REPORT

on the results of the work of the external expert assessment commission for compliance with the requirements of specialized accreditation standards for educational programs

7M06102 MACHINE LEARNING & DATA SCIENCE,
8D06102 MACHINE LEARNING & DATA SCIENCE,
6B07121 SPACE ENGINEERING AND TECHNOLOGY,
7M07138 SPACE ENGINEERING AND TECHNOLOGY

NJSC KAZAKH NATIONAL RESEARCH TECHNICAL
UNIVERSITY NAMED AFTER K.I. SATPAEVA"

from March 26 to March 28, 2024

INDEPENDENT ACCREDITATION AND RATING AGENCY
External expert commission

Addressed to
IAAR Accreditation Council

АККРЕДИТТЕУ ЖӘНЕ РЕЙТИНГТІҢ ТӘУЕЛСІЗ АГЕНТТІГІ

НЕЗАВИСИМОЕ АГЕНТСТВО АККРЕДИТАЦИИ И РЕЙТИНГА

INDEPENDENT AGENCY FOR ACCREDITATION AND RATING

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from March 26 to March 28, 2024

Almaty city   **"28" March 2024**

(I) LIST OF SYMBOLS AND ABBREVIATIONS

EEC - external expert commission
State compulsory education standard - state compulsory education standard
DP – documented procedure
UNT – unified national testing
IAiIT – Institute of Automation and Information Technologies
IUP – individual curriculum
KTO – credit training technology
KTT – space technology and technology
QED – catalog of elective disciplines
MNIVO RK – Ministry of Science and Higher Education of the Republic of Kazakhstan
MEP - modular educational program
MUP - modular curriculum
IAAR –
NAO – non-profit joint stock company
R&D – scientific research work
R&D and ID - research work and innovation activities
NIRS – student research work
NTSKIT – National Center for Space Research and Technology
EP – educational program
Teaching staff - teaching staff
RK – Republic of Kazakhstan
ET&CT – Electronics, telecommunications and space technologies
PI – Software Engineering
RUP - working curriculum
QMS – quality management system
SRS – independent work of students
SRSP – independent work of students under the guidance of a teacher
UVP - educational support staff
UMSU – educational and methodological council of the university
UMR – educational and methodological work
EUMM – electronic educational teaching materials

(II) <u>INTRODUCTION</u>

In accordance with Order No. 26-24-OD dated January 31, 2024 of the Independent Agency for Accreditation and Rating, an external expert commission assessed the conformity of educational programs 6B07121 - "Space Engineering and Technologies", 7M07138 - "Space Engineering" from March 26 to 28, 2024 and technologies", 7M06102 – "Machine Learning & Data Science", 8D06102 – "Machine Learning & Data Science" Kazakh National Research Technical University named after K.I. Satpayev standards of specialized accreditation of the IAAR.

The report of the external expert commission (hereinafter referred to as the EEC) contains an assessment of the compliance of the presented educational program of the educational organization with the criteria of the IAAR, recommendations of the EEC for further improvement of educational programs and parameters of the profile of educational programs implemented at the Kazakh National Research Technical University named after K.I. Satpayeva.

Composition of VEC:
1. Chairman of the EEC IAAR - Bratsikhin Andrey Aleksandrovich, Doctor of Technical Sciences, Professor, Rector, Udmurt State Agrarian University, Expert of the Russian Accreditation Agency, Expert of the IAAR Category I,
2. IAAR expert – Yesengalieva Zhanna Serzhanovna, PhD, Associate Professor, Gumilyov Eurasian National University (Astana, Republic of Kazakhstan),
3. IAAR expert – Zhilisbaeva Karlyga Sansyzbaevna, Doctor of Physical and Mathematical Sciences, Professor, Kazakh National University. al-Farabi (Almaty, Republic of Kazakhstan),
4. **IAAR Expert, Employer – Gulmira Zeinulovna Dzhagiparova**, Head of the commercial unit, KT Cloud lab (Almaty, Republic of Kazakhstan),
5. **IAAR expert, student – Adelina Adelevna Rakisheva,** 2nd year doctoral student, East Kazakhstan Technical University. D. Serikbaeva (Ust-Kamenogorsk, Republic of Kazakhstan),
6. **IAAR expert – German Andrey Evgenievich** Ph.D., Associate Professor, Grodno State University named after Yanka Kupala (Grodno, Belarus),
7. **IAAR expert – Bulashev Berdibek Kabkenovich**, Candidate of Agricultural Sciences, Associate Professor, Chairman of the Technical Committee for Standardization, Kazakh Agrotechnical Research University named after S. Seifullin (Astana, Republic of Kazakhstan),
8. **IAAR expert, student – Aubakirova Zulfiya Akylbekovna**, 1st year doctoral student, Karaganda Technical University named after Abylkas Saginov (Karaganda, Republic of Kazakhstan),
9. **Coordinator of the IAAR EEC – Gulfiya Rivkatovna Nazyrova**, Ph.D., project manager for specialized and institutional accreditation of universities.

(III) REPRESENTATION OF THE EDUCATIONAL ORGANIZATION

KazNRTU named after K.I. Satpayev is one of the leading technical universities in the Republic of Kazakhstan.

Created in 1934 as the Kazakh Mining and Metallurgical Institute (KazGMI). By Decree of the Government of the Republic of Kazakhstan dated December 19, 2014 No. 1330 "On the issues of creating a non-profit joint-stock company "Kazakh National Research Technical University named after K.I. Satpayev" University was reorganized into NJSC "KazNITU" named after K.I. Satpayeva.

Currently, the policy of NJSC "Kazakh National Research Technical University named after K.I. Satpayev" is focused on development during 2024-2027. The university has adopted and approved the main regulatory documents defining the Policy in the field of quality assurance culture: the University Charter, Internal Regulations, the Code of Corporate Culture of the Faculty and Students of KazNRTU named after K.I. Satbayev University.

The Quality Policy defines the goals, activities and obligations of the university and the management of KazNRTU.

The strategic goal of Satbayev University is to form a leading research, engineering and educational center, in which, at all levels of higher and postgraduate education, scientific activity and education will be part of a single process aimed at training leaders of a new generation, recognized internationally, whose developments and inventions make a significant contribution to the development of systemically important sectors of the economy of Kazakhstan and the achievement of the UN Sustainable Development Goals.

Collegial discussion by senior management of the development and approval of the Policy and goals in the field of quality, planning of work to achieve goals in the field of quality is carried out by the Academic Council of the university.

Members of the EEC were convinced that the Development Program of the non-profit joint-stock company "Kazakh National Research Technical University named after K.I. Satpayev" for 2023-2027. aims to ensure the effective functioning of the quality management system, the effectiveness of activities within the framework of the implementation of quality policies and goals, a high level of services, as well as timely response to changes in internal and external environmental conditions.

Missions and Quality Policy are posted on the University WEB site, department stands, in the library, in the offices of the heads of the University services, ensuring familiarity with the documents of all employees, teaching staff, students, and employers.

In accordance with 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 09.17.2021. applications for 41 directions to the license dated July 11, 2015 were received. No. KZ56LAA00005304. To date, 212 educational programs are registered in the EUPO register, including 22 innovative EP.

Training of specialists in all educational programs of higher and postgraduate education is conducted in the state and Russian languages. Some disciplines of educational programs are taught in English.

KazNRTU named after K.I. Satpayeva takes an active position in the implementation of the international activities of the university with the aim of integrating into the global educational space and becoming an internationally recognized research educational institution in the field of engineering and technology.

 Experts were convinced that the university has 156 agreements/memoranda with foreign educational institutions and organizations representing 32 countries. Since the beginning of 2022, 11 new agreements have been signed, and 12 agreements under the Erasmus+ program are currently active. KazNRTU develops and strengthens cooperation with more than 120 large scientific and technical centers and educational institutions of advanced foreign countries: USA, China, Great Britain, Israel, Russia, Canada, Germany, Korea, France, Malaysia, etc. As part of

the academic mobility program with the support In the fall semester of 2021, the Ministry of Education and Science of the Republic of Kazakhstan sent 30 students to study for a semester at Polish universities (Adam Mickiewicz University, Silesian University of Technology, Częstochowa University of Technology). Also, as part of the Erasmus + scholarship program, 3 undergraduates undergo semester-long training at European universities - Anhalt University of Applied Science (Germany), Suleman Demirel University (Turkey), Sapienza University (Italy).

Satbayev University implements various academic mobility programs: Erasmus+, Ministry of Education and Science of the Republic of Kazakhstan, under bilateral agreements between partner universities, at the expense of the university itself.

The university has the necessary learning resources that are widely available and meet the interests of students. For all educational programs there are computer classes equipped with modern software. There are also specialized laboratories where students are given the opportunity to conduct experiments and experiments.

The university has 7 institutes, a higher school, a military institute, and 11 scientific laboratories. More than 660 teachers were involved in the educational process, including doctors, candidates of science, PhD, professors, and associate professors.

The Institute of Automation and Information Technologies trains IT specialists in the field of robotics for all sectors of the economy in the following areas: computer science, cybernetics, mathematics and information security. The Institute has six departments and specialized laboratories: scientific and methodological laboratory of applied machine learning (room 1012 of the State University of Culture), 1C laboratory in room 403, Halyk Academy laboratory in room 1014. On the basis of the departments of "Software Engineering" and "Electronics, Telecommunications and Space Technologies" educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" are being implemented. technologies" (GUK building), which were accredited according to Cluster 1.

At the PI department in the direction 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science" classes are taught by 34 teachers, including those with academic degrees and titles (awarded by the Higher Attestation Commission of the Republic of Kazakhstan. All teaching staff have a basic specialized education: in 2020- In the 2021 academic year the staff was 16 people; in the 2021-2022 academic year the staff was 16 people; in the 2022-2023 academic year the staff was 34 people, in 2023-2024 the staff was only 31 people, of which 10 were graduates (32%). At the Department of ET&CT in the field of training 6B07121, 7M07138 – "Space Engineering and Technologies" classes are taught by 31 teachers, including 19 full-time teaching staff, with academic degrees and titles (awarded by the Higher Attestation Commission of the Republic of Kazakhstan) – 16, of which: doctors of science, professors (awarded by the Higher Attestation Commission of the Republic of Kazakhstan) - 1; PhD doctors – 7; candidates of science, associate professors (awarded by the Higher Attestation Commission of the Republic of Kazakhstan) - 8, with an academic master's degree - 4.

During interviews with the management of departments and teaching staff, the annual positive dynamics of applicants to accredited educational programs was revealed.

(IV) DESCRIPTION OF PREVIOUS ACCREDITATION PROCEDURE

Educational programs 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies", 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science" undergo specialized program accreditation in the IAAR for the first time.

(V) DESCRIPTION OF THE EEC VISIT

The work of the EEC was carried out on the basis of the approved Visit Program of the expert commission for international specialized accreditation of educational programs 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies", 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science" in period from March 26 to March 28, 2024.

In order to coordinate the work of the EEC, an on-line introductory meeting was initially held on March 26, 2024, during which powers were distributed among the members of the commission, the schedule of the visit was clarified, and agreement was reached on the choice of examination methods.

To obtain objective information about the quality of the educational program and the entire infrastructure of the university, to clarify the content of the self-assessment report in accordance with the visit program on March 26, 2024. Meetings were held with university vice-rectors in areas of activity, heads of structural divisions, heads of departments, teachers, students, graduates, and employers. A total of 75 university representatives took part in the meetings (Table 1).

Table 1 – Information about employees and students who took part in meetings with the IAAR EEC:

Category of participants	Quantity
Pro-rector's building	4
Heads of structural divisions	13
Directors of institutes	4
Heads of departments	5
Teachers of EP 6B07121 "Space Engineering and Technology", 7M07138 "Space Engineering and Technology", 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science"	10
Students, master's students, doctoral students of EP 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies", 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science"	22
Graduates of EP 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies", 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science"	9
Employers EP 6B06113 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies", 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science"	8
Total	75

During a visual inspection on March 27, 2024, members of the EEC got acquainted with the state of the material and technical base, visited the classrooms of the Department of Software Engineering under EP 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", as well as the department of "Electronics, telecommunications and space technologies" according to EP 6B07121 "Space technology and technology", 7M07138

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"Space technology and technology", building of the State University of Culture.

At meetings of the IAAR EEC with target groups of the university, the mechanisms for implementing the university's policy were clarified and certain data presented in the university's self-assessment report were specified.

In accordance with the accreditation procedure, a survey of 51 teachers and 43 students, including students and master's students, was conducted.

In order to confirm the information presented in the Self-Assessment Report, external experts requested and analyzed the working documentation of the university. Along with this, the expert commission studied the Internet positioning of the university through the official website of the university.

As part of the planned program, recommendations for improving accredited educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies", developed by the EEC based on the results of the examination, were presented at a meeting with management on March 28, 2024.

