in Environment, Development and Sustainability (DOI: 10.1007/s10668-020-00587-3) in 2021; also the article "Application of geostatistical analysis and random forest for source analysis and human health risk assessment of potentially toxic elements (PTEs) in arable land soil" by Zhou Yong scientist with H-Index 13,

To form the educational trajectory of students, advisors are appointed ([Advisory Regulations 2022](#)). The work of advisors was positively assessed by the students during the interview.

As part of the implementation of EP 6B04102 "Mathematical Economics and Data Analysis", our own research is being carried out in the field of methods of teaching academic disciplines. So, Professor Khrushchev S.V. developed a methodology for creating a digital workplace of a teacher in the Microsoft 365 Education A3/A5 system. The technique is presented in the corresponding book and is available on the Internet. [MyBooks - OneDrive \(sharepoint.com\)](#). In addition, recommendations have been developed for the use of the ChatGPT bot by students [A solution of the ChatGPT problem - Microsoft 365 Education \(sergeykhushchev.com\)](#), recommendations for automatic digitization of students' written work for evaluation in the system [Delivery of students' paper works to Class Notebooks - Microsoft 365 Education \(sergeykhushchev.com\)](#), recommendations for using proctoring in online teaching [Exams - Microsoft 365 Education \(sergeykhushchev.com\)](#), best practices for maintaining grade journals in Microsoft Teams [Grade Book - Microsoft 365 Education \(sergeykhushchev.com\)](#)

The assessment of learning outcomes is carried out according to international practice with an alphabetic system with a digital equivalent (positive grades, in descending order, from "A" to "D", and "unsatisfactory" - "FX", "F"), transfer from course to course is carried out according to the results of the session and the results of the summer trimester, taking into account the transfer score (GPA). The compliance of the procedures for assessing the level of knowledge of students with the planned learning outcomes and the goals of the program is ensured in accordance with [DP KazNITU 706. "Evaluation of knowledge and liquidation of debt", Regulations on the final](#)

[certification \(Undergraduate Thesis\), Regulations on the organization and conduct of the examination session.](#)

The transparency of the knowledge assessment procedure is ensured by posting on the portal the assessments entered by the teacher in electronic journals of progress and attendance of students. Proctors are appointed for the period of final certification. There is an appeal procedure for all types of control.

The main mechanism for responding to student complaints is the SU SOLUTIONS mobile application, the use of which reaches its peak of activity during examination sessions. The application enables the administration of programs to quickly respond to emerging problems. The effectiveness of using the application was confirmed by feedback from teachers, students and employees during meetings with target groups.

In addition, surveillance cameras have been installed in the educational buildings and on the territory, the rector's blog has been opened on the institute's website, which any student of the institute can access. The management of the EP creates conditions for the prevention and prevention of possible conflicts, abuses on the part of employees and teachers and the creation of a strong social and legal protection of students.

Analytical part

The management of the university and accredited EPs fully implements a student-centered approach to learning, teaching and assessing the achievements of students.

In interviews with teachers and students, it was noted the use of various forms and methods of teaching and learning, including methods of active learning of students, teaching uses personality- and practice-oriented, activity-based approaches, strategies for problem-based, dialogue-communicative learning.

For each accredited educational program, the presence of a consistent, transparent and objective mechanism for assessing learning outcomes, including an appeal, was revealed.

In the field of teaching methods of individual disciplines of the teaching staff OP 6B04102 "Mathematical Economics and Data Analysis" conducts its own research, which follows from their educational and methodological developments. The Guideline OP 6B07304 "Geospatial Digital Engineering" needs to ensure the development of its own methods of teaching academic disciplines and their application in the educational process.

As a strength of accredited programs, one can single out the procedures for responding to complaints from students.

Questioning of students showed that 56% were completely satisfied with the speed of response to feedback from teachers on the educational process, 33.1% were partially satisfied; 58% are fully satisfied with the quality of examination materials (tests and examination questions, etc.), 31.7% are partially satisfied; objective assessment of knowledge, skills and other educational achievements 56.6% are completely satisfied, 30.9% are partially satisfied; 59.1% are completely satisfied with teaching methods, 29.1% are partially satisfied.

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering" and 6B04102 "Mathematical Economics and Data Analysis"

- An effective mechanism for responding to student complaints is the SU SOLUTIONS mobile application.

VEK recommendations for OP 6V07304 "Geospatial digital engineering"

- Ensure that own research of teaching staff in the field of teaching methods of academic disciplines in the context of student-centered learning.

Conclusions of the EEC according to the criteria:

According to the standard "Student-Centered Learning, Teaching and Assessment" OP 6B04102 "Mathematical Economics and Data Analysis" disclosed 10 criteria, of which 1 has a strong position, 9 - satisfactory positions.

According to the standard "Student-Centered Learning, Teaching and Assessment" 6B07304 "Geospatial Digital Engineering" disclosed 10 criteria, of which 1 has a strong position, 8 have a satisfactory position, 1 suggests improvement.

6.6. Standard "Students"

✓ The PA must demonstrate the existence of a policy for the formation of a contingent of students in the context of the EP, ensure transparency and publicity of its procedures governing the life cycle of students (from admission to completion).

✓ The management of the EP should determine the procedure for the formation of a contingent of students based on:

- minimum requirements for applicants;
- the maximum size of the group when conducting seminars, practical, laboratory and studio classes;
- predicting the number of government grants;
- analysis of available material, technical, information resources, human resources;
- analysis of potential social conditions for students, incl. provision of places in the hostel.

✓ The management of the EP must demonstrate its readiness to conduct special adaptation and support programs for newly enrolled and foreign students.

✓ The PA must demonstrate the compliance of its actions with the Lisbon Recognition Convention, the existence of a mechanism for recognizing the results of academic mobility of students, as well as the results of additional, formal and non-formal education.

✓ The PA should cooperate with other educational organizations and national centers of the "European Network of National Information Centers for Academic Recognition and Mobility / National Academic Recognition Information Centers" ENIC / NARIC in order to ensure comparable recognition of qualifications.

✓ The PA should provide an opportunity for external and internal mobility of students of the EP, as well as readiness to assist them in obtaining external grants for training.

✓ The management of the EP must demonstrate readiness to provide students with internship places, promote the employment of graduates, and maintain contact with them.

✓ The PA should provide for the possibility of providing EP graduates with documents confirming the qualifications received, including the learning outcomes achieved, as well as the context, content and status of the education received and evidence of its completion.

Evidence

Training in accredited EPs is carried out on the basis of a state order (grant) and on a paid basis. Mathematics and geography are the main disciplines for admission for high school graduates of the full form of education.

The policy of forming the contingent of KazNITU K.I. Satpaev is determined by the following regulatory documents:

"Academic Policy"

Code of Academic Integrity NAO KazNITU named after K.I. Satpaev

Regulations on Pre-Doctoral NAO KazNTU named after K.I. Satpaev

Regulations on Pre-Masters NAO KazNTU named after K.I. Satpaeva

Regulations on nominal scholarship named after Adilov Zh.M. T.K. Basenova

Rules for admission to study at the magistracy and doctoral studies of the Kazakh National Research Technical University K.I. Satpaeva (Satbayev University)

Rules for admission to study under the undergraduate programs of NAO KazNITU named after K.I. Satpaeva for 2021-2022 academic year

Regulations on the final certification (Undergraduate Thesis)

Regulations on the organization and conduct of the examination session

Rules of credit technology of education at KazNRTU named after K.I. Satpayev (bachelor's

[degree\)](#)

[Code of Academic Integrity NAO KazNITU named after K.I. Satpaev](#)

[Regulations on the provision of grants and discounts for educational services and material incentives \(incentives\) for students of NJSC "KazNRTU named after K.I. Satpayev"](#)

[Rules for the distribution of places in dormitories of NAO KazNITU named after K.I. Satpaev](#)

[Rules for living in dormitories of NAO KazNITU named after. K.I. Satpaeva](#)

The above documents regulate the entire life cycle of students. The Rules of credit technology describe the process of studying at the university from the student's admission to the university to its graduation (toevaluation criteria and conditions for mastering the educational program, transfer from course to course, credit transfer procedure, etc.);

The tables below show the contingent and admission of students for accredited programs. Experts note that a fairly large number of applicants enter the EP 6B07304-Geospatial Digital Engineering.

Reception of students

OP	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
6B07304-Geospatial digital engineering	12	82	217	281	196
6B04102 Mathematical economics and data analysis	61	36	41	58	22

For the purpose of social adaptation of students of the first year of study, a number of extracurricular events are held at the very beginning, such as the "Orientation Week", "Student Communities Fair", in which all student organizations of the university take part, and the organizers are senior student activists.

The range of services provided to foreign students includes assistance and support in adapting to a new educational and socio-cultural environment. In addition to the traditional guardianship of the deans, international students are under closer supervision of group advisors and staff of the International Relations Office.

For new foreign students, KazNITU conducts a primary adaptation program "Orientation Month" by analogy with similar programs in foreign universities (Orientation Week, Welcome Week, Welcome Days).

According to OP 6B07304-Geospatial digital engineering, there is an increase in the contingent.

Contingent of students 6B07304-Geospatial figuresnew engineering

Form of study	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Grant	13	80	277	491	649
Treaty	7	9	16	18	18
Total	20	89	293	509	667

Contingent of students 6B04102 "Mathematical economics and data analysis"

2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
40	36	51	58	54

Issuance of supplements to the diploma of the awarded degree and / or qualification takes place in accordance with [Regulations on the issuance of the Diploma Supplement of the European Credit Transfer and Accumulation System \(ECTS\)](#), [Regulations on the diploma of its own sample](#).

The university has developed and implemented in the context of educational work DP KazNRTU 715. Social support for students.