(VI) COMPLIANCE WITH SPECIALIZED ACCREDITATION STANDARDS

6.1. Standard "Educational Program Management"

The university must demonstrate the development of a goal and strategy for the development of the EP based on an analysis of external and internal factors with the wide involvement of a variety of stakeholders.

Quality assurance policies should reflect the relationship between research, teaching and learning.

The university demonstrates the development of a quality assurance culture.

A commitment to quality assurance must apply to all activities carried out by contractors and partners (outsourcing), including joint/double degree education and academic mobility.

The management of the EP ensures transparency in the development of the EP development plan 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 interested parties.

The management of the EP demonstrates the functioning of the mechanisms for the formation and regular review of the EP development plan and monitoring its implementation, assessing the achievement of learning goals, compliance with the needs of students, employers and society, and making decisions aimed at continuous improvement of the EP.

The management of the EP should involve representatives of stakeholder groups, including employers, students and teaching staff in the formation of a development plan for the EP.

The leadership of the EP must demonstrate the individuality and uniqueness of the development plan of the EP, its consistency with national development priorities and the development strategy of the educational organization.

The university must demonstrate a clear definition of those responsible for business processes within the EP, the distribution of job responsibilities of staff, and the delimitation of the functions of collegial bodies.

The management of the EP ensures 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.

The management of the EP 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.

The management of the EP must implement risk management.

The management of the educational program must ensure the participation of representatives of interested parties (employers, teaching staff, students) in the collegial bodies governing the educational program, as well as their representativeness when making decisions on issues of managing the educational program.

The university must demonstrate innovation management within the EP, including the analysis and implementation of innovative proposals.

The management of the EP must demonstrate its openness and accessibility to students, teaching staff, employers and other interested parties.

The management of the EP confirms completion of training in educational management programs.

The management of the EP should ensure that the progress made since the last external quality assurance procedure is taken into account in preparation for the next procedure.

Evidence

The university develops its strategies and goals for the development of the educational program based on an analysis of internal and external factors. Analysis of the external environment includes holding annual events at the departments in accordance with the messages of the President, as well as studying the labor market demand for qualified specialists. Analysis of the internal environment includes a quality management system, monitoring customer satisfaction and assessing the demand for resources and information systems of the site.

The EEC notes that the main indicators of the university's development are determined in the Strategy and Development Program - Satbayev University for 2022-2026.

Personnel training for accredited EP is carried out in accordance with the state compulsory standard of higher education of the Republic of Kazakhstan dated October 31, 2018 No. 604, also on the basis of license No. KZ56LLA00005304, issued on July 11, 2015.

The university's quality assurance system is based on ISO 9001:2015 standards, with an emphasis on the quality assurance policy, which is widely discussed with management, employees, students and other stakeholders. The current quality assurance policy emphasizes the links between research, teaching and learning, taking into account the national and intra-university context. The concept of quality in university education is publicly available on the university website.

Scientific research at the university is formed taking into account the scientific competence, experience and material and technical base of the departments. Students of accredited programs test their research at various competitions and conferences. As part of their scientific activities, students are highly rated, which is confirmed by awards and scholarships.

Educational programs 7M06102 - "Machine Learning & Data Science" and "8D06102- Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" are available on the university website and are focused on the formation of scientific and professional competencies, providing in-depth theoretical knowledge and practical skills in the space industry and areas such as data science and artificial intelligence, ensuring high-quality implementation of scientific research, knowledgeable of the latest world achievements, research problems and prospects for the development of the IT industry, space industry and are aimed at research and educational training of master's and doctoral students.

The strategic goal of EP 7M06102, 8D06102, 6B07121, 7M07138 is to provide highly qualified scientific and scientific-pedagogical personnel for the science industry, higher education, the IT country and the space industry.

A graduate of the Department of Electronics, Telecommunications and Space Technologies (ET&CT) in the educational program "Space Engineering and Technologies" must follow the goals and objectives of the educational program, namely: training a new competitive generation of technical specialists in the field of space image processing for the labor market, proactive, able to work in a team, with high personal and professional competencies; integration of educational and scientific activities; establishing partnerships with leading universities near and far abroad in order to improve the quality of education to support technical and cultural ties; expanding relations with customers of educational services and employers in order to determine the requirements for the quality of training of specialists, conducting courses, seminars, master classes, internships, and practical training.

Graduates of the educational programs "Space Engineering and Technology" and "Machine Learning & Data Science" work in the telecommunications and space industries, in IT companies, and continue their scientific and teaching activities in research institutes and higher educational institutions.

The departments host events, scientific seminars, scientific schools, conferences with the participation of undergraduates and doctoral students.

Management of the educational program according to the quality management system, which complies with the requirements of the international standard ISO 9001-2015, in particular, is carried out by the "Educational Program Development Plan", "EP Development Program".

The development and management of educational programs is carried out using a process approach in accordance with the Regulations on the development of educational programs. The process of developing a plan for the development of university educational programs includes an analysis of the functioning of the programs, the real position of the leading specialized university, its personnel and scientific potential, as well as the demand for graduates in the country as a whole. The university pays attention to the modernization of higher education and the profile of its educational programs taking into account the needs of the labor market and the requirements of the economy. An analysis of accredited educational programs showed a high percentage of

graduates' employment, which indicates their demand in the labor market. The trend toward an increase in the number of applicants according to the EP data indicates stable interest on the part of students, master's students, and doctoral students.

The implementation of the development plan for educational programs is based on the principles of identifying their demand, the availability of necessary resources, the correspondence of learning outcomes to competencies, as well as the adequacy of teaching methods and program goals. The relevance of the EP is determined through consultation with representatives of organizations, enterprises and other interested parties, as well as teachers who take a leading role in determining control parameters for each discipline in the program. The quality assessment of the implementation of the development plan for educational programs is carried out on the basis of semi-annual and annual reports of the teaching staff, as well as the activities of departments in educational, educational, methodological, scientific and educational areas. Control is carried out at various levels of management: head of the department, director of the institute, heads of structural divisions, vice-rectors and rector of the university.

Monitoring the development plan for educational programs includes collecting reports, checking the readiness of departments for the academic year, examining the quality of programs and support, surveying students, graduates and employers. Reports and reports are considered at department meetings, and are also provided annually to the director of the institute and vice-rectors.

The quality policy is established to serve as a guide for the university. It defines the desired results and facilitates the organization's use of resources to achieve these results. The quality policy provides the basis for developing and reviewing quality objectives.

The experts were convinced that the University has an effective system for monitoring the quality of education, as a result of which an internal corporate management environment has been created that allows employees and teaching staff to be fully involved in the process of achieving the University's goals. SU performance evaluation includes students' opinions on the quality of teaching, and satisfaction with academic and extracurricular activities.

The mobile application "SU Solutions" (App Store, Google Play) was demonstrated, the main purpose of which is to regularly study the public opinion of students and employees. Monitoring is carried out by collecting ideas and problems encountered.

Code of academic honor for students of KazNRTU named after. K.I. Satpayeva defines a system of ethical rules for the behavior of a student at Satbaev University during the period of study, establishes the boundaries of his personal responsibility.

In order to ensure quality in the implementation of joint programs, special attention is paid to the selection of a foreign partner university, which must meet the evaluation criteria and have authority in the international market of educational services.

One of the measures to improve modern educational processes is the existence of a joint double-degree program, which provides for graduates receiving diplomas from two different universities in different countries, as well as exchange through the channel of scientific and technical cooperation.

In particular, an agreement was concluded on the creation of a joint double degree program with the Tashkent Kimyo International University (Tashkent, Uzbekistan). Currently, six students have been accepted for the 1st year according to the 2+2 scheme, two years of study in Uzbekistan and two years of study in Almaty, at KazNTU.

In November 2023, a cooperation agreement was signed with the Hong Kong City University CityU, China, Hong Kong, to open a branch on the basis of K.I. KazNRTU. Satpayev on training highly qualified specialists in areas such as engineering and artificial intelligence in undergraduate and graduate programs, as well as on joint scientific research.

Accredited educational programs take advantage of outsourcing opportunities in the form of research institutes, technology parks, engineering laboratories, foreign partner universities and consultants are involved: institutes of KTIT LLP, Ionespheres JSC, Physicotechnical Institute JSC and NTsKIT JSC.

To train scientific personnel in the accredited EP "Machine Learning & Data Science", partnerships have been established within the framework of the Erasmus+ project 610166-EPP-1-2019-1-SK-EPPKA2-CBHE-JP: Zilina University (Slovakia), Lodz University (Lodz, Poland), Lorraine University (Nancy, France). Close cooperation with other partner universities is also used: Novosibirsk State University, Moscow State University, Riga Technical University, etc. Research Institute - Institute of Information and Computational Technologies, KMG Engineering LLP is a place for research and internship of master's and doctoral students in accredited EP. Foreign scientists are invited to conduct scientific seminars and lectures for young scientists: Vitaly Levashenko, Elena Zaitseva (University of Zhilina), Nikolai Brenzei, Dmitry Sokolov (University of Nancy), Matheus Mendes (Coimbra, Portugal.

Current practitioners are involved in the educational process. For example, according to EP 6B07121 and 7M07138 - "Space Engineering and Technologies", employees of the Institute of Space Engineering and Technologies DTOO, candidate of technical sciences: Inchin A.S., Chairman of the Board of JSC NTsKIT - Nurguzhin M.R., Vice President JSC "NCIT" - Bekmukhambetov B.E.

EEC notes that at KazNRTU named after K.I. Satpayev systematically analyzes the state and future development of industrial sectors of the Republic of Kazakhstan in order to adjust the content of the EP and the compliance of trained specialists with the requirements of the labor market. The results of the analysis are used to develop proposals for strategic planning for the development of institutes, departments and the university as a whole.

All interested parties are involved in the formation of accredited EP: teaching staff, students, employers. The model for training a specialist in accredited educational programs is focused on reflecting in the educational process the sphere of future professional activity of students, their working conditions, the necessary knowledge and skills, skills and personality traits.

The departments of ETiCT and PI systematically monitor the state of science and practice, which allows timely changes to be made to accredited EPs. Monitoring is carried out by the faculty of the department and their proposals are submitted to the meeting of the department and the Academic Council, where the need to change the content of the curriculum and disciplines is determined. At the same time, the wishes of students and employers, which are identified during their questioning, are also taken into account; the opinion of employers is taken into account through the examination of curricula by the partner enterprise and constant contacts with employer enterprises.

The expert commission established that the collegial governing bodies of the educational program include representatives of employers, teaching staff, and students, which is confirmed by the minutes of department meetings and approval sheets in the EP. The composition of management bodies is selected or appointed in accordance with the regulatory documents of the Ministry of Education and Science of the Republic of Kazakhstan and the University. Each member of the collegial body has the right to take part in the discussion and expresses his opinion by voting when making the final decision.

The participation of employers, students and teaching staff of the department in the development of EP is also regulated by the following events: invitation to a meeting of the department; reviews from employers based on the results of practical training, research, scientific internships, reviews of graduates; reviews of the EP from representatives of organizations - potential employers. Students can give their suggestions on the teaching of disciplines and the inclusion of topics. Review of EP is carried out by employers and stakeholders to identify real production requests formulated by employers and other stakeholders. The formation of professional competencies among graduates of EP, ensuring their competitiveness in the labor market, occurs through active interaction with major employers in the organization of practice bases, development of curricula, assessment of study results and employment. The university has developed and operates a documented procedure for DP KazNTU 714. Questionnaire. Assessment of consumer satisfaction, which reflects the rules, forms and timing of activities to monitor consumer satisfaction (feedback). The university provides annual advanced training for teachers

and heads of departments. During the period 2020-2023, a series of training webinars and master classes were organized, including technologies for conducting distance education, conducting online exams, improving teaching skills, developing educational programs, etc.

The educational program management system is based on the principles of adequate response of the university and its structural divisions to external challenges that require flexibility, adaptability and transparency. It is also based on network interaction in the strategic and operational management of internal resources of departments, institutes and the university. The educational program management system includes management of the working curriculum based on modular training, management of the schedule taking into account individual educational trajectories, and management of teams and groups of teachers.

The collegial bodies involved in the development of educational programs include: the Board of Directors, the Rectorate, the Academic Council and the Academic Council at the level of the university, departments, as well as the institute council and the quality assurance commission. The participation of representatives of interested parties is carried out through participation in these bodies.

Analytical part

The implementation of educational programs and the strategy for their development is carried out in accordance with the mission and goals of the university.

External experts are heads of enterprises who have extensive experience in their specialty and have made a significant contribution to the development of relevant industries in the country. The management of the EP ensures the participation of representatives of employers, teaching staff, students and other interested parties in the collegial management bodies of the EP.

As part of the interview with the heads of structural divisions, heads of EP and teaching staff, the participation of all stakeholders in the management procedures of the EP was confirmed, namely, the minutes of the Academic Councils of the department describe discussions on making changes based on the recommendations of stakeholders, students and teaching staff with the further submission of the educational program for approval by the Scientist Institute Council, University Academic Council.

According to the results of the teaching staff survey, the indicator "Evaluate the involvement of teaching staff in the process of making management and strategic decisions", there is an active involvement of teaching staff in the process of annual updating of the content of the educational program, with the following indicators: Very good - 16 people. (31.4%); Good - 31 people. (60.8%); Relatively bad – 2 people (3.9%); Poor - 0 people (0%); Very bad - 2 people. (3.9%).

Also, according to the indicator "Assess how well the educational program in terms of content and quality of implementation meets the expectations of the labor market and employers," there is a positive trend with the following indicators: Very good - 26 people. (51%); Good - 22 people. (43.1%); Relatively bad - 2 people. (3.9%); Poor - 1 person (2%); Very bad - 0 people. (0%).

In the Development Plan of EP 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" there is no section on establishing competitive or distinctive features of EP to determine their uniqueness , as well as the individuality of EP development plans, their consistency with national priorities in the relevant fields of knowledge and the Strategic Development Plan of the University, as well as the results of SWOT analysis in relation to the EP.

We note that the university has defined general parameters for the effectiveness of the implementation of EP, which are not reflected in their development plans. In addition, when describing them in the development plan, it is advisable to introduce additional indicators of the effectiveness of the implementation of the EP, taking into account its industry focus and level of education (bachelor's, master's and doctoral studies).

EP's strengths have not been identified
EEC recommendations

– EP coordinators should, in the structure of the EP development plan, in addition to general performance indicators, include specialized ones related to the specifics of such an EP, its goals and objectives. Clarify numerical indicators taking into account their units of measurement and accounting method (cumulative total or quantity per year). Develop an action plan to achieve the performance indicators specified in the EP Development Plans, establishing responsible persons, implementation deadlines, ensuring transparency in the implementation of the EP. Carry out annual updating of Development Plans, taking into account the necessary corrective actions to achieve planned indicators based on interim reports on the implementation of the development plan. Deadline – until 08/01/2024.

– In the structure of the EP Development Plan, the heads of the EP should provide a section on establishing the competitive or distinctive features of the EP to determine their uniqueness, as well as the individuality of the EP development plans, their consistency with the national qualifications framework and the University Development Program, as well as the results of the SWOT analysis in relation to the EP. Deadline – until 08/01/2024.

– EP managers should include in the structure of the EP development plan (for all levels) a section related to identifying the risks of implementing educational programs, developing an action plan to minimize them, as well as annual reporting on the implementation of the development plan for a certain academic period. Deadline – until 08/01/2024.

EEC conclusions based on the criteria:

According to the "Educational Program Management" standard, educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" **have 14 satisfactory positions and 3 positions require improvements**.

6.2. Information Management and Reporting Standard

The university must ensure the functioning of a system for collecting, analyzing and managing information based on modern information and communication technologies and software.

The management of the EP demonstrates the systematic use of processed, adequate information to improve the internal quality assurance system.

The management of the EP demonstrates the presence of a reporting system that reflects the activities of all structural divisions and departments within the EP, including an assessment of their performance.

The university must determine the frequency, forms and methods of assessing the management of the educational program, the activities of collegial bodies and structural divisions, and senior management.

The university must demonstrate a mechanism for ensuring the protection of information, including identifying responsible persons for the accuracy and timeliness of information analysis and data provision.

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 it.

The management of the EP must demonstrate the presence of communication mechanisms with students, employees and other interested parties, including conflict resolution.

The university must ensure the measurement of the degree of satisfaction of the needs of students, teaching staff and staff within the EP and demonstrate evidence of eliminating the identified deficiencies.

The university must evaluate the effectiveness and efficiency of activities in the context of EP.

Information collected and analyzed by the university within the framework of the EP must take into account:

− key performance indicators;

− dynamics of the student population in terms of forms and types;

− level of academic performance, student achievement and expulsion;

− students' satisfaction with the implementation of the EP and the quality of education at the university;

− availability of educational resources and support systems for students;

− employment and career growth of graduates.

Students, teaching staff and staff must document their consent to the processing of personal data.

The management of the EP should help provide the necessary information in the relevant fields of science.

Evidence

The commission found that at KazNRTU named after K.I. Satpayev has implemented and operates systems for collecting, analyzing and managing information using modern information and communication technologies and software. These systems cover various aspects of university activities, including management of the official website of the university, exchange of information between structural divisions, management of academic information using AIS "SU", integrated

library information system, etc.

The commission also notes that Satbayev University has its own development - the Educational Portal sso.satbayev.university, which is a single entry point for students and teaching staff, providing access to the educational process. Note that the DataCenter division carries out analytics and maintains statistics, receives a copy of the educational process data and processes the received data. The collected information allows, based on structural analysis and quantitative methods, to develop measures aimed at ensuring the quality of the educational program.

The university has demonstrated the presence of communication mechanisms with students, employees and other interested parties, including conflict resolution through appeals through the SU Solution system, which is considered at the level of the university's senior management. Thus, the management of the educational process is based on collegial decisions of the university's academic community, taking into account the opinions of the students' environment.

During interviews with department management, it turned out that the university's corporate governance is based on the accountability of university departments and open procedures for employee certification, competitive selection of new employees, and the presence of reservists.

It has been established that each student, undergraduate, doctoral student and teacher has a personal page on the university's educational portal, which is accessed by entering a login and password, which demonstrates a mechanism for ensuring information security.

Focus on meeting the needs of stakeholders is ensured by conducting systematic surveys.

The results of questionnaire surveys of teaching staff "Satisfaction of teaching staff with the university" and students "Faculty staff through the eyes of a student" were presented to the attention of the commission, which ensures the policy in the field of quality, and also allows for management analysis. The results of the analysis of the degree of satisfaction of the needs of students, teaching staff of EP and staff are prescribed in the Management Analysis with recommendations for improvement and the adoption of appropriate decisions.

We also note that part of the functioning and development of the quality management system of NAO KazNRTU named after K.I. Satpayev is a Management Analysis, which is carried out annually at various levels of management in order to assess the degree of functioning and effectiveness of the university's quality management system, taking into account SU's quality policy and goals as part of the preparation of a Management Analysis report by management.

When conducting interviews with the heads of the EEC departments, we were convinced that each employee (including teaching staff), upon employment, along with personal documents, provides HR with a signed consent to the collection and processing of personal data, as well as to the protection of their personal data, in ways that do not contradict the legislation of the Republic of Kazakhstan.

Also, during the interview with the teaching staff, it became known that in master's and doctoral programs, according to the academic calendar and IUP, master's and doctoral students provide a semester report and report at a department meeting on the results of research work on the topic of dissertations. Also, the results of research work are reported at various conferences, published in scientific journals and collections of works, and introduced into the educational process. At the end of each academic semester/year, faculty members hear reports on educational, educational, methodological, scientific and social-educational work at department meetings. At meetings of the department of ETiCT, PI, the results of the first and second certification and examination sessions are analyzed. Based on the results of the analysis, decisions are made. Also, on the teacher's individual page on the portal at the end of the academic year, teaching staff fills out a report on the implementation of the IEP, as a result of which a report on the work of the department is generated. Based on the discussion of teaching staff reports, corrective actions are applied in various areas of the department's work, indicating deadlines and actions to eliminate shortcomings and improve activities.

Analytical part

The university ensures the functioning of a system for collecting, analyzing and managing

information based on the use of the university's educational portal.

It has been established that the annual reports of the department are an indicator of the quality of teaching disciplines and progress during the academic semester, as well as observations of the negative dynamics of quantitative indicators of the progress of students, undergraduates, and doctoral students, which helps to identify possible risks that will be taken into account when developing new educational programs, which has its effect reflected in the minutes of the department and the demonstrated annual reports of the department. In turn, annual reports are implemented on the basis of teaching staff reports. At the Academic Council of the Institute, heads of departments present a report on the semi-annual/annual results of the department's activities in accordance with the established form. At the end of the academic year (before June 1 of the current academic year), the management of the EP submits an annual report prepared in accordance with F KazNITU 502-01 to the Corporate Development Department for the SU summary report on Management Analysis.

The results of an anonymous survey of the teaching staff of the Satpayev Kazakh National Technical Research University cover 40 indicators reflecting needs, interests, career opportunities, degree of academic freedom, working conditions, incentives, support, preferences. In general, positive dynamics prevail.

The university demonstrated monitoring, assessment and reporting of the degree of satisfaction of the needs of teaching staff, staff and students within the framework of EP 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies "

To improve the internal quality assurance system, systematic annual questionnaire surveys "Satisfaction of teaching staff with the university" and students "Teaching staff through the eyes of a student", "Student satisfaction with the university" are conducted.

The presence of mechanisms for communication with students, employees and other interested parties, including conflict resolution, is carried out through the SU Solution system; appeals are considered at the level of the university's top management.

The university demonstrated the availability of educational resources through widespread connection via Wi-Fi to library information resources through online catalogs, virtual services, reference, consulting and educational services based on reading rooms and subscriptions, regular information, and satisfaction of educational and leisure needs. The university website provides information about the activities and resources of the library, there is online access to the Electronic Catalog, the "Electronic Library", and foreign information electronic resources under the National License - "Clarivate Analytics" - Web of Science database; "Elsevier" - Scopus database, electronic library systems: ELS IPRbooks, ELS of the Lan publishing house, distance learning portal "Politech Online". The availability of educational resources helps to provide the necessary information in relevant fields of science.

The university strictly regulates the procedure for ensuring the protection of information, indicating the responsible persons.

The effectiveness and efficiency of activities in the context of EP includes annual reporting of departments, surveys of stakeholders, personnel policies, availability of educational resources and support systems for students.

EP's strengths have not been identified

EEC recommendations: not available

EEC conclusions based on the criteria:
According to the "Information Management and Reporting" standard, educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" **have 17 satisfactory positions.**

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

The university must demonstrate the existence of a documented procedure for developing EP and its approval at the institutional level.

The university must demonstrate compliance of the developed EP with the established goals and planned learning outcomes.

The management of the educational program must determine the influence of disciplines and professional practices on the formation of learning outcomes.

The university demonstrates the presence of a graduate program of the EP, which describes learning outcomes and personal qualities.

The qualification awarded upon completion of the EP must be clearly defined, explained and correspond to a certain level of the NQF, QF-EHEA.

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 by each graduate.

The management of the EP must ensure that the content of academic disciplines and learning outcomes correspond to each other and to the level of study (bachelor's, master's, doctoral studies).

The management of the EP must demonstrate the conduct of external examinations of the EP.

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.

The management of the EP must demonstrate the uniqueness of the educational program, its positioning in the educational market (regional/national/international).

An important factor is the ability to prepare students for professional certification.

An important factor is the presence of joint (s) and/or double-degree EP with foreign universities.

Evidence

The process of improving the quality of EP at KazNRTU is aimed at improving the structure and content of programs, their implementation and implementation. The assessment of the quality of educational programs is carried out on the basis of an analysis of curricula, control and assessment documentation, internal regulations governing the implementation of educational programs, individual curricula, as well as the results of a survey of students and the opinions of employers. The procedure is carried out annually at the end of the academic year, and the results are discussed at meetings of the collegial bodies of the university, which make appropriate decisions to ensure the quality of education, which is confirmed by the minutes of department meetings.

The university has established a procedure for approval, periodic review and monitoring of educational programs.

Accredited educational programs based on compulsory and elective components allow the formation of an individual educational trajectory for students. The choice of learning path is made by students independently, but with the help of consultations, conversations with advisers, leading teachers of the departments of ET&CT, PI, graduates, and employers. An individual curriculum is formed for each student for the academic year.

Before students choose a specialization, advisors, leading teachers of the Department of ETiCT, PI conduct explanatory conversations on each specialization. The approach to choosing specializations is consistent with the requirements of the Professional Standard "Space Engineering and Technologies" (approved by order of the Minister of Education and Science of the Republic of Kazakhstan dated May 5, 2020).

The Government Decree approved the Development Program for 2023-2027. with a new mission aimed at achieving the goals and objectives of the national education system and integration into the international education system, consistent with available resources, defining long-term priorities for the development of the university as a research university.

The EEC is convinced that in order to achieve this goal, the University pursues a constant policy of integrating the educational process and research activities, developing students through research activities and developing professional competence and ethical standards in students through the use of its own scientific results in teaching educational programs agreed with employers, strategic partners of the university.

The development of educational programs is carried out on the basis of the "National Classifier of the Republic of Kazakhstan. PB RK-01-2017", taking into account the competencies

defined for the selected professions. The implementation of educational programs is carried out in accordance with the State Educational Standards, PS, renewal, EP development plan and stakeholder involvement.