In accordance with [DP KazNITU 718 Academic mobility](#) a program of external and internal academic mobility of students is being implemented. At the moment, there are active agreements with the following foreign universities: Ufa State Oil Technical University, Ural State Agrarian University, National Research Technological University "MISiS", Moscow State Technical University named after N.E. Bauman, Tomsk Polytechnic University, St. Petersburg State Polytechnic University, Russian State University of Oil and Gas. I.M. Gubkina, AGH University of Science and Technology, Warsaw University of Technology, Silesian University of Technology, Lublin University of Technology, Anhalt University of Applied Sciences, Suleyman Demirel University, Sapienza University in Rome,

Since 2019, 11 students of EP 6B07304-Geospatial Digital Engineering (Poland, South Korea) have taken part in external academic mobility programs. According to OP 6B04102 Mathematical Economics and Data Analysis - one student studied at the Czestochowa University of Technology (Poland).

"KA" Merken district of Zhambyl region) and companies (LLP "Leica Geosystems Kazakhstan", LLP Scientific and production company "Interin", LLP Scientific and production company "AlGeoRhythm", LLP "ALIF GROUP", LLP "BAZIS Construction", LLP "Metroproekt, etc.). During the conversation with representatives of the practice bases, a high level of students' preparation, readiness for independent problem solving in the professional sphere was noted. A distinctive feature of the students of this program is the knowledge of modern technologies and modern tools in the field of land management and cadastre. During the conversation with representatives of the practice bases, a high level of students' preparation, readiness for independent problem solving in the professional sphere was noted. A distinctive feature of the students of this program is the knowledge of modern technologies and modern tools in the field of land management and cadastre. During the conversation with representatives of the practice bases, a high level of students' preparation, readiness for independent problem solving in the professional sphere was noted. A distinctive feature of the students of this program is the knowledge of modern technologies and modern tools in the field of land management and cadastre. The management of the EP maintains effective communication with the heads of the practice bases. 4th year students confirmed their planned employment upon completion of training at the practice bases.

The professional practice of students of OP 6B04102 Mathematical Economics and Data Analysis takes place on the basis of banks of the Republic of Kazakhstan, the Institute of Information Techniques and Technologies, Steps Artificial intelligence, Antal LLP, NCE Atamekenm and SPM of the Republic of Kazakhstan.

In general, the university has 460 agreements with partner companies, 65 of them with subsequent employment. Responsibility for organizing activities to promote the employment of graduates rests with [Career Center](#).

The Career Center, as well as the departments, carry out a number of activities for the employment of graduates in accordance with "[DP KazNITU 710. Employment of graduates](#)". Graduates' employment is monitored through social networks, through telecommunications networks, through graduate support programs by requesting twice a year (three and six months after graduation). The request is made both for the graduates of the current year and past years.

The development of Satbayev University students is realized through numerous public,

scientific, creative and sports associations, clubs and groups, bright student holidays, meaningful forums and conferences. The "Student Theater "Polytech" functions, the Committee for Youth Affairs is engaged in the promotion of national values, sports.

Analytical part

ManagementOPin fullleast demonstrated the existence of a student body formation policy and transparency.The procedures governing the life cycle of students (from admission to completion) are defined, approved, published ..

The university has developed and is implementing adaptation and support programs for newly enrolled and foreign students. A mechanism for recognizing the results of previous training and academic mobility has been implemented. The formation and implementation of an individual educational trajectory of a student is regulated by the normative and reference documentation of the university.

The strength is the volume of the contingent according to OP 6B07304 "Geospatial Digital Engineering". In addition, the program has a wide range of practice bases, which includes large government organizations. Employers of this program note the high level of training of graduates.

To receive professional assistance in making career decisions and finding a job while studying at a university or after graduation, a Career Center has been created, which acts as a key link between the university and employers, monitoring the employment of graduates, assists university graduates in planning and development career, as well as in establishing and maintaining communication with the university: constant communication with graduates is maintained through social networks, through telecommunications networks through alumni support programs.Over the past 3 years, employment in the OP was 100%.

The university provides opportunities for external and internal mobility of students, however, according to EP 6B04102 "Mathematical Economics and Data Analysis", this direction is not effective.

Based on the results of the meeting with the target groups, no evidence of the activities of the Alumni Association was given, at the same time, graduates confirm that the management of the accredited EPs constantly keeps in touch with them, involves them in the development and implementation of the OP.

The student survey showed that55.1% are fully satisfied with the availability of academic counseling, 30.9% are partially satisfied; 62% are fully satisfied with the availability of health care services, 26% are partially satisfied.

Strengths of OP 6B07304 "Geospatial Digital Engineering"

An effective enrollment policy ensures high acceptance rates (196 in 2022) and enrollment (667 in 2022) for OP 6B07304 Geospatial Digital Engineering. The share of students on a grant is 97%.

A wide range of practice bases consisting of large public and private companies. High interest of companies in cooperation with the department.

Representatives of employers note the high level of training of graduates of this program, including the level of competencies in the field of IT technologies.

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

The management of the EP should ensure the functioning of the Alumni Association and increase the proportion of graduates of accredited EPs in its composition. Justification in the analytical part.

The paragraph about the association not working is highlighted in blue. Removed other collegiate bodies.

By December 31, 2023 on the website [Satbayev University](#) in the “Alumni” section, provide links to more complete information about the Alumni Association (alumni database, interviews with outstanding alumni, discoveries and innovations proposed by them).

VEK recommendations for EP 6V04102 "Mathematical Economics and Data Analysis"

Provide an opportunity for external and internal academic mobility of at least one student in each academic year.

Conclusions of the EEC according to the criteria:

According to the standard "Students" OP 6B04102 "Mathematical Economics and Data Analysis" disclosed 12 criteria, of which 10 have satisfactory positions, 2 - suggest improvement.

According to the standard "Students" 6B07304 "Geospatial Digital Engineering" disclosed 12 criteria, of which 3 have a strong position, 8 are satisfactory, 1 suggests improvement.

6.7. Standard "Teaching Staff"

✓ The PA must have an objective and transparent personnel policy, including in the context of the EP, including recruitment, professional growth and development of personnel, ensuring the professional competence of the entire staff.

✓ The PA must demonstrate the compliance of the staff potential of the teaching staff with the specifics of the EP.

✓ The management of the EP must demonstrate awareness of responsibility for its employees and provide favorable working conditions for them.

✓ The management of the EP should demonstrate the change in the role of the teacher in connection with the transition to student-centered learning.

✓ The PA must determine the contribution of the teaching staff of the EP to the implementation of the development strategy of the PA, and other strategic documents.

✓ The PA should provide opportunities for career growth and professional development of the teaching staff of the EP.

✓ The management of the EP must demonstrate readiness to involve practitioners in the relevant sectors of the economy in teaching.

✓ The PA must demonstrate the motivation for the professional and personal development of EP teachers, including encouragement for the integration of scientific activity and education, the use of innovative teaching methods.

✓ An important factor is the readiness to develop academic mobility within the framework of the EP, to attract the best foreign and domestic teachers.

Evidence

The personnel policy of KazNITU named after K.I. Satpayev was developed in accordance with the document [Development strategy of the non-profit joint-stock company "KazNITU K.I. Satpayev" for 2022 - 2026](#),

The staff of the University is formed from highly qualified and competent employees with a fairly large experience in scientific, pedagogical and practical activities in accordance with the legislation of the Republic of Kazakhstan. The processes of recruitment and personnel management are regulated by documents: [Personnel policy of KazNRTU named after K.I. Satpayev](#), [Rules for the certification of the teaching staff of KazNRTU named after K.I. Satpaev](#), [Regulations on the certification of employees of NJSC KazNITU named after K.I. Satpaev](#)

The formation of the teaching staff is carried out on the basis of an analysis of the needs of the EP. The qualifications of teachers, their quantitative composition correspond to the areas of training and meet licensing requirements.

Qualitative and quantitative composition of teaching staff

Structural subdivision	Full-time teaching staff	Full-time teaching staff with a scientific degree	Percent Full-time teaching staff with a scientific degree	part-timers	PPP with production experience
Department of Management and Mathematical Economics	17	14	82%	2	4
Department of Mine Surveying and Geodesy	28	17	61%	9	13

The level of competence of teachers is confirmed by the effectiveness and quality of teaching, which is assessed at the university by conducting open training sessions, mutual visits to classes, as well as conducting a survey “Teacher through the eyes of a student”.

The selection of teachers-practitioners is carried out on the basis of qualification requirements, job descriptions and approved staffing, taking into account extensive experience in the relevant field of activity.

For the implementation of the accredited EP, persons with a professional education of the appropriate profile are involved, the level of qualification of which corresponds to the specifics of the EP. Professors, associate professors, senior lecturers, researchers or experienced specialists with at least 3 years of practical work experience in the profile are allowed to read lectures.

Ethical and academic standards in the activities of teaching staff are regulated by the following documents: [Academic policy of KazNITU K.I. Satpaev](#), [Code of Academic Integrity NAO KazNITU named after K.I. Satpaev](#), [Code of Corporate Ethics of NJSC KazNTU named after K.I. Satpayev](#).

Social support for employees is provided by the university management and the trade union committee of the university (financial assistance in the event of the birth of a child, marriage registration, death of an employee or close relatives of an employee, etc.).

Periodically, mandatory certification of production facilities, workplaces, advanced training of teaching staff is carried out to study new teaching methods and improve knowledge in the field of professional skills.

The department annually develops a program and a plan for improving the qualifications of the teaching staff, which takes place both at the expense of the institute and at its own expense. HR Service is guided in activities by: [DP KazNITU 602-2022 Staff development and training](#).

Statistics on advanced training courses

Academic year	Total PPP	Teaching staff who have completed advanced training courses in the direction of the department	Total PPP	Teaching staff who have completed advanced training courses in the direction of the department
---------------	-----------	--	-----------	--

Department of Mine Surveying and Geodesy			Department of Management and Mathematical Economics	
2018-2019	22	13	thirty	12
2019-2020	27	14	12	eleven
2020-2021	23	20	13	18
2021-2022	29	21	eleven	12
2022-2023	35	13	19	10

92.7% of the surveyed teachers rated the work to improve their qualifications as "excellent" and "good".

The results of continuous monitoring of the competence of the teaching staff (reports on the level of teaching) are regularly reviewed at meetings of the department and EMC, decisions are made to improve the effectiveness of teaching.