The commission confirms that the procedure for developing and approving an educational program includes stages such as development by graduating departments, discussion of the feasibility of opening a program at a department meeting, and transfer to the Academic Council of the institute.

The state of science and practice is systematically monitored, which allows timely changes to be made to the EP. Monitoring is carried out by the faculty of the department and their proposals are submitted to the specialty council, which determines the need to change the content of the curriculum and disciplines.

Analytical part

The university strictly regulates and documents the procedures for developing EP and their approval at the institutional level. There is a good connection and influence of disciplines and professional practices on the formation of learning outcomes.

On the website of the university, Department of Software Engineering, a model of the 2022 graduate is presented, describing learning outcomes and personal qualities. This document should be updated by revising it to take into account new trends or by re-approving it and reflecting it in the appropriate minutes of the department meeting.

Analysis of the structure and content of accredited educational programs does not provide for the preparation of students for professional certification within the framework of educational programs EP 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and technology" in accordance with professional standards: Software Testing, Software Maintenance, etc. This does not allow us to conclude that there is an opportunity for graduates to be prepared to undergo such certification during employment or confirmation of qualifications, if necessary.

Analysis of the structure and content of the EP Development Plan does not reflect the advantageous features of the EP to determine uniqueness, consistency with the national qualifications framework and the University Development Program, and does not correlate with the results of the SWOT analysis in relation to the EP.

No strengths identified

EEC recommendations

– In the structure of the EP Development Plan, the heads of the EP should provide a section on establishing the competitive or distinctive features of the EP to determine their uniqueness, consistency with the national qualifications framework and the University Development Program, as well as the results of the SWOT analysis in relation to the EP. Deadline – until 08/01/2024.

EEC conclusions according to the criteria: (strong/satisfactory/suggests improvement/unsatisfactory)

According to the standard "Development and approval of an educational program", educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" **have 11 satisfactory positions and 1 a position in need of improvement.**

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

The university must ensure a revision of the structure and content of the EP, taking into account changes in the labor market, the requirements of employers and the social demands of society.

The university must demonstrate the existence of a documented procedure for monitoring and periodic evaluation to

achieve the goal of the EP and continuous improvement of the EP.

      Monitoring and periodic evaluation of the EP should consider:

      − the content of the program in the context of the latest achievements of science and technology in a specific discipline;

      − changes in the needs of society and the professional environment;

      − workload, performance and graduation of students;

      − effectiveness of student assessment procedures;

      − needs and degree of satisfaction of students;

      − compliance of the educational environment and the activities of support services with the goals of the EP.

      The management of the EP must publish information about changes to the EP and inform interested parties about any planned or taken actions within the OP.

      Support services should identify the needs of various groups of students and the degree of their satisfaction with the organization of training, teaching, assessment, and development of EP in general.

Evidence

The evidentiary part is formed based on the results of assessing the quality of the OO and/or EP in accordance with the criteria of the Standard. This part provides evidence of the implementation of the standard's criteria in the form of links to written documents (normative and analytical documents, self-assessment report, survey results, etc.), and oral evidence (interview results) and any other available evidence.

KazNTU University presented a system covering monitoring, analysis and improvement of educational programs. The system strives to demonstrate compliance of educational services with standards, interests of stakeholders and the quality management system. The goal is to continually improve program effectiveness.

Monitoring is carried out on the basis of the University Development Program, which provides objective analysis through external and internal control. The university's educational programs are clearly defined and correspond to the university's mission, qualification system and professional standards. Programs are updated taking into account changes in the labor market, employer requirements and public demands. Efficiency is assessed, among other things, through the performance of students. The university uses the SU information system to track student progress, record achievements and monitor knowledge.

Improving the quality of EP is facilitated by constant monitoring of the implementation of the EP development plan, the results of which are considered without fail at meetings of the academic councils of institutes, the Educational and Methodological Council and the Academic Council of the university.

Monitoring students' personal growth includes interaction with academic group advisors. This allows you to control and develop the value orientations of students. Additional disciplines are aimed at shaping the personal development of students. KazNTU University responds to the needs of time and employers, introducing new disciplines and annually updating the content of existing educational programs. Examples of such updates include the addition of disciplines using modern computer technologies and frameworks.

In general, we note that KazNTU University strives to improve educational programs by introducing a monitoring and quality management system.

The department gave an example: in light of the widespread use of computer technologies, artificial intelligence and other innovations in modern space engineering, according to the recommendations of employers, changes were made to the list of elective disciplines of the educational program "Space Engineering and Technologies". New disciplines: "Intelligent micro and nanosensor devices", "Design of nanosatellites", "Theory of solving inventive problems in the space industry".

Elective disciplines are included in the program taking into account the opinions of employers, the personnel potential of the university and the educational needs of students. Also, in accordance with the recommendations of employers, the disciplines "Applied Machine Learning & Deep Learning", "Natural Language Processing" were included in the EP "7M06102-Machine Learning & Data Science"; in the specialty "8D06102- Machine Learning & Data Science", discipline "Machine Learning & Deep Learning", "Advanced Neural Networks Models". During the 2022/2023 academic year, meetings were held with employers A.T. Konysbaev. - President of the Association for the Development of the Information Technology Park "Alatau IT city",

Mamyrbaev O.Zh. - Deputy General Director of the Institute of Information and Computing Technologies of the KN MES RK, Nurseitov D.B. "KMG Engineering, Akylaev Zh. Halyk Bank, Herzen E.A. Otbasy Bank, while the wishes of stakeholders were taken into account when developing the EP "7M06102-Machine Learning & Data Science" and "8D06102-Machine Learning & Data Science".

Surveys of students and graduates, as well as the participation of employers in determining the goals of specialist training, provide feedback and are important for the continuous improvement of educational programs.

Internal audit and performance review processes, together with the involvement of external stakeholders, ensure that programs are constantly updated in accordance with labor market and public demands.

The expert commission found that the changes made to the EP were not published in open resources, such as the university website, pages on social networks, in order to inform all interested parties.

There is no documented evidence of assessing and monitoring the effectiveness of student assessment procedures.

Analytical part

The University systematically monitors and makes timely corrections of educational programs.

It has been established that conducting interviews, collaborating with stakeholders, analyzing annual reports of teaching staff and departments allows making adjustments to the names of disciplines, introducing new disciplines taking into account the requirements of the time, the opinions of stakeholders, students and teaching staff. Thus, in accordance with the requirements of employers and strategic partners, the university is modifying the educational program to ensure its competitiveness and relevance in the educational services market.

However, the expert commission found that the changes made to the EP were not published in open resources, such as the university website, pages on social networks, in order to inform all interested parties.

To study the needs and opinions on the quality of graduates' training, a survey is conducted among representatives of all interested parties (students and teaching staff).

During the interview, regarding the standard "Continuous monitoring and periodic evaluation of educational programs," questions were raised such as satisfaction with the quality of the educational program as a whole, the Quality of educational programs in the EP, Informing students about courses, educational programs and the academic degree received, etc. According to the data received Positive dynamics are observed in the survey.

The University strictly regulates and describes the processes of changing the EP through consideration at meetings of the Academic Councils and Scientific Councils, however, there is no relevant information on open resources.

No strengths identified

EEC recommendations

– Heads of EP should post information about changes made to EP 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" on open resources, such as the university website , pages on social networks, in order to inform all interested parties. Deadline – until 08/01/2024.

EEC conclusions according to the criteria: (strong/satisfactory/suggests improvement/unsatisfactory)

According to the standard "Continuous monitoring and periodic evaluation of educational programs", educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies",

7M07138 "Space Engineering and Technologies" **have 11 satisfactory and 1 position needs improvement.**

6.5. Standard "Student-Centered Learning, Teaching and Assessment"

The management of the educational program must ensure respect and attention to different groups of students and their needs, providing them with flexible learning paths.

The management of the EP must provide teaching based on modern achievements of world science and practice in the field of training, the use of various modern teaching methods and assessment of learning outcomes that ensure the achievement of the goals of the EP, including competencies and skills in performing scientific work at the required level.

The leadership of the EP must determine mechanisms for distributing the educational load of students between theory and practice within the EP, ensuring the mastery of the content and achievement of the goals of the EP by each graduate.

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

The university must ensure that the procedures for assessing learning outcomes comply with the planned results and goals of the educational program.

The university must ensure consistency, transparency and objectivity in the mechanism for assessing the educational results of the EP, publishing criteria and assessment methods in advance.

Evaluators must be proficient in modern methods of assessing learning outcomes and regularly improve their skills in this area.

The management of the educational program must demonstrate the presence of a feedback system on the use of various teaching methods and evaluation of learning outcomes.

EP management must demonstrate support for student autonomy while providing guidance and assistance from the teacher.

The management of the educational program must demonstrate the existence of a procedure for responding to student complaints.

Evidence

KazNRTU strives to meet the diverse needs of students, including working youth, student-athletes actively involved in community organizations, students with special educational needs and international students. The needs of each group are regularly identified during supervision hours and individually upon admission. The university is actively developing inclusive education, improving the infrastructure, providing on the educational portal a specialized office "Center for Support and Accompaniment of Inclusive Education".

Expanding the classroom capacity and providing special services, such as language training for international students, highlight the university's adaptive approach to the diverse needs of the student community. The active involvement of students in the development and improvement of educational programs, as well as the provision of a trilingual environment, maintains the openness and flexibility of the university in accordance with modern requirements of education and society.

KazNTU University actively cares about meeting the individual needs of students through independent work classes with teachers (SROP). For students with disabilities, specialized adaptation disciplines are provided within the framework of basic educational programs for individualized correction. An important element of support is providing additional time to prepare for exams.

Distance learning at Satbayev University is intended for students who do not have the opportunity to study face-to-face, as well as for working professionals who have already achieved success in their careers and want to improve their knowledge.

Currently, the university's distance learning platform Polytechonline is one of the best in the country and provides educational services to more than 10,000 students. The Polytechonline database contains multilingual courses that are available to students around the clock and without limiting the number of views.

The PolytechOnline platform contains not only a database of 1,524 video courses and 18,810 video files, but also has an interactive interface and full-cycle functionality for students, teachers, administrators, as well as integration with all external systems of the University.

Information about the presence of circles is presented: the department of E&CT is closely connected with the engineering laboratory; the department has a laboratory room for "Circuit design and modeling of modern electronic devices" (SPiMSEU), room 1002, State University of Culture. Also, at the department there is a laboratory room "Center for Testing and Control of Nanosatellites" (TSiUN) Auditorium 618, State University of Culture.

Within the Department of Software Engineering, the scientific and methodological laboratory of applied machine learning was presented to the expert commission in February 2022,

created on the basis of the ERASMUS+ project Advanced Center for PhD Students and Young Researchers in Informatics (ACeSYRI). The main goal of this laboratory is to provide opportunities for research and development of methods for applying machine learning to solve practical problems in various industries.

To ensure successful teaching of disciplines, teachers of the department develop textbooks, teaching aids and methodological instructions for conducting classes in the state, Russian and English languages, which, after a certain period of time, are reviewed, discussed and approved by the department and the methodological council of the institute. The output of the publications is presented in the self-assessment report.

University teachers improve their qualifications and participate in international conferences and seminars held in Kazakhstan and abroad. Participate in practical seminars and specialized exhibitions. The self-assessment report provides valid links to certificates.

The university curriculum is closely related to the competencies, goals and objectives presented in the modular educational programs. Assessment of the degree to which students have mastered competencies and skills occurs throughout the entire educational process, including current, midterm and final monitoring of progress. Monitoring information is available to students through the Student Portal, including academic performance, attendance, exam results, schedule and other relevant information.

The final grade is calculated only if the student has positive grades both in the admission rating (50% and above of the admission rating) and in the final control (50% and above of the final grade).

The assessment of current performance is 60% of the final assessment of knowledge in the discipline, and the examination assessment is 40% of the final assessment of knowledge in the discipline.

In general, the results of the survey of the department of ET&CT, PI show students' satisfaction with the educational process at the university. However, the presented results show that there are still reserves for improving the quality of educational services for this category of students. Sociological monitoring plays an important role in analyzing the current state of the educational program, identifying its resources, characterizing the infrastructure, determining its sufficiency for the optimal organization of the learning process for students, undergraduates and the effective work of teaching staff.

Student surveys concern various aspects of the educational process, including learning conditions, organization of the educational process, teaching methods used, technical equipment, information technology and other aspects. The information obtained is used to continuously improve the quality of training.

The feedback system with university governing bodies includes various channels, such as ballot boxes for collecting written requests, the rector's blog on the university website, as well as the procedure for applying through the dean's office. Such measures are aimed at ensuring an open dialogue between the educational institution and students, as well as ensuring an effective response to possible problems and needs of students. The University implements a system for processing student complaints while ensuring anonymity.

Analytical part

The university ensures objectivity in assessing the knowledge and degree of development of students' professional competencies. Due to the fact that cumulative information about academic performance is accumulated in an automated information system, therefore, the objectivity of knowledge assessment is ensured.

Student surveys concern various aspects of the educational process, including learning conditions, organization of the educational process, teaching methods used, technical equipment, information technology and other aspects. The information obtained is used to continuously improve the quality of training.

During the survey conducted regarding the standard "Student-centered learning, teaching

and assessment of academic performance," 58 indicators of satisfaction and agreement were presented to the attention of the EEC.

For example, the indicator "Support with educational materials during the learning process" has the following ratings: Completely satisfied - 29 people. (67.4%), Partially satisfied – 13 people. (30.2%), Partially dissatisfied – 1 person. (2.3%), Not satisfied - 0 people. (0%), Difficult to answer - 0 people. (0%). In general, the obtained assessments correlate between the following indicators: Completely satisfied >50%, Partially satisfied - from 9% to 30%, Partially dissatisfied - from 0% to 4.7%, Dissatisfied - from 0% to 4.7%, Undecided answer – from 0% to 4.7%.

The university has an established system for responding to complaints and recommendations from students and parents. Conducting inspections and resolving disciplinary issues after gross violations are identified demonstrate the principle of responsibility and adherence to standards. The university strives to create an environment focused on the needs and interests of students.

It is important to note that within the master's program, Satbayev University offers general programs focused on research activities and integrated interdisciplinary specialized programs designed for engineers and practicing managers. At the same time, all the necessary information on the choice of educational programs for master's and doctoral studies, comprehensive testing, and enrollment is presented in detail on the university website.

The current direction of Satbayev University is the development of distance education, implemented on the University platform Polytechonline, on which more than 10,000 students are already registered. This platform uses advanced interactive information and communication technologies in the field of teaching methods in areas of training, and also has integration with all external University systems necessary for the distance educational process.

Strengths

- The presence of a support system for applicants to prepare them for entrance examinations at the university's master's and doctoral programs, the effective use of PolytechOnline's own educational distance education portal for training, including for an inclusive society. The university actively uses automated information systems (AIS), which provide ample opportunities for analyzing various aspects of the educational process.

EEC recommendations: not available

According to the standard "Student-centered learning, teaching and assessment of performance," educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" **have 1 strong and 9 satisfactory positions.**

6.6. Standard "Students"

The university must demonstrate a policy for forming a student population and ensure transparency and publication of procedures regulating the life cycle of students (from admission to completion).

The management of the educational program should provide for special adaptation and support programs for newly admitted and foreign students.

The university must demonstrate compliance of its actions with the Lisbon Convention on Recognition, including the presence and application of a mechanism for recognizing the results of academic mobility of students, as well as the results of additional, formal and informal learning.

The university must provide opportunities for external and internal academic mobility of students, as well as assist them in obtaining external grants for training.

The university should encourage students to self-education and development outside the main program (extracurricular activities).

An important factor is the presence of a mechanism to support gifted students.

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.

The university must provide students with places of practice, demonstrate a procedure for promoting the employment of graduates, and maintaining contact with them.

The university must demonstrate a procedure for issuing documents to graduates confirming the qualifications obtained, including the learning outcomes achieved.

EP management must demonstrate that program graduates have skills that are in demand in the labor market and that these skills are truly relevant.

The management of the educational program must demonstrate the presence of a mechanism for monitoring the employment and professional activities of graduates.

An important factor is the presence of an active alumni association/union.

Evidence

The policy of forming a contingent of students is to admit, on the basis of a state order (grant) and on a paid basis, persons who have consciously chosen a specialty and have scored the required number of points on comprehensive testing. The formation of a contingent of students is carried out on the basis of the "Standard rules for admission to training in educational organizations implementing educational programs of higher and postgraduate education", approved by Order No. 600 of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 (with amendments and additions as of 22.02 .2023).

When accepting documents, all individual achievements of applicants and applicants and professional experience are taken into account. For the comfort of applicants, a Memo for applicants to master's programs has been created - a Guide to Admission. Information on how to enroll in a bachelor's degree and current registration data - How to enroll in a bachelor's degree.

The EEC is convinced that social assistance and support for students and employees is one of the highest priority areas of social work carried out at the University, which provides solutions to social problems in order to create optimal conditions for the learning and development of students. Students in need of housing are provided with places in the university dormitories in accordance with the Rules for the distribution of places in dormitories of the NJSC KazNRTU named after K.I. Satpayeva.

Questioning students is one of the mechanisms of the quality management system, providing feedback to the consumer of educational services. To obtain more reliable data, surveys of full-time students should be carried out regularly both during study and after completion of their study of the discipline and completion of the prescribed intermediate certification procedures. DP KazNITU 714. Questionnaire. Customer satisfaction assessment.

Wi-Fi operates around the clock on the territory of the University and in the dormitories, which provides access to information resources also during non-school hours.

In order to effectively organize the educational process in EP, an information-educational, educational-technological and scientific-research environment has been created, which contributes to the formation of key competencies of specialists in this specialty, taking into account the individual needs and capabilities of students.

The information and educational environment is the KazNRTU website, which includes an electronic database of documents that provide support for the educational process (UMKD internship programs, final certification programs), a knowledge control system, databases with data from students and teaching staff, information and reference materials.

The academic group capacity is 25 people, the laboratory group capacity is 12, but not more than 15 people.

According to the documented procedure of KazNITU DP 702. Formation of the student population (bachelor's degree) 2020.pdf establishes the requirements for the student population at the University, the procedure for their admission, registration, movement in the learning process and graduation. Applicants until August 31 of the current year undergo electronic testing for their language proficiency level (English, except for those with an IELTS or TOEFL certificate; Kazakh language for graduates of Russian schools or Russian for graduates of Kazakh schools).

To adapt and support incoming and foreign students, a Youth Policy Committee and a Council of Young Scientists have been created, whose representatives, at regular meetings with the directorate and senior management, always make proposals to improve the conditions of the scientific, educational and educational process. Based on the results of the meetings, "Road Maps" are developed, the tasks set in them are completed on time.

Pedagogical technologies are being improved, taking into account social needs and specializations, the material and technical base is being replenished, the level of equipping the educational process with new equipment, materials, electronic textbooks, educational,

methodological, scientific and technical literature is increasing, access to global library resources, such as EBS Lan, IPRBOOKS , etc.

The organization of external academic mobility programs and international exchange programs for students studying abroad under additional education programs, including retraining and advanced training, scientific internships, participation in seminars, master classes, trainings and other educational events is always carried out strictly in accordance with the approved regulations on academic mobility , which describes the rules, algorithm and instructions for participation.

The mechanism for recognizing learning results acquired during academic mobility is reflected in the approved rules of credit technology. This document is the basis for re-crediting credits for students enrolled in academic mobility. The agreement with the foreign university itself is also fundamental, which contains clauses that describe in detail the process of implementing this mobility program.

As mentioned above, today Satbayev University has 163 agreements, treaties and memorandums of cooperation with foreign universities, international organizations, companies, centers, academies of sciences from 20 countries. During the reporting period, 49 cooperation agreements were concluded.

According to the program of internal academic mobility of KazNRTU named after K.I. Satpayeva collaborates with 15 leading universities of the Republic of Kazakhstan.

Academic mobility: Internal and external academic mobility is carried out through the Office of Commercialization and International Cooperation International Relationsoffice and the Office of the Registrar.

Students of Satbayev University will enjoy numerous social, scientific, creative and sports associations, clubs and groups, vibrant student holidays, meaningful forums and conferences.

One of the most important areas of the University's work is promoting the activities of student organizations and interest clubs.

On the basis of the Sports Club there are 15 sections, national teams of KazNRTU named after K.I. Satpayev take part in all proposed competitions of the National Student Leagues in sports (basketball, volleyball, futsal, table tennis, togyzkumalak, Cossack kures).

In the 2022-2023 academic year, the University developed a Regulation on the provision of grants and discounts on educational services and material incentives (encouragement) for students of the NAO KazNRTU named after K.I. Satpayev, according to which students receive discounts on educational services in various social categories

In the 2022-2023 academic year, 42 Satbayev University educational grants were allocated to school students. And also 42 students who contributed and promoted the positive image of the university are given a 100% discount on tuition. Incentives for students in sports: 89 students received monetary rewards.

After graduating from the University, students are given the opportunity to further study in a master's/doctoral program or find employment. Every year, in order to increase efficiency and systematicity in solving employment problems, the University hosts a job fair, where graduates directly meet with employers. The Department of ET&CT, PE is also working to promote the employment of graduates: the labor market is being studied, vacancies are being searched, and cooperation is being organized with representatives of enterprises and organizations. There is a memorandum of understanding and cooperation with enterprises that assist in the internship of university graduates.

During interviews with teaching staff, students and alumni, it was found that the university has an inactive alumni association, there are no meetings or any events aimed at establishing constant communication with alumni at the university level.

Analytical part

The university regulates procedures that ensure the life cycle of students (from admission to completion).

The management of the EP conducts special adaptation and support programs for newly admitted and foreign students. For example, there is a system of discounts on tuition, depending on the educational achievements of students, as well as benefits for socially vulnerable students,

such as orphans and disabled people of groups I and II.

Planning, distribution and control of the use of the classroom fund is carried out by the Office of the Registrar during the academic year, control over the educational and laboratory base is assigned to the director of the Office of the Registrar, heads of departments and those in charge appointed by order of the Rector of the University in accordance with document DP KazNTU 612. Auditor fund and educational and laboratory base .

According to the documented procedure of DP KazNITU 702. Formation of the student population (bachelor's degree) establishes the requirements for the student population at the University, the procedure for their admission, registration, movement in the process of training and graduation. The requirements of this procedure apply to the processes of forming a contingent of students in the 1st year of study, transfer, expulsion and granting academic leave, reinstatement. At the same time, for paid education it is necessary to score at least 65 points based on the UNT results, including at least 5 points in the history of Kazakhstan, mathematical literacy, reading literacy - language of instruction, and at least 5 points in each specialized subject.

Career guidance work at the university is carried out according to the plan at the department and institute level.

The university maintains the procedure for recognizing learning results obtained by students and mastered during external/internal academic mobility.

The EEC notes that with the establishment and strengthening of business ties with companies and organizations in which graduates of the university successfully work, an Alumni Association has been created and there is a page on the educational portal. During the interview, the active participation of some graduates in the life of the university becomes clear. A visual inspection of the classrooms revealed that graduates specifically contribute to the opening of laboratories, updating the material and technical base, and repair work. However, taking into account that the university is a leader in the field of technical education, a flagship of scientific and technological progress, the commission notes the lack of public awareness of meetings and events with the participation of graduates, the lack of a plan of events held by the alumni association and their insufficient involvement in the basic processes of the university.

EEC recommendations

– The management of the EP should ensure awareness of the activities of the alumni association by publishing a report on the events held in open resources such as the university website and pages on social networks. Deadline – until 08/01/2024.

EEC conclusions according to the criteria: (strong/satisfactory/suggests improvement/unsatisfactory)

According to the "Learners" standard, educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" **have 11 satisfactory and 1 position requiring improvement.**

6.7. Standard "Faculty and teaching staff"

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 personnel, ensuring the professional competence of the entire staff.

The university must demonstrate compliance of the qualitative composition of the teaching staff with the established qualification requirements, the strategy of the university, and the goals of the educational program.

The leadership of the EP must demonstrate the change in the role of the teacher in connection with the transition to student-centered learning and teaching.

The university must provide opportunities for career growth and professional development of teaching staff, including young teachers.

The university must involve in teaching specialists from relevant industries who have professional competencies that meet the requirements of the EP.

The university must demonstrate the presence of a mechanism for motivating the professional and personal development of teaching staff.

The university must demonstrate the widespread use of information and communication technologies and software by teaching staff in the educational process (for example, on-line learning, e-portfolios, MOOCs, etc.).

The university must demonstrate a focus on developing academic mobility and attracting the best foreign and domestic teachers.

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 invited ones, to achieving the goals of the EP.

An important factor is the involvement of teaching staff in the development of the economy, education, science and culture of the region and country.

Evidence

The evidentiary part is formed based on the results of assessing the quality of the OO and/or EP in accordance with the criteria of the Standard. The main human resource of the University associated with the implementation of the educational and scientific process is human resources as the integration of personal resources of representatives of the University teaching staff (teaching staff) and management personnel (representatives of the administration, heads of institutes, departments, structural divisions).

The Development Strategy of KazNRTU 2022-2026 sets out new stages of development of the University for the period 2022-2026.

The contribution of teachers to the implementation of the University's development strategy and other strategic documents is determined by assessing the KPI of teaching staff, which includes items related to the goals and objectives of strategic documents, teachers also introduce strategic priorities into their teaching activities, management organizes professional development of teachers aimed at developing competencies, necessary for the effective implementation of the university development strategy, teachers participate in the development and implementation of initiatives.