Among the teaching staff of OP 6V07304 "Geospatial Digital Engineering" are the following specialists, well-known in the scientific and production fields:

- Head of the Department, PhD Orynbasarova E.O. graduated from the Bolashak Master's program at the University of Nottingham, UK, specializing in Engineering Surveys and Geodesy, winner of the Young Scientist scholarship and the Best University Teacher.

- Associate Professor Zhakypbek Y. member of the Commission of the Republican Olympiad on Land Management at KazNU named after al-Farabi; member of the Discussion Council for the defense of a doctoral dissertation in the specialty "Land Management, Cadastre and Economics"; Chairman of the university expert commission "The best teacher of the university-2021"

- Doctor of Technical Sciences, Professor Nurpeisova M.B. in 2018 she became the owner of the title "Scientist-teacher of the year".

The transition to online learning for full-time students has expanded the possibility of academic mobility of teaching staff. The Department of Management and Mathematical Economics invited two foreign professors to the staff: 1) Khrushchev S.V. (Belarus) to conduct lectures and practical classes in the following disciplines: Algebra, Further Linear Algebra 1-2, Abstract Mathematics, Calculus. 2) Fodor Mate (Belgium) for lectures and practical classes in the following disciplines: microeconomics, macroeconomics, game theory, statistics.

The teaching staff is motivated to increase their publication activity, primarily in leading foreign publications with a high impact factor.

Thanks to the involvement of teachers of practitioners, students have the opportunity to acquire competencies related to professional activities.

Young teachers are selected from among university graduates, masters of science. In recent years, when recruiting, special attention is paid to undergraduates-excellent students in terms of involvement in scientific and pedagogical activities. The management of the EP provides young teachers with the opportunity to participate in master classes, scientific and methodological seminars, and lectures by leading professors.

Motivation of employees is carried out in accordance with [Regulations on motivation of employees of KazNITU for attracting sponsorship funds from subsoil users, Regulations on the remuneration of employees and students at NAO KazNRTU named after K.I. Satpaev for publications in rating \(peer-reviewed\) scientific journals.](#)

The provision of social support to employees of KazNITU is carried out on an ongoing basis, this is an annual paid labor leave, a health improvement allowance for labor leave, discounts on payment for students from among the children of KazNITU staff members and subsidiaries of the university in accordance with the collective agreement.

KazNITU implements the mechanisms of moral and material incentives for teaching staff: announcement of gratitude, awarding diplomas, payment of bonuses, recommendation for participation in the contest "The Best University Teacher".

For the period 2018-2022 academic year. processed and posted: more than 239,610 Digital Educational Resources (DERs); 887 video courses. Also, all teaching staff of the department work in the Microsoft Teams, Polytech online platform. To conduct online exams, new methods of online proctoring are used, including ChatGPT, which excludes the possibility of using ChatGPT.

According to OP 6B07304 - "Geospatial Digital Engineering" in all 43 disciplines there are educational and methodological complexes in digital form, which are available to students on a personal page in educational platforms [polytechonline](#), [HeRo Study Space](#), as well as in training teams in [Microsoft Teams](#).

Internal and external academic mobility is carried out through the International Relations Office and the HR service of Satbayev University. From 2019 to 2022, the selection of applicants for foreign academic mobility with the support of the Ministry of Education and Science of the Republic of Kazakhstan is carried out directly by an independent commission of the Ministry of Education and Science of the Republic of Kazakhstan. The transition to online learning for full-time students has expanded the opportunities for academic mobility of teaching staff.

In addition to scientific, educational activities, teaching staff participate in cultural development activities, for example, in all events held by the university, the teaching staff of the department takes an active part.

Analytical part

Management KazNITU K.I. Satpaev and accredited educational programs successfully implements personnel policy. The main principles and mechanisms for recruitment, professional growth and development are regulated by internal documentation and posted on the university website. The personnel formation policy is transparent and objective. Experts note the conditions created by the university for the promotion of young employees to leadership positions.

Hiring of teachers and heads of structural divisions is carried out on a competitive basis. The university is developing a new KPI assessment system for teaching staff with the active participation of teachers of different levels.

According to OP 6B07304 "Geospatial Digital Engineering", experts note a high percentage of practitioners involved in the educational process.

The risks for accredited EPs in terms of personnel potential are the lack of external mobility of teachers, the aging of personnel with academic degrees and titles. One of the ways to reduce these risks is active career guidance, an increase in educational grants, the formation of new learning trajectories that correspond to the labor market, advanced training of teaching staff in leading universities and educational centers of the Republic of Kazakhstan, admission to doctoral studies for teachers of the department in leading universities of the Republic of Kazakhstan, inclusion in the staff of young specialists who have completed their studies in the magistracy, the invitation of foreign scientists.

The teaching staff of the accredited EP actively establishes contacts with educational organizations, seminars of various levels are planned and systematically held together with the branches of the department.

The results of the survey conducted during the EEC visit showed that the teaching staff of the EP is assessed as "very good" and "good": the opportunities provided by the university for the development of teaching staff - 100%; encouragement of innovative activity of teaching staff - 95.1%. In general, on all questions of the questionnaire, the teaching staff gave a positive assessment of the university.

At the same time, at the meeting of the target group with experts, all teachers noted that the teaching staff was very busy with academic work. The volume of the classroom load does not

allow to fully engage in scientific work and professional development. Given the status of a research university, there may be a need to assess the teaching staff load.

Strengths of EP 6B07304 "Geospatial Digital Engineering" and 6B04102 "Mathematical Economics and Data Analysis"

missing

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- The university management should determine and implement tools and procedures for monitoring and evaluating the actual workload of teaching staff (surveys, analytical studies) with the adoption of corrective actions.

Conclusions of the EEC according to the criteria:

According to the standard "Teaching staff" OP 6V04102 "Mathematical Economics and Data Analysis" and OP 6V07304 "Geospatial Digital Engineering" disclosed 10 criteria, of which 10 have satisfactory positions.

6.8. Standard "Educational resources and student support systems"

✓ *The OO must guarantee a sufficient number of educational resources and student support services to ensure the achievement of the goal of the EP.*

✓ *The OO must demonstrate the sufficiency of material and technical resources and infrastructure, taking into account the needs of various groups of students in the context of the EP (adults, employed, foreign students, as well as students with disabilities).*

✓ *The management of the EP must demonstrate the existence of procedures for supporting various groups of students, including information and counseling.*

✓ *The EP management must demonstrate the compliance of information resources with the specifics of the EP, including:*

- *technological support for students and teaching staff (for example, online learning, modeling, databases, data analysis programs);*
- *library resources, including a fund of educational, methodical and scientific literature on general education, basic and major disciplines on paper and electronic media, periodicals, access to scientific databases;*
- *examination of the results of research, graduation works, dissertations for plagiarism;*
- *access to educational Internet resources;*
- *functioning of WI-FI on the territory of the educational organization.*

✓ *The OO demonstrates the planning of providing the EP with educational equipment and software similar to those used in the relevant sectors of the economy.*

Evidence

The university has 52 computer labs with 665 computers, of which 338 are high-performance graphics stations from a well-known premium brand. 3 reading rooms of the Scientific Library are equipped with 87 single-block computers with a 23" widescreen screen.

Purchased software licenses and distributions used in the world's largest industrial enterprises, such as: Autodesk products - AutoCAD, Civil 3D, 3DS Max, Revit, Fusion 360, Inventor, etc.; Microsoft M365 cloud products - Teams, SharePoint, OneDrive, Outlook, Word, Excel, etc.; Free access for all students and employees of Satbayev University to the main legislative base of the Republic of Kazakhstan IS "Paragraph" was organized.

Data+International company sponsored the Mine Surveying and Geodesy Department with 50 licensed places for ArcGIS software for 3 years, which includes ArcGIS desktop advanced, ArcGIS Server, Esri city engine advanced, ArcGIS online, ArcGIS enterprise.

To optimize the educational process, EP classes are held in classrooms using multimedia tools such as video projectors and interactive whiteboards, etc. Students and teaching staff of the department have access to the electronic catalog of the scientific library and to international databases of research results, teaching aids and materials (<http://e-lib.kazntu.kz/>).

In addition to 10 classrooms assigned to the Department of Mine Surveying and geodesy", the department has the opportunity to conduct practical classes at the training ground of the university and Leica Geosystems Kazakhstan. In accordance with the agreement between Leica Geosystems LLP, the teaching staff of the MD&G department and students of the EP "Geospatial Digital Engineering" are trained in the use of modern geodetic instruments, electronic total stations, laser scanners and software, uses the wide capabilities of the Fablab laboratory, which develop modern drones and unmanned aircrafts. The practice is carried out on the basis of the State Institute of Agricultural Aerial Photogeodetic Surveys (GISHAGI) of the Committee for Land Management of the Ministry of Agriculture of the Republic of Kazakhstan.

Analysis of the need for equipment is carried out and recorded at meetings of the department and the Academic Council of the Institute. Development of the material and technical base of the Department of Mine Surveying and geodesy", information support and infrastructure is carried out in accordance with the DP KazNITU 612 "Auditor fund and educational and laboratory base", DP KazNITU 603 "Infrastructure Management" and DP KazNITU 607 "Information Resource Management".

For technological support of students and teaching staff, the following systems of support, collection, analysis and information management have been introduced:

- information management within the official website of the university (<https://satbayev.university>);
- management of educational and methodological information within the educational portals HeRo Study Space and LMS Polytechonline;
- the automation system of the electronic hostel "Dormitory" (<https://dormitory.satbayev.university/>);
- HR accounting system (<http://hr.satbayev.university/>);
- electronic document management Salem Office (<https://salemoffice.kz/>);
- SU Solutions application of the Microsoft Office 365 software product.

The HeRo Study Space system provides academic calendar management, transparency and openness of business processes, support for all forms and types of education, coverage of all stages of the learning process from admission to graduation with the preparation of relevant documents for students.