The EEC confirms that the University's personnel policy (posted on the official SU website). Management decisions on admission, transfer, promotion of teaching staff are made on the basis of the Rules for competitive filling of vacant positions of teaching staff of NJSC "KazNRTU named after. K.I. Satpayev." The University staff is staffed in accordance with the legislation of the Republic of Kazakhstan. The competitive selection of candidates for vacant positions is carried out in accordance with the qualification characteristics of positions of scientific and pedagogical workers, as well as by placing advertisements in republican newspapers and the University website.

The formation of teaching staff takes place on the basis of hiring by concluding employment contracts with teachers for a period of 1 and 3 years. Recruitment procedures, familiarization of personnel with the rights and duties, movement, dismissal are carried out by the HR service in accordance with the legislative acts of the Republic of Kazakhstan and internal regulatory documents, and approved procedures: "Personnel Management" (DP KazNITU 601. Personnel Management), "Advanced training and staff training" (DP KazNITU 602. Professional development and staff training), "Organizational documentation" (DP KazNITU 402. Organizational documentation), "Internal regulatory documentation" (DP KazNITU 401. Internal regulatory documentation).

According to the Cluster 1 Self-assessment Report, 34 teachers, including those with academic degrees and titles (awarded by the Higher Attestation Commission of the Republic of Kazakhstan), teach classes at the Department of PI in the direction 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science". All teaching staff have basic specialized education: in the 2020-2021 academic year, the staff was 16 people; in the 2021-2022 academic year, the staff was 16 people; in the 2022-2023 academic year, the staff was 34 people, 2023-2024, the staff was only 31 people, of which 10 people settled down (32%). At the Department of Etiquette in the field of training 6B07121, 7M07138 – "Space Engineering and Technology" classes are taught by 32 teachers, including full-time teaching staff - 21, with academic degrees and titles (awarded by the Higher Attestation Commission of the Republic of Kazakhstan) -16, of which: doctors of Sciences, professors (awarded by the Higher Attestation Commission of the Republic of Kazakhstan) - 1; PhD doctors – 7; candidates of Sciences, associate professors (awarded by the Higher Attestation Commission of the Republic of Kazakhstan) – 8, with an academic master's degree - 4. All teaching staff have basic education: in the 2017-2018 academic year, the staff was 16 people; in the 2018-2019 academic year, the staff is 16 people; in

the 2019-2020 academic year, the staff was 15 people, in the 2020-2021 academic year the staff was 17 people, in the 2021-2022 academic year the staff was 14 people, in 2023-2024 the staff was only 19 people, of which 16 people settled down (84%).

In order to increase the prestige of the teaching profession and stimulate them to further professional development, the Competition of the Best University Teachers is held annually. This status is given to such teachers of the departments of ET&CT and PI as Erimbetova Aigerim Sembekovna, Mukhamediev Ravil Ilgizovich, Seydalieva U.O., Smailov N.K., Abdykadyrov A.A., Kuttybaeva A.E., Utebaeva D.Zh., Marksuly S.

To teach some disciplines, practical teachers are involved, whose involvement allows them to bring real experience and practical knowledge from their professional activities into the educational process; The educational material includes the latest trends, innovations and challenges faced by professionals in their field, as well as practicing teachers promote the integration of theoretical knowledge with practical experience, which helps students better understand the material and its application in real life.

Teaching staff and students annually publish scientific articles in materials of foreign and domestic scientific and practical conferences and scientific publications with a high impact factor. Information on advanced training of teaching staff of the Department of ET&CT is presented on the website.

In 2023, grant funding was won and work is underway on the topic: Research and application of fiber-optic strain sensors for monitoring the stressed state of metal and concrete structures. Head Smailov N.K.

In 2023, grant funding was won and work is underway on the topic: Development of a tethered unified dual-use multicopter platform with an inverter with increased frequency switching and a high voltage conversion ratio.

In 2023, a grant was won on the topic "Development and design of UAVs for delivering medicines to a socially vulnerable segment of the population."

The Department of ETiCT, PI has long-term connections with related departments and laboratories: St. Petersburg Polytechnic University named afterPeter-Bruevich, Tashkent University of Information Technologies (Tashkent, Uzbekistan), Bauman Moscow State Technical University (Russia), with whom he shares his experience, plans to conduct joint research and scientific publications, sends students for a research internship. During the reporting period, the department received a number of foreign professors invited to give lectures and conduct scientific consultations for the University faculty, graduate students, doctoral students, undergraduates and bachelors: profeccor Branko Drljaca (University of Pristina in Kosovska Mitrovica), lectures on "methods of modeling light transmission in optical fiber"; Professor of Muslim Arici (Kocaeli University), lectured on the topic "conducts a detailed review of the literature for scientific papers."

An agreement was concluded on the creation of a joint double degree program with the Tashkent Kimyo International University (Tashkent, Uzbekistan) on training. Currently, six students have been accepted for the 1st year according to the 2+2 scheme according to EP 6B07121 - "Space Engineering and Technologies", two years of study in Uzbekistan and two years of study in Almaty, at KazNTU, https://satbayev.university/ru/ news/satbayev-university-otkryvaet-svoe-predstavitelstvo-v-uzbekistane.

As a motivation mechanism, the University has chosen a way to stimulate the achievement of the goals of the University's strategic indicators. Thus, there is a Provision on remuneration, financial incentives and social support for employees of the Kazakh National Research Technical University named after K.I.Satpayev, where the establishment of an employee's official salary is carried out on the basis of the employee's qualification characteristics (education, English language proficiency, etc.), complexity, quantity, quality and effectiveness of the work performed by him. The Regulation on remuneration of employees and students at the NAO Kazntu named after K.I.Satpayev for publications in rating scientific journals has been developed. (https://official.satbayev.university/download/document).

Analytical part

The university demonstrates an objective and transparent personnel policy, including recruitment, professional growth and development of personnel, ensuring the professional competence of all staff. The principles of personnel policy include the availability of management, creating conditions for initiative and creativity, stimulating the activities of employees, increasing their qualifications and self-improvement, providing technically equipped workplaces and classrooms, as well as free access to university resources. The personnel policy also provides for stimulation of professional growth, rewards, and, if necessary, disciplinary measures and removal from work.

Teachers annually conduct open classes using interactive technologies, are evaluated at educational and methodological seminars, where advantages and disadvantages are discussed, and recommendations for improving the quality of education are offered. The department's work plan includes the section "Schedule of open classes using interactive technologies."

Teaching staff and students actively participate in research projects, which is confirmed by the presence of scientific projects through grant funding.

During the accreditation period, based on the results of a survey conducted on the following indicators, data with the following preferences were obtained, respectively (Very good, Good, Relatively bad, Bad, Very bad):

Rate the support of the university and its leadership for research endeavors of the teaching staff: 21 people (41.2%), 26 people (51.8%); 3 people (5.9%); 0 people (0%); 1 person (2%).

Assess the level of ability of teaching staff to combine teaching with scientific research: 21 people (41.2%); 25 people (49%); 2 people (3.9%); 2 people (3.9%); 1 person (2%).

The required data allows us to assert the active involvement of teaching staff in research projects.

Strengths

The factor of involvement of teaching staff in the development of the economy, education, science and culture of the region and country is confirmed by the effective participation of teaching staff in R&D within the framework of government orders, the volume of which is regularly increasing.

EEC recommendations: not available

EEC conclusions based on the criteria:

According to the "Faculty and Teaching Staff" standard, educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" **have 1 strong and 9 satisfactory positions.**

6.8. Standard "Educational Resources and Student Support Systems"

The university must guarantee the compliance of infrastructure, educational resources, including material and technical ones, with the goals of the educational program.

The management of the EP must demonstrate the sufficiency of classrooms, laboratories and other facilities equipped with modern equipment that ensures the achievement of the goals of the EP.

The university must demonstrate the compliance of information resources with the needs of the university and the educational programs being implemented, including in the following areas:

− technological support for students and teaching staff in accordance with educational programs (for example, online learning, modeling, databases, data analysis programs);

− library resources, including a fund of educational, methodological and scientific literature on general education, basic and major disciplines on paper and electronic media, periodicals, access to scientific databases;

− examination of research results, graduation works, dissertations for plagiarism;

− access to educational Internet resources;

− functioning of WI-FI on its territory.

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.

The university should strive to ensure that the educational equipment and software used to master educational programs are similar to those used in the relevant sectors of the economy.

The management of the educational program must demonstrate the existence of procedures for supporting various groups of students, including information and consultation.

The management of the educational program must show the existence of conditions for the student's advancement along an individual educational path.

The university must take into account the needs of different groups of students (adults, working people, foreign students, as well as students with special educational needs).

The university must ensure that the infrastructure meets security requirements.

Evidence

By the expert commission on March 27, 2024. a visual inspection of the extensive material and technical base of the public organization was carried out, providing modern conditions for training and scientific research. There are 14 student organizations at the University. During the year, student government organizes more than 50 events in various areas. The Youth Affairs Committee is the highest body of student and youth self-government of the university in the implementation of state youth policy. The student trade union committee "Zhas Kanat" organizes events such as "The Best Dormitory", team building events for students from socially vulnerable segments of the population, sports competitions among students, etc.

To develop logical and critical thinking, develop communicative culture and public speaking skills, prepare for independent decision-making, and the ability to develop individuals as future leaders of society, the debate club "Technocrat" annually holds the republican debate tournament "Technocup" and participates in various city and republican tournaments, in which they traditionally emerge as winners, thereby defending the honor of the university.

Student organizations participate annually in the Student Organization Fair.

ENACTUS KazNITU is a community of business leaders who view business as a way to solve social problems. Enactus students implement socio-economic projects that enable people to improve their lives.

The student project Satbayev Time is engaged in educating university students about student life, disseminating important information about various events, both outside and outside the university, in order to gather a large audience of students, for further communication in social networks of applicants and graduates of KazNTU.

At the university, the League of Volunteers holds public events, organizes seminars and master classes, and also initiates youth projects and events to develop the volunteer movement.

In order to strengthen the ideology of youth and promote family values, revive national traditions, develop the spirit of patriotism, and involve students in the implementation of "Rukhani Zhangyru", social charitable projects are carried out.

The university pays special attention to the anti-corruption culture and the general understanding of students about the essence of corruption.

As part of the implementation of the Decree of the Government of the Republic of Kazakhstan dated March 12, 2012 No. 320 "On approval of the amounts, sources, types and Rules for the provision of social assistance to citizens who receive social assistance," and in order to provide all possible material and moral support to students, the university has organized work on payment monetary compensation for food and for the purchase of clothing, shoes and soft equipment for students from among orphans and children left without parental care and under guardianship.

Much attention is paid to the professional level of student support services staff. Among the leaders of amateur artistic circles are Zh. Bekenturov, Honored Worker of the Republic of Kazakhstan, Honorary Professor of the Kazakh National Conservatory named after Kurmangazy, conductor of the State Orchestra named after Kurmangazy (folk instruments orchestra); G. Sembieva - Honored Worker of Culture of the Republic of Kazakhstan, accompanist of the kobyz group in the folk instruments orchestra, director of the vocal-instrumental ensemble and vocal directors are laureates of international competitions.

The University sports club, which is headed by the Master of sports in rhythmic gymnastics

V. Laktionova, has 10 sections in 9 sports.

KazNRTU named after K.I. Satpayev has the necessary number of classrooms equipped with modern technical training facilities: educational and scientific laboratories, modern training grounds, technoparks equipped with modern equipment that correspond to the educational programs being implemented, sanitary and epidemiological norms and requirements. The university has 51 computer classrooms with 665 computers, of which 357 are high-performance graphics stations from a well-known premium brand. Computer classes are used for independent work of students with modern, up-to-date software that is demanding to the technical characteristics of the computer.

The university uses the licensed program "StrikePlagiarism" to check the written work of students and teaching staff and identify facts of academic fraud. The rules for checking final works for plagiarism (Pr 029-04-01.03.1.05 – 2022) define evaluation criteria for plagiarism.

All registered students and teaching staff remotely get access to the Electronic Catalog (EC) and the Electronic Library of the university. To inform its users, the library maintains an electronic card file – "Industry", which reflects materials on the profile of the university from scientific and technical journals and periodicals on mining, petroleum, metallurgy, transport, and mechanical engineering. 3 full-text databases are generated: "The history of KazNTU named after K.I. Satpayev", which reveals the scientific, educational and educational activities of the university; "Works of KazNTU" and "Articles of the Faculty". In accordance with the educational and research needs of users, access to thematic electronic collections of e-books is also provided. Collections of e-books from Elsevier publishing house (Chemical Engineering 2016 Chemical Engineering 2017 – 128 copies) were purchased. 3 Reading rooms of the Scientific Library are equipped with 76 monoblock computers with a 23" widescreen screen to ensure maximum comfort for readers. The Satbayev University computer equipment park contains 3,843 computers of the latest generation, of which 28% are high-performance or high-performance computers. The University has an innovative auditorium, which includes audio-visual equipment and an innovative workplace in the 265 MMC auditorium. For the convenience of students and University staff, the 406 NC auditorium is equipped with a TV panel, audio equipment and a monoblock to relieve the load on the 316NK conference hall, a number of presentations and meetings have already been held on the basis of the 406th office. The conference hall "SDG" NK302 was put into operation, equipped with an interactive 86" diagonal panel equipped with a conference bar with a camera, microphone and speaker, providing high quality video calls and conferences.

- For students and teachers of Satbayev University, licenses and software distributions were purchased, used in work at the world's largest industrial enterprises, such as:
- Autodesk products – AutoCAD, Civil 3D, 3DS Max, Revit, Fusion 360, Inventor, etc.
- CHEMCAD
- Schlumberger products – Petrel, Techlog, ECLIPSE, PIPESIM, etc.
- KAPPA Engineering products – Saphir Pressure Transient Analysis, Topaze Rate Transient Analysis, Emeraude Cased Hole Logging, etc.
- Microsoft M365 cloud products – Teams, SharePoint, OneDrive, Outlook, Word, Excel, etc.
- Free access has been organized for all students and employees of Satbayev University to the main legislative base of the Republic of Kazakhstan IS "Paragraph".

The Institute of Digital Technologies and Professional Development provides the necessary computing resources (computing power, information storage, continuity of operation, data security), infrastructure in the form of communication channels and access to resources from the University's internal network and via the Internet, necessary for the functioning of all UNIVERSITY systems in a continuous mode. The upgraded and updated Wi-Fi equipment, which provides access to the University's local network and the Internet, covers the main crowded places with a wireless network, which is accessible to students, teaching staff and staff. Students studying the specialty 7M06102 "Machine Learning & Data Science" at the master's level are provided with courses on the Coursera platform.

A single corporate account provides ease of use of the University's information resources, as well as the ability to use the services provided by the University anywhere, at any time, with access to the Internet, not tied to the University's servers.

The Microsoft 365 cloud platform provided by Satbayev University for students and teaching staff is used as the main auxiliary tool for the on-line educational process. Personal corporate mail and workspace are provided for each of the students and users of Satbayev University cloud IT services in the @satbayev.university domain for teaching staff and in the @stud.satbayev.university domain for students.

To conduct exams and assess knowledge, teachers have the opportunity to use the "Emtihunter" service developed by employees of the Institute of Digital Technologies and Professional Development.

The university has a rich fund of educational, educational, methodological and scientific literature.

Through the University's educational portal, foreign students have access to the results of the academic ranking and the electronic schedule. Each student has a university email address, to which he receives all the necessary information.

According to the Regulations on providing discounts on educational services and material incentives (encouragement) for students of the NJSC KazNRTU named after K.I. Satpayev, 69 students received discounts on educational services in various social categories. For winning the XIV Presidential Olympiad in Natural Sciences and Mathematics, school students were awarded 10 educational grants from Satbayev University.

One of the important forms of providing social support is providing places in dormitories for all students of this category and providing benefits for living in dormitories. Orphan students live in dormitories for free.

The university has an effective information and feedback system, which includes:

– university websites (official website, applicant website, electronic library, student forum, website for checking documents for plagiarism, etc.),

– educational portal portal, WAP portal;

– electronic document management system, corporate email Outlook; external media, etc.

On March 27, according to the program of the EEC visit, the expert commission carried out an action plan for attending classes. The learning environment for the educational program EP 7M06201 "Machine Larrning & Data Science", 8D06201 "Machine Larrning & Data Science" meets the main criteria.

The following are presented for visual inspection: the Machine Learning laboratory (room 1012 of the State University of Culture), the 1C laboratory in room 403, the Halyk Academy laboratory in room 1014. The department is assigned to teaching rooms 1021 and 1010c in the State University of Culture, the following laboratory classes 1008 a, b; 1014; 1023; 1027 in GUK, 402 and 403 in KCC (Passports of computer classes PI).

The management of buildings, equipment and other property is carried out by the relevant structures, which is confirmed by documents, including technical passports and schematic plans of buildings and structures. The University has a production base for operational and repair work. The university's classroom fund ensures the effective organization of educational and scientific activities. Specialized classrooms are equipped with modern equipment, including multimedia projectors and new generation computers. Regular work on equipping classrooms allows us to ensure high-quality classes. The University has a corporate information and educational network that provides free Internet access for students, teachers and staff. This is supported by fiber-optic lines and Wi-Fi antennas on the university grounds.

The university carries out registration for academic disciplines; registration is carried out by the registration office with the assistance of advisers. Announcements about the start of registration and other academic events are displayed in the form of pop-up windows. Teachers have the opportunity to conduct individual consultations with students, for which classrooms are provided.

The Department of International Cooperation conducts awareness-raising activities among

students about the possibilities of studying under academic mobility programs. Coordinates the competitive selection of applicants on a grant and off-budget basis. Ensures the admission of international students and the participation of teachers in international programs. Students have access to online consultations on the university's website, as well as assistance mechanisms in case of problems in the educational process. In case of a valid reason for missing classes, it is possible to provide an individual cumulative statement or to take the discipline in an additional semester.

Students can receive all necessary documents, such as academic transcripts, transcripts and copies of diplomas, both in printed and electronic form in the shortest possible time. Inclusive education is provided at the university, and a Center for Support and Support of Inclusive Education has been created. The university actively supports socially vulnerable students by providing tuition benefits. The Library and Information Center (LIC) takes into account the needs of users with special educational needs and provides access to resources for the visually impaired.

Analytical part
The resources used to organize the learning process are sufficient and meet the requirements of the educational program.

During a visual inspection, the EEC established that the KazNRTU University has a sufficiently extensive material and technical base that provides conditions for training and scientific research. The university has specialized classrooms, laboratories, multimedia projectors with interactive whiteboards: scientific and methodological laboratory of applied machine learning (room 1012 of the State University of Culture), 1C laboratory in room 403, Halyk Academy laboratory in room 1014. On the basis of the departments of Software Engineering and Electronics, Telecommunications and Space Technologies, educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" (GUK building), which were accredited according to Cluster 1.

The material and technical base of the university also includes sports complexes, a separate dining room, cafes, buffets and other facilities.

The University is updating its fleet of laboratory equipment, improving the quality of providing students with information and developing related educational and methodological materials.

The university library provides students, teachers and researchers with essential information resources and services. The university library has a sufficient book collection.

During the specialized accreditation for the EP of Cluster 1, a survey of students was conducted regarding student satisfaction with the educational process.

According to the results of an anonymous survey of students of the Kazakh National Research Technical University named after K.I. Satpayev regarding the standard "Educational resources and student support systems", indicators with the following preferences are presented:
Completely satisfied / Partially satisfied / Partially dissatisfied / Not satisfied / Difficult to answer.
- Support with educational materials during the learning process - 29 people (67.4%); 13 people (30.2%); 1 person (2.3%); 0 people (0%);0 people (0%).
- Level of accessibility of library resources – 32 people (74.4%); 9 people (20.9%); 0 people (0%); 1 person (2.3%); 1 person (2.3%).
- The quality of services provided in libraries and reading rooms – 32 people (74.4%); 9 people (20.9%); 0 people (0%); 1 person (2.3%); 1 person (2.3%).
- Satisfaction with the existing educational resources of the university - 31 people (72.1%); 9 people (25.6%); 1 person (2.3%); 0 people (0%); 0 people (0%).
- Availability and quality of Internet resources – 30 people (69.8%); 11 people (25.6%); 1 person (2.3%); 1 person (2.3%); 0 people (0%).

- The content and information content of the website of educational organizations in general and faculties (schools) in particular - 31 people (72.1%); 12 people (27.9%); 0 people (0%); 0 people (0%); 0 people (0%).

- Information support and explanation before entering the university of the rules of admission and the strategy of the educational program (specialty) - 32 people (74.4%); 10 people (23.3%); 1 person (2.3%); 0 people (0%); 0 people (0%).

Analyzing the data obtained, it can be argued that according to the standard "Educational Resources and Student Support Systems", students of educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technology" KazNRTU have satisfactory conditions for receiving educational services. The University ensures compliance with safety requirements when conducting classes.

Strengths: not identified

EEC recommendations: not available

EEC conclusions according to the criteria: (strong/satisfactory/suggests improvement/unsatisfactory)

According to the standard "Educational Resources and Student Support Systems", educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" **have 13 satisfactory positions.**

6.9. Public Information Standard

The university guarantees that the published information is accurate, objective, relevant and reflects all areas of the university's activities within the educational program.

Public information should include support and explanation of the country's national development programs and the system of higher and postgraduate education.

University management must use a variety of methods of information dissemination (including the media, web resources, information networks, etc.) to inform the general public and interested parties.

Information about the educational program is objective, up-to-date and should include:

− purpose and planned results of the EP, assigned qualifications;

− information and system for assessing students' educational achievements;

− information about academic mobility programs and other forms of cooperation with partner universities and employers;

− information about opportunities for developing personal and professional competencies of students and employment;

− data reflecting the positioning of EP in the educational services market (at the regional, national, international levels).

An important factor is the publication on open resources of reliable information about teaching staff, broken down by personalities.

The university must publish audited financial statements for the EP on its own website.

The university must post information and links to external resources based on the results of external assessment procedures.

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.

Evidence

The official website of the University is an important tool for informing the general public about the activities of the university. The site provides official information about the university, its history, structure, documents, infrastructure, educational programs, scientific and innovative achievements, partners and projects, as well as a news blog with archives of events at the university. Thus, the university actively uses media communication tools to inform the public and support transparency in its activities. The University actively uses various sources and services to publish and publicize information, providing stakeholders with access to a variety of content. The university's website provides extensive information for applicants, students, researchers, foreign teachers, commercial organizations and other interested parties, including the academic calendar, educational information, rules and requirements, contact details and working hours of departments, announcements of events and much more.

The process is managed by the Public Relations Center https://official.satbayev.university/ru/standarty in accordance with the internal documents of the university.

Since 2019, the Facebook page RectorofSatbayevUniversity began to function.

The amount of information collected is reflected on the website in the "Media about us" section and in the publication section, as well as on the Internet platforms of the institute and the department.

To inform the public, including applicants wishing to apply for educational programs 6B074600, 7M07138 "Space Engineering and Technology", as well as 7M06102, 8D06102 "Machine Learning & Data Science", the following email addresses are available to familiarize them with all relevant and useful information official pages of the university: https://satbayev.university/; https://www.instagram.com/satbayev_university/; https://www.facebook.com/satbayevuniversity.

Researching the satisfaction of employers, students and graduates requires the use of questionnaires, group interviews, analysis of data on career success, reviews and recommendations, monitoring of social networks and online platforms, as well as assessment of quality indicators (employment of graduates, their salary level, job satisfaction, etc.). d.), feedback systems. In accredited EPs, all of these methods are used and provide a comprehensive view of satisfaction and completeness of information necessary for the continuous improvement of training programs and compliance with labor market requirements.

Satbayev University has a comprehensive website-based information support system for students and teachers for all educational programs. In addition to the website, the system includes the PolytechOnline distance learning portal, integrated with the university's educational portal, the MicrosoftTeams platform, used for conducting remote classes: lectures, practical, laboratory, office hours, etc.

At KazNRTU named after K. Satpayev, activities are being developed, planned and implemented to inform the public about the activities of the University. The media is monitored, the dynamics of public opinion on key issues of the University's activities are analyzed, and the University's management is promptly informed about the results. Interaction with journalists for the purpose of the most complete and objective coverage in the media of the activities of the University and its structural divisions. Prepares and publishes articles, interviews, photo and video materials, speeches by university staff, as well as press releases about ongoing events in the media.

The number of media and electronic publications used by the university includes: Republican newspaper "Kazakhstanskaya Pravda", Forbes Kazakhstan, Egemen Kazakhstan, ExpressK, Tengrinews, Nur.kz and other publications.

Satbayev University widely uses social networks, in which it regularly publishes information about educational programs and opportunities that studying at the university provides.

- Instagram https://www.instagram.com/satbayev_university/
- Facebook https://www.facebook.com/satbayevuniversity
- VK https://vk.com/satbayevuniversity
- Telegram https://t.me/Satbayev_University_Official
- LinkedIn https://www.linkedin.com/school/1048308/admin/
- Twitter https://twitter.com/NITU_Satpaev
- YouTube https://www.youtube.com/channel/UCzpfUbR-imEHBlhOX9tnKEg
- TikTok https://www.tiktok.com/@satbayev_official?lang=en
- Google Businesshttps://business.google.com/u/2/posts/l/13945254457139118465

Every year after the start of the new academic year, the Board holds a reporting meeting as part of the annual meeting with university employees, where the Rector and Vice-Rectors of the university speak.