The Polytech Online distance learning system includes multilingual services with a user-friendly interface and easy setup, contains multilingual courses of highly qualified SU teachers, available to students around the clock without limiting the number of views. This system has integration with such university services as HeRo Study Space, StrikePlagiarism anti-plagiarism, online proctoring with elements of artificial intelligence, electronic library, Microsoft Office 365 products. guide any emerging problems and ideas.

The university has 49 Wi-Fi access points. Of these, 4 points are in hostels and 45 points are on campus.

The unified system of library and information services in KazNITU is based on providing access for students and teaching staff to the information resources of the library through online catalogs, virtual services ("Clarivate Analytics" - Web of Science database; "Elsevier" - Scopus, ScienceDirect database), reading rooms, coworking centers etc. The general fund of the library is 1,625,548 copies as of January 1, 2022, including 369,832 copies in the state language. Regular information about the resources and services of the library has been established through various communication channels.

The scientific and innovative activity of the university is focused both on the fulfillment of orders from state organizations through grant and program-targeted financing, and on close interaction with production.

As part of providing young researchers with access to communicate with teachers and professors of EU universities, to organize international cooperation, modernize the scientific and educational process and improve the conditions for conducting research, the ACeSYRI Satbayev University coordinating group has been created, inviting young researchers to participate in seminars, master classes and conferences devoted to the issues of artificial intelligence, machine learning and deep neural networks. So, on the basis of the Department of Mine Surveying and Geodesy, 7 research projects are being implemented in 2022.

The laboratory base of the departments has modern equipment and licensed software products. So, students of EP 6B07304 "Geospatial Digital Engineering" gain skills in working with various geodetic instruments, such as total stations TS 1512 and total station SOUTH for measuring distances, elevations, horizontal and vertical angles; digital levels Sprinter and SAL24D for leveling, calculation of elevation difference; geodetic satellite GNSS-set of the Leica GS16 base with a built-in GSM modem, laser scanning systems GeoSight MINEi and Faro Focus designed for outdoor and indoor shooting when laying engineering networks, in industry; unmanned aerial vehicle "Boomerang" for measuring the shape and size of dangerous and inaccessible ground areas and Drone DJI-Phantom-4-Pro,

The student support system includes the work of advisors with students. Advisors inform the administration of the institute, public organizations about the interests, requests and mood of the students of the group. The role of advisors is especially important in building a student's individual educational trajectory.

An important measure to support students is that in case of illness, if the student is behind the current planned training system, additional consultations of the teaching staff are organized, or an opportunity is provided to study within the summer semester.

Analytical part

Satbayev University is a scientific and educational complex with a well-developed infrastructure for scientific and innovative research and training. At the moment, work is underway to transform the university into the largest research hub in the Central Asian region.

A visual inspection of the material and technical base of the EEC confirms the availability of educational resources, student support systems, including informing and consulting, including through the university website, infrastructure for the implementation of educational programs. The EEC notes the sufficient level of equipment of educational computer classes, the availability of wired and wireless (Wi-Fi) Internet in all classrooms, with the ability to access the electronic information environment of the university, the electronic library, and the organization's website. Diploma works / projects, dissertations of undergraduates are checked for the degree of borrowing in the Anti-plagiarism system. The university has a scientific library with a reading room, a canteen, a sports hall, and a medical center.

The experts will note that, as in the previous accreditation procedure, no information was provided on the availability of educational and scientific literature for accredited programs. The leadership of the EP needs to pay attention to establishing an information channel between the library and the departments.

As a result of a visual inspection of the objects of the material base and interviews with students and teachers, the members of the EEC were convinced that the university has the necessary educational and material assets to ensure the educational process of accredited educational programs. The buildings and facilities of the university comply with the current sanitary standards and fire safety requirements, and are in good condition. A comfortable environment has been created for students and teaching staff.

According to the results of a survey of students with support for educational materials in the learning process, 57.7% are fully satisfied, 28.9% are partially satisfied, 68.6% are fully satisfied with the level of availability of library resources, 21.4% are partially satisfied; 57.7% are completely satisfied with classrooms, auditoriums for large groups, 26.6% are partially satisfied; 57.7% are fully satisfied with the support of educational materials in the learning process, 28.9% are partially satisfied; 51.1% are completely satisfied with student lounges, 28% are partially satisfied; 59.7% are fully satisfied with the availability and quality of Internet resources, 25.1% are partially satisfied; 56.6% are completely satisfied with the existing scientific laboratories, 26.9% are partially satisfied; 56.6% are completely satisfied with the available computer classes, 30.9% are partially satisfied; 58.9% are completely satisfied with the provision of the hostel, 29.4% are partially satisfied.

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering" and 6B04102 "Mathematical Economics and Data Analysis"

- The infrastructure created by KazNITU K.I. Satpaev creates all the conditions for the effective implementation of accredited programs. Comfortable stay zones have been created and are expanding for students, including those that function 24/7. Educational buildings and dormitories are modernly renovated.
- The University demonstrates the sufficiency of classrooms, laboratories and other facilities equipped with equipment to ensure the achievement of the goals of accredited programs. Classrooms are equipped with modern technology, multimedia equipment, transforming classrooms for conducting classes in various forms.

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- The management of the EP together with the university library twice a year (at the beginning of academic semesters) should ensure monitoring of the provision of educational and scientific literature in the context of accredited educational programs in accordance with regulatory requirements. Based on the monitoring results, ensure the timely acquisition of educational and scientific literature.

Conclusions of the EEC according to the criteria:

According to the standard "Educational resources and student support systems" OP 6V04102 "Mathematical Economics and Data Analysis" and OP 6V07304 "Geospatial Digital Engineering" disclosed 13 criteria, of which 2 have strong positions, 11 have satisfactory positions.

6.9. Public Information Standard

- ✓ The PA must publish reliable, objective, up-to-date information about the educational program and its specifics, which should include:
 - expected learning outcomes of the educational program being implemented;
 - qualification and (or) qualifications that will be awarded upon completion of the educational program;
 - approaches to teaching, learning, as well as a system (procedures, methods and forms) of assessment;
 - information about passing scores and learning opportunities provided to students;
 - information about employment opportunities for graduates.
- ✓ The management of the EP should provide for a variety of ways to disseminate information, including the media, information networks to inform the general public and interested parties.
- ✓ Informing the public should include support and explanation of the national development programs of the country and the system of higher and postgraduate education.

- ✓ The OO must demonstrate the reflection on the web resource of information that characterizes it as a whole and in the context of educational programs.
- ✓ An important factor is the availability of adequate and objective information about the teaching staff of the EP.
- ✓ An important factor is informing the public about cooperation and interaction with partners within the framework of the OP.

Evidence

Complete information about the areas of training and educational programs indicating the proposed learning paths, awarded qualifications and expected learning outcomes for the programs is located on the university website <https://satbayev.university>. The site contains regularly updated information about the activities of the university, quality policy and educational programs.

In addition to the main site, there is a public information system on the Internet, consisting of publications on the university website and social networks, there is a university program aimed at working with traditional and electronic media, the student magazine UNIQUUM. On the website of the university there is a "Rector's Blog", in which everyone can ask a question to the first head of the university and get an answer.

University official accounts

Instagram	https://www.instagram.com/satbayev_university/
Facebook	https://www.facebook.com/satbayevuniversity
Telegram	https://t.me/Satbayev_University_Official
LinkedIn	https://www.linkedin.com/school/I048308/admin
YouTube	https://www.youtube.com/channel/UCzpfUbR-imEHB1hOX9tnKEg
TikTok	https://www.tiktok.com/@satbayev_official?lang=en
Google business	https://business.google.com/u/2/posts/1/13945254457139118465

Satbayev University provides systematic information support to the national development programs of the country and the system of higher and postgraduate education, carried out through the participation of teaching staff of the departments in events of various levels and their coverage on the website in the context of the university's activities.

For applicants and school students, information about educational programs is available in an interactive form. The Public Relations Center is constantly working to inform applicants and students about employment opportunities after graduation in social networks and on the website. Since the beginning of 2020, the site has an updated section [Alumni](#), most of which is devoted to the employment of graduates.

An important criterion for evaluating activities is the position of the university in national and international rankings. To date, the university has achieved the following results in national and international rankings: QS World University Ranking - 405th place among technical universities in the world; EECA QS University Rankings - 73rd place; Times Higher Education World University Ranking - for the first time a technical university in Kazakhstan is included in the ranking. Only 3 universities participate in the ranking from Kazakhstan: KazNU, ENU and Satbayev University.

On the educational portal personal pages of users are organized, services are provided according to the category of users (student, teacher, administrator, etc.). The system operates around the clock, the user can work and have access to his virtual space at any time and from any place if there are means of communication.

The introduction of modern information technologies, the creation of a unified educational information environment with credit technology of education allows students of EPs, teaching staff, employees to have access to the schedule of training sessions, sessions and other information on the AIS Hero Study portal.

Each teacher has his own [profile](#), containing a photo of the teacher, information about his scientific achievements, taught disciplines. For the prompt exchange of information between EP teachers, a professional group has been created in the WhatsApp messenger, which includes all employees. For the exchange of information between teachers and students, course advisers have created groups that include students and teachers in the disciplines read in these groups.

In accordance with the Law of the Republic of Kazakhstan dated February 28, 2007 N 234 "On Accounting and Financial Reporting", the university annually, no later than August 31 of the year following the reporting year, publishes on the depository's web portal (electronic database) [audited financial statements](#).

Information on institutional and specialized accreditation, ratings of educational programs, accreditation of scientific laboratories is published [Online](#) university. There are also links to external resources: accreditation bodies and rating agencies. Information in three languages is provided by the evaluation and quality department.

On an ongoing basis, the public is informed about ongoing advanced training courses for employees of business partners. For example, the university website contains information that employees of the Eurasian Group (ERG) are being trained in the modules of the Business Leader 2022-2023 program developed by Satbayev University specifically for ERG. The program is designed for shop supervisors and promising middle managers.

Questioning of students, conducted during the visit of the EEC IAAR, showed:

- Satisfaction with the usefulness of the website of educational organizations in general and faculties in particular was confirmed by 74.8% of students;
- 84.9% are satisfied with information about courses, educational programs, and academic degrees.

Analytical part

EEC confirms the placement of accurate, objective, up-to-date information on the official website [university](https://satbayev.university) <https://satbayev.university>, site [Project Management Institute](#) and website [Mining and Metallurgical Institute named after O.A. Baikonurov](#), as well as in social networks, in the media. Information is posted in three languages (Kazakh, Russian, English) and testifies to the wide awareness of the public and all interested parties about the university as a whole and the programs being implemented.

At the same time, experts note that information about the programs is presented in different navigation and placed in different sections. Searching for information about the development of programs and their changes is convenient for experts, but difficult for applicants and their parents (<https://official.satbayev.university/en/educational-programmy>, <https://official.satbayev.university/ru/geology-oil-gas-business/msg/educational-programmy-mdig>, <https://official.satbayev.university/ru/project-management/nauchno-obrazovatelnyy-tsentr-matematicheskoy-ekonomiki/obrazovatelnye-programmy-mime>, <https://satbayev.university/ru/specialties/geoprostranstvennaya-tsifrovaya-inzheneriya?professionSubjectId=17>, <https://satbayev.university/ru/specialties/matematicheskaya-ekonomika-i-analiz-dannykh-b?professionSubjectId=17>).

Strengths of EP 6B07304 "Geospatial Digital Engineering" and 6B04102 "Mathematical

Economics and Data Analysis"

None.

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- In 2024, conduct a study on the ergonomics of the site interface for external users, including site navigation and placement of main elements. Provide site improvements based on the results of the study.

Conclusions of the EEC according to the criteria:

According to the standard "Educational resources and student support systems" OP 6V04102 "Mathematical Economics and Data Analysis" and OP 6V07304 "Geospatial Digital Engineering" disclosed 12 criteria, of which 11 have satisfactory positions, 1 requires improvement.



(VII) OVERVIEW OF STRENGTHS/BEST PRACTICE FOR EACH STANDARD

Standard "Management of the educational program"

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering" and 6B04102 "Mathematical Economics and Data Analysis"

- The University actively develops a culture of quality assurance, which is evidenced by participation in external evaluation procedures, maintenance and development of the quality management system and its integration with ESG standards and principles, development of KPI for teaching staff and social GPI for students.

- The level of development of the quality management system of the university, the degree of documentation of processes provides a clear definition of those responsible for business processes within the EP, the distribution of staff duties, and the delimitation of the functions of collegial bodies.

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering"

- Guideline EP 6B07304 "Geospatial Digital Engineering" provides a high degree of open accessibility for students, teaching staff, employers, government agencies in their field.

Information Management and Reporting Standard

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering"

- Communications with students, employees and other stakeholders, including conflict resolution, are built on the basis of effective mechanisms: the SU Solutions mobile application, regular meetings with the university administration and the EP, and the well-organized work of advisors.

Standard "Development and approval of the educational program"

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering"

- The uniqueness of EP 6B07304 "Geospatial Digital Engineering" lies in its interdisciplinary content at the intersection of knowledge in the field of land management and IT technologies, the implementation of the program is partially in English. The strong position of the program in the regional market is confirmed by the size of the contingent (currently 667 students, of which 649 (97%) are grantees) and feedback from employers.

Standard "Continuous monitoring and periodic evaluation of educational programs"

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering"

- OP 6B07304 "Geospatial Digital Engineering" is updated annually, which is confirmed by the approved educational programs for 2020-2021, 2021-2022, 2022-2023 academic years. The program of each year has an updated graduate model and learning outcomes, includes changes in the content of disciplines.

- The content of the disciplines is defined in the context of the latest achievements of science and technology in the field of land management (3D modeling, mastering work with satellite positioning technologies, unmanned aerial vehicles and laser scanners, the basics of automated preparation of the graphic part of design documents, the use of modern technologies and software products in solving land management and cadastral tasks, optimal selection of satellite imagery materials and their integration into GIS programs when creating cadastral maps, etc.). The content of the programs includes the results of research work of teachers.

Student-Centered Learning, Teaching and Assessment Standard
Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering" and 6B04102
"Mathematical Economics and Data Analysis"

- An effective mechanism for responding to student complaints is the SU SOLUTIONS mobile application.

Standard "Students"

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering"

- An effective enrollment policy ensures high enrollment rates (196 in 2022) and enrollment rates (667 in 2022) under OP 6B07304 Geospatial Digital Engineering. The share of students on a grant is 97%.
- A wide range of practice bases consisting of large public and private companies. High interest of companies in cooperation with the department.
- Representatives of employers note the high level of training of graduates of this program, including the level of competencies in the field of IT technologies.

Standard "Teaching Staff"

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering" and 6B04102
"Mathematical Economics and Data Analysis"

None.

Standard "Educational resources and student support systems"

Strengths / best practice in EP 6B07304 "Geospatial Digital Engineering" and 6B04102
"Mathematical Economics and Data Analysis"

- The infrastructure created by KazNITU K.I. Satpaev creates all the conditions for the effective implementation of accredited programs. Comfortable stay zones have been created and are expanding for students, including those that function 24/7. Educational buildings and dormitories are modernly renovated.
- The University demonstrates the sufficiency of classrooms, laboratories and other facilities equipped with equipment to ensure the achievement of the goals of accredited programs. Classrooms are equipped with modern technology, multimedia equipment, transforming classrooms for conducting classes in various forms.

Public Information Standard

None.

(VIII) OVERVIEW OF RECOMMENDATIONS FOR IMPROVING QUALITY

Standard "Management of the educational program"

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- Until December 2023, the university management should ensure the development of a common procedure for the formation, revision and monitoring of the EP development plan.
- In 2024, the management of the EP will update the EP development plans and ensure their individuality and uniqueness.
- When updating the Program Development Plans in 2024, the management of the OP will ensure that program risks are identified and managed.

VEK recommendations for EP 6V04102 "Mathematical Economics and Data Analysis"

- LeadershipThe OP in the Program Development Plan should include the effectiveness of the implementation of the recommendations of the EEC based on the results of accreditations (2018 and 2023) and measures to improve programs based on the recommendations.

Information Management and Reporting Standard

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- Ensure that teachers and staff are informed on a regular basis about the results of all surveys conducted at the university.

Standard "Development and approval of the educational program"

VEK recommendations for EP 6V04102 "Mathematical Economics and Data Analysis"

- Until September 2023, the management of the EP should ensure the revision and updating of the graduate model.
- The leadership of the EP in 2024 and beyond on an ongoing basis to provide the opportunity to prepare students for professional certification.
- Until 2027, ensure the development and implementation of a joint (s) and / or two-degree EP with foreign universities.

Standard "Continuous monitoring and periodic evaluation of educational programs"

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- Until the beginning of 2024, the university management should ensure the development of a common procedure that regulates the frequency, forms and methods for assessing the EP.
- By July 1, 2023, update the description of educational programs on the official website of the university in the section Applicants / Undergraduate / Educational programs, supplement the description with links to the content of the programs.
- By the end of 2023, review and unify the placement of information about the educational programs of the university: create a section/website/page for each educational program with a full description of the program, content, curricula, characteristics of program changes, etc.

WEC Recommendations for 6B04102 "Mathematical Economics and Data Analysis"

- Until September 2023, the management of the EP should ensure the revision of the structure and content of the EP in accordance with the approved Regulations on the development

of educational programs, taking into account changes in the labor market, the requirements of employers and the social demand of society.

Student-Centered Learning, Teaching and Assessment Standard

VEK recommendations for OP 6V07304 "Geospatial digital engineering"

- Ensure that own research of teaching staff in the field of teaching methods of academic disciplines in the context of student-centered learning.

Standard "Students"

VEK recommendations for EP 6V04102 "Mathematical Economics and Data Analysis"

- Provide an opportunity for external and internal academic mobility of at least one student in each academic year.

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- The management of the EP should ensure the functioning of the Alumni Association and increase the proportion of graduates of accredited EPs in its composition.
- By December 31, 2023 on the website [Satbayev University](#) in the "Alumni" section, provide links to more complete information about the Alumni Association (alumni database, interviews with outstanding alumni, discoveries and innovations proposed by them).

Standard "Teaching Staff"

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- The university management should determine and implement tools and procedures for monitoring and evaluating the actual workload of teaching staff (surveys, analytical studies) with the adoption of corrective actions.

Standard "Educational resources and student support systems"

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- The management of the EP together with the university library twice a year (at the beginning of academic semesters) should ensure monitoring of the provision of educational and scientific literature in the context of accredited educational programs in accordance with regulatory requirements. Based on the monitoring results, ensure the timely acquisition of educational and scientific literature.

Public Information Standard

VEC recommendations for OP 6V07304 "Geospatial Digital Engineering" and 6V04102 "Mathematical Economics and Data Analysis"

- In 2024, conduct a study on the ergonomics of the site interface for external users, including site navigation and placement of main elements. Provide site improvements based on the results of the study.

(IX) OVERVIEW OF THE RECOMMENDATION FOR THE DEVELOPMENT OF EDUCATIONAL ORGANIZATION

For the unambiguity of the guidelines for the development of the university and its programs, it is recommended to harmonize the vision of the development of the university in terms of its

place in the ranking of universities (Top 200 or Top 300) in strategic documents (Strategies and Policies in the field of quality).

(X) RECOMMENDATION TO THE ACCREDITATION BOARD

The external expert commission made a unanimous decision to recommend to the IAAR Accreditation Council the educational program EP 6B04102 "Mathematical Economics and Data Analysis" to be accredited for a period of 5 (five) years.

The external expert commission made a unanimous decision to recommend to the IAAR Accreditation Council that the educational program 6B07304 "Geospatial Digital Engineering" be accredited for a period of 7 (seven) years.



Annex 1. Evaluation table "PARAMETERS OF A SPECIALIZED PROFILE"

Annex 1. Evaluation table "PARAMETERS OF A SPECIALIZED PROFILE"

The conclusion of the external expert commission based on the results of the quality assessment educational program 6B04102 "Mathematical economics and data analysis"

Non-profit joint stock company "Kazakh National Research Technical University named after K.I. Satpaev"

n\n	n\n	Criteria for evaluation	Position of the educational organization			
			strong	Satisfy body	Assumes improvement	Unsatisfactory body
Standard "Educational program management»						
1	1.	The university must demonstrate the development of the goal and development strategy of the EP based on the analysis of external and internal factors with the wide involvement of various stakeholders		+		
2	2.	The quality assurance policy should reflect the relationship between research, teaching and learning		+		
3	3.	The university demonstrates the development of a culture of quality assurance	+			
4	4.	Commitment to quality assurance should apply to any activity performed by contractors and partners (outsourcing), including the implementation of joint/double-degree education and academic mobility		+		
5	5.	The management of the EP ensures the transparency of the development plan for the development of the EP based on an analysis of its functioning, the real positioning of the university and the focus of its activities on meeting the needs of students, the state, employers and other stakeholders			+	
6	6.	The EP management demonstrates the functioning of the mechanisms for the formation and regular revision of the EP development plan and monitoring its implementation, assessing the achievement of learning goals, meeting the needs of students, employers and society, making decisions aimed at continuous improvement of the EP			+	

7	7.	The EP management should involve representatives of stakeholder groups, including employers, students and teaching staff in the formation of the EP development plan		+		
8	8.	The EP management must demonstrate the individuality and uniqueness of the EP development plan, its consistency with national development priorities and the development strategy of the educational organization		+		
9	9.	The university must demonstrate a clear definition of those responsible for business processes within the framework of the EP, the distribution of staff duties, and the delimitation of the functions of collegial bodies	+			
10	10.	The management of the EP ensures the coordination of the activities of all persons involved in the development and management of the EP, and its continuous implementation, and also involves all interested parties in this process		+		
eleven	11.	The EP management must ensure the transparency of the management system, the functioning of the internal quality assurance system, including its design, management and monitoring, and the adoption of appropriate decisions		+		
12	12.	The management of the EP should carry out risk management		+		
13	13.	ManagementThe EP should ensure the participation of representatives of interested parties (employers, teaching staff, students) in the collegiate management bodies of the educational program, as well as their representativeness in making decisions on the management of the educational program		+		
14	14.	The university must demonstrate innovation management within the EP, including the analysis and implementation of innovative proposals		+		
15	15.	The management of the EP must demonstrate its openness and accessibility for students, teaching staff, employers and other interested parties		+		
16	16.	The management of the EP confirms the completion of training in education management programs		+		
17	17.	ManagementThe SP should strive to ensure that the progress made since the last external quality assurance procedure is taken into account when preparing for the next procedure.			+	
Total by standard			2	12	3	0
Information Management and Reporting Standard						

18	1.	The university must ensure the functioning of the system for collecting, analyzing and managing information based on modern information and communication technologies and software		+		
19	2.	The EP guidance demonstrates the systematic use of processed, adequate information to improve the internal quality assurance system		+		
20	3.	The EP management demonstrates the presence of a reporting system that reflects the activities of all structural units and departments within the EP, including an assessment of their performance		+		
21	4.	The university must determine the frequency, forms and methods for assessing the management of the EP, the activities of collegial bodies and structural divisions, top management		+		
22	5.	The university must demonstrate a mechanism for ensuring the protection of information, including determining the persons responsible for the reliability and timeliness of the analysis of information and the provision of data		+		
23	6.	The university demonstrates the involvement of students, employees and teaching staff in the processes of collecting and analyzing information, as well as making decisions based on them		+		
24	7.	The EP management must demonstrate the existence of communication mechanisms with students, employees and other stakeholders, including conflict resolution	+			
25	8.	The university must ensure the measurement of the degree of satisfaction with the needs of students, teaching staff and staff within the framework of the EP and demonstrate evidence of the elimination of identified shortcomings		+		
26	9.	The university should evaluate the effectiveness and efficiency of activities in the context of the EP		+		
		<i>The information collected and analyzed by the university within the framework of the EP should take into account:</i>				
27	10.	key performance indicators		+		
28	ele ve n.	the dynamics of the contingent of students in the context of forms and types		+		
29	12.	academic performance, student achievement and dropout		+		
thirty	13.	satisfaction of students with the implementation of the EP and the quality of education at the university		+		
31	14.	availability of educational resources and support systems for students		+		

32	15.	employment and career growth of graduates		+		
33	16.	Students, teaching staff and staff must document their consent to the processing of personal data		+		
34	17.	The management of the EP should contribute to the provision of the necessary information in the relevant fields of science		+		
Total by standard			1	16	0	0
Standard "Development and approval of the educational program"						
35	1.	The university must demonstrate the existence of a documented procedure for the development of the EP and its approval at the institutional level		+		
36	2.	The university must demonstrate the compliance of the developed EP with the established goals and planned learning outcomes		+		
37	3.	The EP management should determine the influence of disciplines and professional practices on the formation of learning outcomes		+		
38	4.	The university demonstrates the presence of a model of a graduate of the EP, which describes the learning outcomes and personal qualities			+	
39	5.	The qualification awarded upon completion of the EP must be clearly defined, explained and correspond to a certain level of NQF, QF-EHEA		+		
40	6.	The management of the EP must demonstrate the modular structure of the program based on ECTS, ensure that the structure of the content of the EP corresponds to the goals set, with a focus on achieving the planned learning outcomes for each graduate		+		
41	7.	The management of the EP should ensure that the content of academic disciplines and learning outcomes correspond to each other and the level of education (bachelor's, master's, doctoral studies)		+		
42	8.	The management of the EP must demonstrate the conduct of external reviews of the EP		+		
43	9.	The management of the EP must provide evidence of the participation of students, teaching staff and other stakeholders in the development and quality assurance of the EP		+		
44	10.	The management of the EP must demonstrate the uniqueness of the educational program, its positioning in the educational market (regional/national/international)		+		
45	11.	An important factor is the possibility of preparing students for professional certification			+	

46	12.	An important factor is the presence of a joint (s) and / or two-degree EP with foreign universities			+	
Total by standard			0	9	3	0
Standard "Continuous monitoring and periodic evaluation of the educational program"						
47	1.	The university must ensure the revision of the structure and content of the EP, taking into account changes in the labor market, the requirements of employers and the social demand of society		+		
48	2.	The university must demonstrate the existence of a documented procedure for monitoring and periodic evaluation in order to achieve the goal of the EP and continuously improve the EP		+		
		<i>Monitoring and periodic evaluation of the EP should consider:</i>				
49	3.	the content of the program in the context of the latest achievements of science and technology in a particular discipline		+		
50	4.	changing needs of society and the professional environment		+		
51	5.	workload, performance and graduation of students		+		
52	6.	effectiveness of student assessment procedures		+		
53	7.	needs and satisfaction of students		+		
54	8.	compliance of the educational environment and the activities of support services with the goals of the EP		+		
55	9.	Руководство ОП должно опубликовывать сведения об изменениях ОП, проинформировать заинтересованных лиц о любых запланированных или предпринятых действиях в рамках ОП			+	
56	10.	Службы поддержки должны выявлять потребности различных групп обучающихся и степень их удовлетворенности организацией обучения, преподаванием, оценением, освоением ОП в целом		+		
Итого по стандарту			0	9	1	0
Стандарт «Студентоцентрированное обучение, преподавание и оценка успеваемости»						
57	1.	Руководство ОП должно обеспечить уважение и внимание к различным группам обучающихся и их потребностям, предоставление им гибких траекторий обучения		+		
58	2.	The management of the EP should ensure teaching on the basis of modern achievements of world science and practice in the field of training, the use of various modern methods of teaching and evaluating learning outcomes that ensure the achievement of the objectives		+		

		of the EP, including competencies, skills to perform scientific work at the required level				
59	3.	The management of the EP should determine the mechanisms for distributing the teaching load of students between theory and practice within the framework of the EP, ensuring the development of the content and achievement of the objectives of the EP by each graduate		+		
60	4.	An important factor is the presence of own research in the field of teaching methods of EP disciplines		+		
61	5.	The university must ensure that the procedures for evaluating learning outcomes correspond to the planned results and goals of the EP		+		
62	6.	The university must ensure the consistency, transparency and objectivity of the mechanism for assessing the learning outcomes of the EP, the publication of criteria and methods for assessing learning outcomes in advance		+		
63	7.	Assessors must be familiar with modern methods for assessing learning outcomes and regularly improve their skills in this area.		+		
64	8.	The management of the EP must demonstrate the existence of a feedback system on the use of various teaching methods and the assessment of learning outcomes		+		
65	9.	The management of the EP must demonstrate support for the autonomy of learners, while providing guidance and assistance from the teacher.		+		
66	10.	The management of the EP must demonstrate the existence of a procedure for responding to complaints from students	+			
Total by standard			1	9	0	0
Standard "Students»						
67	1.	The university must demonstrate the policy of forming a contingent of students and ensure transparency, publicity of the procedures governing the life cycle of students (from admission to completion)		+		
68	2.	The management of the EP should provide for special adaptation and support programs for newly enrolled and foreign students		+		
69	3.	The university must demonstrate the compliance of its actions with the Lisbon Recognition Convention, including the existence and application of a mechanism for recognizing the results of academic mobility of students, as well as the results of additional, formal and non-formal education		+		

70	4.	The university should provide an opportunity for external and internal academic mobility of students, as well as assist them in obtaining external grants for study			+	
71	5.	The university should encourage students to self-education and development outside the main program (extracurricular activities)			+	
72	6.	An important factor is the existence of a mechanism to support gifted students.			+	
73	7.	The university must demonstrate cooperation with other educational organizations and national centers of the "European Network of National Information Centers for Academic Recognition and Mobility / National Academic Recognition Information Centers" ENIC / NARIC in order to ensure comparable recognition of qualifications			+	
74	8.	The university must provide students with internship places, demonstrate the procedure for facilitating the employment of graduates, maintaining contact with them			+	
75	9.	The university must demonstrate the procedure for issuing documents to graduates confirming the qualifications received, including the achieved learning outcomes			+	
76	10.	The management of the EP must demonstrate that program graduates have skills that are in demand in the labor market and that these skills are really relevant			+	
77	11.	The management of the EP must demonstrate the existence of a mechanism for monitoring the employment and professional activities of graduates			+	
78	12.	An important factor is the existence of an active alumni association/union				+
Total by standard			0	10	2	0
Standard "Teaching staff»						
79	1.	The university must have an objective and transparent personnel policy in the context of the EP, including recruitment (including invited teaching staff), professional growth and development of staff, ensuring the professional competence of the entire staff			+	
80	2.	The university must demonstrate the compliance of the qualitative composition of the teaching staff with the established qualification requirements, the strategy of the university, and the goals of the EP			+	
81	3.	The management of the EP should demonstrate the change in the role of the teacher in connection with the transition to student-centered learning and teaching			+	
82	4.	The university should provide opportunities for career growth and professional development of teaching staff, including young teachers			+	

83	5.	The university should involve in the teaching of specialists from relevant industries with professional competencies that meet the requirements of the EP		+		
84	6.	The university must demonstrate the presence of a motivation mechanism for the professional and personal development of teaching staff		+		
85	7.	The university must demonstrate the widespread use of information and communication technologies and software in the educational process by the teaching staff (for example, on-line training, e-portfolio, MEPs, etc.)		+		
86	8.	The university must demonstrate the focus on the development of academic mobility, attracting the best foreign and domestic teachers		+		
87	9.	The university must demonstrate the involvement of each teacher in promoting a culture of quality and academic integrity at the university, determine the contribution of teaching staff, including those invited, to achieving the goals of the EP		+		
88	10.	An important factor is the involvement of teaching staff in the development of the economy, education, science and culture of the region and the country		+		
Total by standard			0	10	0	0
Standard "Educational resources and student support systems"						
89	1.	The university must guarantee the compliance of the infrastructure, educational resources, including material and technical, with the goals of the educational program	+			
90	2.	The management of the EP must demonstrate the sufficiency of classrooms, laboratories and other facilities equipped with modern equipment to ensure the achievement of the objectives of the EP	+			
		<i>The university must demonstrate the compliance of information resources with the needs of the university and the EPs being implemented, including in the following areas:</i>				
91	3.	technological support for students and teaching staff in accordance with educational programs (for example, online learning, modeling, databases, data analysis programs)		+		
92	4.	library resources, including a fund of educational, methodical and scientific literature on general education, basic and major disciplines on paper and electronic media, periodicals, access to scientific databases		+		
93	5.	examination of the results of research, final works, dissertations for plagiarism		+		
94	6.	access to educational Internet resources		+		

95	7.	functioning of Wi-Fi on the territory		+		
96	8.	The university must demonstrate that it creates conditions for conducting scientific research, integrating science and education, publishing the results of research work of teaching staff, staff and students		+		
97	9.	The university should strive to ensure that the educational equipment and software used for the development of educational programs are similar to those used in the relevant sectors of the economy		+		
98	10.	The management of the EP must demonstrate the existence of procedures for supporting various groups of students, including information and counseling		+		
99	elev en.	The management of the EP should show the existence of conditions for the advancement of the student along an individual educational trajectory		+		
10	12.	The university must take into account the needs of different groups of students (adults, working, foreign students, as well as students with special educational needs)		+		
101	13	The university must ensure that the infrastructure meets the safety requirements		+		
Total by standard			2	elev n	0	0
Public Information Standard						
102	1.	The university guarantees that the published information is accurate, objective, up-to-date and reflects all areas of the university's activities within the framework of the educational program			+	
103	2.	Informing the public should include support and explanation of the national development programs of the country and the system of higher and postgraduate education		+		
104	3.	The university management should use a variety of ways to disseminate information (including the media, web resources, information networks, etc.) to inform the general public and interested parties		+		
		<i>Information about the educational program is objective, up-to-date and should include:</i>				
105	4.	the purpose and planned results of the EP, the qualification to be awarded		+		
106	5.	information and the system for assessing the educational achievements of students		+		
107	6.	information about academic mobility programs and other forms of cooperation with partner universities, employers		+		

108	7.	information about the opportunities for the development of personal and professional competencies of students and employment		+		
109	8.	data reflecting the positioning of the EP in the market of educational services (at the regional, national, international levels)		+		
110	9.	An important factor is the publication on open resources of reliable information about teaching staff, in the context of personalities		+		
111	10.	The university must publish audited financial statements for the EP on its own web resource		+		
113	elev en.	The university must post information and links to external resources based on the results of external evaluation procedures		+		
113	12.	An important factor is the placement of information about cooperation and interaction with partners, including scientific / consulting organizations, business partners, social partners and educational organizations		+		
Total by standard			0	elevation	1	0
TOTAL			6	97	10	0

6 (5.3%) the parameter has the position "strong"

97 (85.6%) parameters have a position of "satisfactory"

10 (8.8%) parameters have the position "suggests improvement"

**The conclusion of the external expert commission based on the results of the quality assessment
educational program 6B07304 "Geospatial digital engineering"
Non-profit joint stock company "Kazakh National Research Technical University named
after K.I. Satpaev"**

n\n	n\n	Criteria for evaluation	Position of the educational organization			
			strong	Satisfy body	Assumes improvement	Unsatisfactory body
Standard "Educational program management»						
1	1.	The university must demonstrate the development of the goal and development strategy of the EP based on the analysis of external and internal factors with the wide involvement of various stakeholders		+		
2	2.	The quality assurance policy should reflect the relationship between research, teaching and learning		+		
3	3.	The university demonstrates the development of a culture of quality assurance	+			
4	4.	Commitment to quality assurance should apply to any activity performed by contractors and partners (outsourcing), including the implementation of joint/double-degree education and academic mobility		+		
5	5.	The management of the EP ensures the transparency of the development plan for the development of the EP based on an analysis of its functioning, the real positioning of the university and the focus of its activities on meeting the needs of students, the state, employers and other stakeholders			+	
6	6.	The EP management demonstrates the functioning of the mechanisms for the formation and regular revision of the EP development plan and monitoring its implementation, assessing the achievement of learning goals, meeting the needs of students, employers and society, making decisions aimed at continuous improvement of the EP			+	
7	7.	The EP management should involve representatives of stakeholder groups, including employers, students and teaching staff in the formation of the EP development plan		+		
8	8.	The EP management must demonstrate the individuality and uniqueness of the EP development plan, its consistency with national development		+		

		priorities and the development strategy of the educational organization				
9	9.	The university must demonstrate a clear definition of those responsible for business processes within the framework of the EP, the distribution of staff duties, and the delimitation of the functions of collegial bodies	+			
10	10.	The management of the EP ensures the coordination of the activities of all persons involved in the development and management of the EP, and its continuous implementation, and also involves all interested parties in this process		+		
eleven	11.	The EP management must ensure the transparency of the management system, the functioning of the internal quality assurance system, including its design, management and monitoring, and the adoption of appropriate decisions		+		
12	12.	The management of the EP should carry out risk management		+		
13	13.	ManagementThe EP should ensure the participation of representatives of interested parties (employers, teaching staff, students) in the collegiate management bodies of the educational program, as well as their representativeness in making decisions on the management of the educational program		+		
14	14.	The university must demonstrate innovation management within the EP, including the analysis and implementation of innovative proposals		+		
15	15.	The management of the EP must demonstrate its openness and accessibility for students, teaching staff, employers and other interested parties	+			
16	16.	The management of the EP confirms the completion of training in education management programs		+		
17	17.	ManagementThe SP should strive to ensure that the progress made since the last external quality assurance procedure is taken into account when preparing for the next procedure.		+		
Total by standard			3	12	2	0
Information Management and Reporting Standard						
18	1.	The university must ensure the functioning of the system for collecting, analyzing and managing information based on modern information and communication technologies and software		+		
19	2.	The EP guidance demonstrates the systematic use of processed, adequate information to improve the internal quality assurance system		+		
20	3.	The EP management demonstrates the presence of a reporting system that reflects the activities of all		+		

		structural units and departments within the EP, including an assessment of their performance				
21	4.	The university must determine the frequency, forms and methods for assessing the management of the EP, the activities of collegial bodies and structural divisions, top management		+		
22	5.	The university must demonstrate a mechanism for ensuring the protection of information, including determining the persons responsible for the reliability and timeliness of the analysis of information and the provision of data		+		
23	6.	The university demonstrates the involvement of students, employees and teaching staff in the processes of collecting and analyzing information, as well as making decisions based on them		+		
24	7.	The EP management must demonstrate the existence of communication mechanisms with students, employees and other stakeholders, including conflict resolution	+			
25	8.	The university must ensure the measurement of the degree of satisfaction with the needs of students, teaching staff and staff within the framework of the EP and demonstrate evidence of the elimination of identified shortcomings		+		
26	9.	The university should evaluate the effectiveness and efficiency of activities in the context of the EP		+		
		<i>The information collected and analyzed by the university within the framework of the EP should take into account:</i>				
27	10.	key performance indicators		+		
28	eleven.	the dynamics of the contingent of students in the context of forms and types		+		
29	12.	academic performance, student achievement and dropout		+		
thirty	13.	satisfaction of students with the implementation of the EP and the quality of education at the university		+		
31	14.	availability of educational resources and support systems for students		+		
32	15.	employment and career growth of graduates		+		
33	16.	Students, teaching staff and staff must document their consent to the processing of personal data		+		
34	17.	The management of the EP should contribute to the provision of the necessary information in the relevant fields of science		+		
Total by standard			1	16	0	0

Standard "Development and approval of the educational program"						
35	1.	The university must demonstrate the existence of a documented procedure for the development of the EP and its approval at the institutional level		+		
36	2.	The university must demonstrate the compliance of the developed EP with the established goals and planned learning outcomes		+		
37	3.	The EP management should determine the influence of disciplines and professional practices on the formation of learning outcomes		+		
38	4.	The university demonstrates the presence of a model of a graduate of the EP, which describes the learning outcomes and personal qualities		+		
39	5.	The qualification awarded upon completion of the EP must be clearly defined, explained and correspond to a certain level of NQF, QF-EHEA		+		
40	6.	The management of the EP must demonstrate the modular structure of the program based on ECTS, ensure that the structure of the content of the EP corresponds to the goals set, with a focus on achieving the planned learning outcomes for each graduate		+		
41	7.	The management of the EP should ensure that the content of academic disciplines and learning outcomes correspond to each other and the level of education (bachelor's, master's, doctoral studies)		+		
42	8.	The management of the EP must demonstrate the conduct of external reviews of the EP		+		
43	9.	The management of the EP must provide evidence of the participation of students, teaching staff and other stakeholders in the development and quality assurance of the EP		+		
44	10.	The management of the EP must demonstrate the uniqueness of the educational program, its positioning in the educational market (regional/national/international)	+			
45	11.	An important factor is the possibility of preparing students for professional certification		+		
46	12.	An important factor is the presence of a joint (s) and / or two-degree EP with foreign universities		+		
Total by standard			1	eleven	0	0
Standard "Continuous monitoring and periodic evaluation of the educational program"						
47	1.	The university must ensure the revision of the structure and content of the EP, taking into account changes in the labor market, the requirements of employers and the social demand of society	+			

48	2.	The university must demonstrate the existence of a documented procedure for monitoring and periodic evaluation in order to achieve the goal of the EP and continuously improve the EP		+		
		<i>Monitoring and periodic evaluation of the EP should consider:</i>				
49	3.	the content of the program in the context of the latest achievements of science and technology in a particular discipline	+			
50	4.	changing needs of society and the professional environment	+			
51	5.	workload, performance and graduation of students		+		
52	6.	effectiveness of student assessment procedures		+		
53	7.	needs and satisfaction of students		+		
54	8.	compliance of the educational environment and the activities of support services with the goals of the EP		+		
55	9.	The management of the EP should publish information about changes to the EP, inform interested parties about any planned or undertaken actions within the EP			+	
56	10.	Support services should identify the needs of various groups of students and their degree of satisfaction with the organization of training, teaching, assessment, mastering the EP in general		+		
Total by standard			3	6	1	0
Student-Centered Learning, Teaching and Assessment Standard						
57	1.	The management of the EP should ensure respect and attention to the various groups of students and their needs, providing them with flexible learning paths		+		
58	2.	The management of the EP should ensure teaching on the basis of modern achievements of world science and practice in the field of training, the use of various modern methods of teaching and evaluating learning outcomes that ensure the achievement of the objectives of the EP, including competencies, skills to perform scientific work at the required level		+		
59	3.	The management of the EP should determine the mechanisms for distributing the teaching load of students between theory and practice within the framework of the EP, ensuring the development of the content and achievement of the objectives of the EP by each graduate		+		
60	4.	An important factor is the presence of own research in the field of teaching methods of EP disciplines			+	
61	5.	The university must ensure that the procedures for evaluating learning outcomes correspond to the planned results and goals of the EP		+		

62	6.	The university must ensure the consistency, transparency and objectivity of the mechanism for assessing the learning outcomes of the EP, the publication of criteria and methods for assessing learning outcomes in advance		+		
63	7.	Assessors must be familiar with modern methods for assessing learning outcomes and regularly improve their skills in this area.		+		
64	8.	The management of the EP must demonstrate the existence of a feedback system on the use of various teaching methods and the assessment of learning outcomes		+		
65	9.	The management of the EP must demonstrate support for the autonomy of learners, while providing guidance and assistance from the teacher.		+		
66	10.	The management of the EP must demonstrate the existence of a procedure for responding to complaints from students	+			
Total by standard			1	8	1	0
Standard "Students»						
67	1.	The university must demonstrate the policy of forming a contingent of students and ensure transparency, publicity of the procedures governing the life cycle of students (from admission to completion)	+			
68	2.	The management of the EP should provide for special adaptation and support programs for newly enrolled and foreign students		+		
69	3.	The university must demonstrate the compliance of its actions with the Lisbon Recognition Convention, including the existence and application of a mechanism for recognizing the results of academic mobility of students, as well as the results of additional, formal and non-formal education		+		
70	4.	The university should provide an opportunity for external and internal academic mobility of students, as well as assist them in obtaining external grants for study		+		
71	5.	The university should encourage students to self-education and development outside the main program (extracurricular activities)		+		
72	6.	An important factor is the existence of a mechanism to support gifted students.		+		
73	7.	The university must demonstrate cooperation with other educational organizations and national centers of the "European Network of National Information Centers for Academic Recognition and Mobility / National Academic Recognition Information Centers" ENIC / NARIC in order to ensure comparable recognition of qualifications		+		

74	8.	The university must provide students with internship places, demonstrate the procedure for facilitating the employment of graduates, maintaining contact with them	+			
75	9.	The university must demonstrate the procedure for issuing documents to graduates confirming the qualifications received, including the achieved learning outcomes		+		
76	10.	The management of the EP must demonstrate that program graduates have skills that are in demand in the labor market and that these skills are really relevant	+			
77	11.	The management of the EP must demonstrate the existence of a mechanism for monitoring the employment and professional activities of graduates		+		
78	12.	An important factor is the existence of an active alumni association/union			+	
Total by standard			3	8	1	0
Standard "Teaching staff»						
79	11.	The university must have an objective and transparent personnel policy in the context of the EP, including recruitment (including invited teaching staff), professional growth and development of staff, ensuring the professional competence of the entire staff		+		
80	12.	The university must demonstrate the compliance of the qualitative composition of the teaching staff with the established qualification requirements, the strategy of the university, and the goals of the EP		+		
81	13.	The management of the EP should demonstrate the change in the role of the teacher in connection with the transition to student-centered learning and teaching		+		
82	14.	The university should provide opportunities for career growth and professional development of teaching staff, including young teachers		+		
83	15.	The university should involve in the teaching of specialists from relevant industries with professional competencies that meet the requirements of the EP		+		
84	16.	The university must demonstrate the presence of a motivation mechanism for the professional and personal development of teaching staff		+		
85	17.	The university must demonstrate the widespread use of information and communication technologies and software in the educational process by the teaching staff (for example, on-line training, e-portfolio, MEPs, etc.)		+		
86	18.	The university must demonstrate the focus on the development of academic mobility, attracting the best foreign and domestic teachers		+		
87	19.	The university must demonstrate the involvement of each teacher in promoting a culture of quality and		+		

		academic integrity at the university, determine the contribution of teaching staff, including those invited, to achieving the goals of the EP				
88	20.	An important factor is the involvement of teaching staff in the development of the economy, education, science and culture of the region and the country		+		
Total by standard			0	10	0	0
Standard "Educational resources and student support systems"						
89	1.	The university must guarantee the compliance of the infrastructure, educational resources, including material and technical, with the goals of the educational program	+			
90	2.	The management of the EP must demonstrate the sufficiency of classrooms, laboratories and other facilities equipped with modern equipment to ensure the achievement of the objectives of the EP	+			
		<i>The university must demonstrate the compliance of information resources with the needs of the university and the EPs being implemented, including in the following areas:</i>				
91	3.	technological support for students and teaching staff in accordance with educational programs (for example, online learning, modeling, databases, data analysis programs)		+		
92	4.	library resources, including a fund of educational, methodical and scientific literature on general education, basic and major disciplines on paper and electronic media, periodicals, access to scientific databases		+		
93	5.	examination of the results of research, final works, dissertations for plagiarism		+		
94	6.	access to educational Internet resources		+		
95	7.	functioning of Wi-Fi on the territory		+		
96	8.	The university must demonstrate that it creates conditions for conducting scientific research, integrating science and education, publishing the results of research work of teaching staff, staff and students		+		
97	9.	The university should strive to ensure that the educational equipment and software used for the development of educational programs are similar to those used in the relevant sectors of the economy		+		
98	10.	The management of the EP must demonstrate the existence of procedures for supporting various groups of students, including information and counseling		+		
99	elev en.	The management of the EP should show the existence of conditions for the advancement of the student along an individual educational trajectory		+		

10	12.	The university must take into account the needs of different groups of students (adults, working, foreign students, as well as students with special educational needs)		+		
101	13	The university must ensure that the infrastructure meets the safety requirements		+		
Total by standard			2	elevation	0	0
Public Information Standard						
102	1.	The university guarantees that the published information is accurate, objective, up-to-date and reflects all areas of the university's activities within the framework of the educational program			+	
103	2.	Informing the public should include support and explanation of the national development programs of the country and the system of higher and postgraduate education		+		
104	3.	The university management should use a variety of ways to disseminate information (including the media, web resources, information networks, etc.) to inform the general public and interested parties		+		
		<i>Information about the educational program is objective, up-to-date and should include:</i>				
105	4.	the purpose and planned results of the EP, the qualification to be awarded		+		
106	5.	information and the system for assessing the educational achievements of students		+		
107	6.	information about academic mobility programs and other forms of cooperation with partner universities, employers		+		
108	7.	information about the opportunities for the development of personal and professional competencies of students and employment		+		
109	8.	data reflecting the positioning of the EP in the market of educational services (at the regional, national, international levels)		+		
110	9.	An important factor is the publication on open resources of reliable information about teaching staff, in the context of personalities		+		
111	10.	The university must publish audited financial statements for the EP on its own web resource		+		
113	elevation.	The university must post information and links to external resources based on the results of external evaluation procedures		+		
113	12.	An important factor is the placement of information about cooperation and interaction with partners, including scientific / consulting organizations, business partners, social partners and educational organizations		+		

Total by standard	0	elevation	1	0
TOTAL	14	93	6	0

14 (12.4%) the parameter has the position "strong"
 93 (82.3) parameters have a position of "satisfactory"
 6 (5.3%) parameters have the position "suggests improvement"