The "News" section contains up-to-date information about the activities of the university, cooperation, joint projects and events taking place on the territory of the university.

Currently, the university's distance learning platform Polytechonline is one of the best in the country and provides educational services to more than 10,000 students. The Polytechonline database contains multilingual courses that are available to students around the clock and without limiting the number of views.

The PolytechOnline platform contains not only a database of 1,524 video courses and 18,810 video files, but also has an interactive interface and full-cycle functionality for students, teachers, administrators, as well as integration with all external systems of the University.

The university has entered into a memorandum with Coursera, which provides students with access to online courses on the platform. Some master's and undergraduate disciplines will now be presented on Coursera, such courses as "High load distributed computing", "Embedded Real Time Systems", "BigData Processing applications", "Theory of Complexity & Computations", "Computer vision".

Analytical part

The official website of the KazNRTU University provides official information about the university, its history, structure, documents, infrastructure, educational programs, scientific and innovative achievements, partners and projects, as well as a news blog with archives of events at the university.

Official pages on social networks (VK, Instagram, Facebook) are used to post information, advertise, encourage students, and conduct online events.

The university openly posts complete and reliable information about its activities, rules for admitting applicants, terms and forms of study, information about graduate employment, alumni reviews, contact and other information useful for applicants and students.

Information about the activities of the university is differentiated and available to all interested parties: applicants, students, parents, graduates, employers, representatives of government bodies and public organizations, business partners, scientific and consulting organizations, foreign universities.

During the specialized accreditation for the EP of Cluster 1, a survey of teaching staff and students was also conducted on the subject of awareness.

According to the results of an anonymous survey of students of the Kazakh National Research Technical University named after K.I. Satpayev regarding the "Informing the Public" standard, indicators with the following preferences are presented: Completely satisfied / Partially satisfied / Partially dissatisfied / Not satisfied / Difficult to answer.

- Informing students about courses, educational programs and the academic degree they receive – 34 people (79.1%); 7 people (16.3%); 2 people (4.7%); 0 people (0%); 0 people (0%).

- Informing the requirements in order to successfully complete this educational program (specialty) - 33 people (76.7%); 8 people (18.6%); 1 person (2.3%); 0 people (0%); 1 person (2.3%).

Analyzing the data obtained, it can be argued that according to the "Public Information" standard, students of educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" KazNRTU has satisfactory conditions for obtaining the necessary information.

No strengths identified

EEC recommendations: not available

EEC conclusions based on the criteria:

According to the "Public Information" standard, educational programs 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" **have 13 satisfactory positions.**

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

According to the standard "Student-centered learning, teaching and performance assessment" of educational programs, a strong position is:

– Availability of a support system for applicants to prepare them for entrance examinations at the university's master's and doctoral programs, effective use of PolytechOnline's own educational distance education portal for training, including for an inclusive society. The university actively uses automated information systems (AIS), which provide ample opportunities for analyzing various aspects of the educational process.

According to the "Faculty and Teaching Staff" standard, educational programs have a strong position:

– The factor of involvement of teaching staff in the development of the economy, education, science and culture of the region and country is confirmed by the effective participation of teaching staff in R&D within the framework of government orders, the volume of which is regularly increasing.

(VII) OVERVIEW OF RECOMMENDATIONS FOR IMPROVING QUALITY FOR EACH STANDARD

Standard "Educational Program Management".

Recommendations for EP 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies":

– In the structure of the EP development plan, in addition to general performance indicators, provide specialized ones related to the specifics of such an EP, its goals and objectives. Clarify numerical indicators taking into account their units of measurement and accounting method (cumulative total or quantity per year). Develop an action plan to achieve the performance indicators specified in the EP Development Plans, establishing responsible persons and implementation deadlines. Carry out annual updating of Development Plans, taking into account the necessary corrective actions to achieve planned indicators based on interim reports on the implementation of the development plan.

– In the structure of the EP Development Plan, provide a section on establishing the competitive or distinctive features of the EP to determine their uniqueness, as well as the individuality of the EP development plans, their consistency with the national qualifications framework and the University Development Program, as well as the results of the SWOT analysis in relation to the EP.

– Include in the structure of the EP development plan (for all levels) a section related to identifying the risks of implementing educational programs, developing an action plan to minimize them, as well as annual reporting on the implementation of the development plan for a certain academic period.

Completion deadline: December 1, 2024.

Standard "Development and approval of an educational program"

Recommendations for EP 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies":

– In the structure of the EP Development Plan, provide a section on establishing the competitive or distinctive features of the EP to determine their uniqueness, consistency with the national qualifications framework and the University Development Program, as well as the results of the SWOT analysis in relation to the EP. Completion deadline is December 1, 2024.

Standard "Continuous monitoring and periodic evaluation of educational programs"

Recommendations for EP 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies":

– Post information about changes made to EP 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" in open resources, such as the university website, pages on social networks in order to inform all interested parties. Completion deadline is December 1, 2024.

Standard "Students"

Recommendations for EP 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies":

– The management of the EP should ensure awareness of the activities of the alumni association by publishing a report on the events held in open resources such as the university website and pages on social networks. Deadline – until 08/01/2024.

(VII) REVIEW OF RECOMMENDATIONS FOR THE DEVELOPMENT OF EDUCATIONAL ORGANIZATION

. not available

(VIII) RECOMMENDATION TO THE ACCREDITATION BOARD

Members of the EEC came to a unanimous opinion that EP 7M06102 "Machine Learning & Data Science", 8D06102 "Machine Learning & Data Science", 6B07121 "Space Engineering and Technologies", 7M07138 "Space Engineering and Technologies" are recommended for accreditation for a period of 5 years.

Appendix 1. Evaluation table "SPECIALIZED PROFILE PARAMETERS"

№	№	Criteria for evaluation	Position of the educational organization			
			Strong	Satisfactory	Suggests improvement	Unsatisfactory
		Standard "Educational Program Management"				
1	1.	The university must demonstrate the development of a goal and strategy for the development of the EP based on an analysis of external and internal factors with the wide involvement of a variety of stakeholders		+		
2	2.	Quality assurance policies should reflect the relationship between research, teaching and learning		+		
3	3.	The university demonstrates the development of a quality assurance culture		+		
4	4.	A commitment to quality assurance must apply to any activity carried out by contractors and partners (outsourcing), including joint/double degree education and academic mobility		+		
5	5.	The management of the EP ensures transparency in the development of the EP development plan based on an analysis of its functioning, the real positioning of the university and the focus of its activities on meeting the needs of the state, employers, stakeholders and students			+	
6	6.	The leadership of the EP demonstrates the functioning of the mechanisms for the formation and regular review of the EP development plan and monitoring its implementation, assessing the achievement of training goals, compliance with the needs of students, employers and society, making decisions aimed at the continuous improvement of the EP			+	
7	7.	The management of the EP should involve representatives of stakeholder groups, including employers, students and teaching staff in the formation of a development plan for the EP		+		
8	8.	The management of the EP must demonstrate the individuality and uniqueness of the development plan of the EP, 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 EP, the distribution of job responsibilities of staff, and the delimitation of the functions of collegial bodies		+		
10	10.	The management of the EP ensures 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		+		

11	11.	The management of the EP 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.	R EP management must implement risk management		+		
13	13.	The management of the educational program must ensure the participation of representatives of interested parties (employers, teaching staff, students) in the collegial bodies governing the educational program, as well as their representativeness when making decisions on issues of managing 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 to teaching staff students, employers and other interested parties		+		
16	16.	The management of the EP confirms completion of training in educational management programs		+		
17	17.	The management of the EP should ensure that the progress made since the last external quality assurance procedure is taken into account in preparation for the next procedure		+		
		Total according to standard	0	14	3	0
Information Management and Reporting Standard						
18	1.	The university must ensure the functioning of a system for collecting, analyzing and managing information based on modern information and communication technologies and software		+		
19	2.	The management of the EP demonstrates the systematic use of processed, adequate information to improve the internal quality assurance system		+		
20	3.	The management of the EP demonstrates the presence of a reporting system reflecting the activities of all structural divisions and departments within the EP, including an assessment of their effectiveness		+		
21	4.	The university must determine the frequency, forms and methods of assessing the management of the educational program, the activities of collegial bodies and structural divisions, and senior management		+		
22	5.	The university must demonstrate a mechanism for ensuring the protection of information, including identifying responsible persons for the accuracy and timeliness of information analysis and data provision		+		
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 it		+		
24	7.	The management of the EP must demonstrate the availability of communication mechanisms with students, employees and other interested parties, including conflict resolution		+		

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25	8.	The university must ensure that the degree of satisfaction of the needs of teaching staff, staff and students within the EP is measured and demonstrate evidence of eliminating the identified deficiencies		+		
26	9.	The university must evaluate the effectiveness and efficiency of activities, including in the context of EP		+		
		Information collected and analyzed by the university within the framework of the EP must take into account:		+		
27	10.	key performance indicators		+		
28	11.	dynamics of the student population in terms of forms and types		+		
29	12.	grade level, student achievement and dropout		+		
30	13.	student satisfaction 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, employees and teaching staff must document their consent to the processing of personal data		+		
34	17.	The management of the EP should help provide all the necessary information in the relevant fields of science		+		
		Total according to standard	0	17	0	0
Standard "Development and approval of an educational program"						
35	1.	The university must demonstrate the existence of a documented procedure for developing EP and its approval at the institutional level		+		
36	2.	The university must demonstrate compliance of the developed EP with the established goals and planned learning outcomes		+		
37	3.	The management of the educational program must determine the influence of disciplines and professional practices on the formation of learning outcomes		+		
38	4.	The university can demonstrate the presence of a model of an EP graduate that describes 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 the NQF, QF-EHEA		+		
40	6.	The management of the EP must demonstrate the modular structure of the program, based on the European Credit Transfer and Accumulation System (ECTS), ensure that the EP and its modules (in content and structure) comply with the set goals with a focus on achieving the planned learning outcomes		+		
41	7.	The management of the EP must ensure that the content of academic disciplines and learning outcomes correspond to each other and the level of study (bachelor's, master's, doctoral)		+		

42	8.	The management of the EP must demonstrate the conduct of external examinations 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 of the EP and ensuring their quality		+		
44	10.	The management of the EP must demonstrate the positioning of the EP in the educational market (regional/national/international), its uniqueness			+	
45	11.	An important factor is the ability to prepare students for professional certification		+		
46	12.	An important factor is the presence of a double-degree EP and/or joint EP with foreign universities		+		
		Total according to standard	0	11	1	0
Standard "Continuous monitoring and periodic evaluation of educational programs"						
47	1.	The university must ensure a revision of the content and structure of the EP, taking into account changes in the labor market, the requirements of employers and the social demands of society		+		
48	2.	The university must demonstrate the existence of a documented procedure for monitoring and periodically evaluating the EP to achieve the goal of the EP. The results of these procedures are aimed at continuous improvement of the EP		+		
		Monitoring and periodic evaluation of the EP should consider:		+		
49	3.	content of programs in the context of the latest achievements of science and technology in a specific discipline		+		
50	4.	changes in the 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 degree of satisfaction of students		+		
54	8.	compliance of the educational environment and the activities of support services with the goals of the EP		+		
55	9.	All interested parties must be informed of any planned or undertaken actions regarding the OP. All changes made to the EP must be published			+	
56	10.	Support services should identify the needs of various groups of students and the degree of their satisfaction with the organization of training, teaching, assessment, and development of EP in general		+		
		Total according to standard	0	9	1	0
Standard "Student-Centered Learning, Teaching and Assessment"						
57	1.	The management of the educational program must ensure respect and attention to different groups of students and their needs, providing them with flexible learning paths	+			

58	2.	The management of the EP must provide teaching based on modern achievements of world science and practice in the field of training, the use of various modern teaching methods and assessment of learning outcomes that ensure the achievement of the goals of the EP, including competencies, skills in performing scientific work at the required level		+		
59	3.	The management of the EP must determine mechanisms for distributing the educational load of students between theory and practice within the EP, ensuring the mastery of the content and achievement of the goals of the EP by each graduate		+		
60	4.	An important factor is the presence of your own research in the field of teaching methods of EP disciplines		+		
61	5.	The university must ensure that the procedures for assessing learning outcomes comply with the planned results and goals of the EP		+		
62	6.	The university must ensure consistency, transparency and objectivity in the mechanism for assessing the educational results of the EP. Criteria and methods for assessing learning outcomes should be published in advance		+		
63	7.	Evaluators must be proficient in modern methods of assessing learning outcomes and regularly improve their skills in this area		+		
64	8.	The management of the educational program must demonstrate the existence of a feedback system on the use of various teaching methods and evaluation of learning outcomes		+		
65	9.	The management of the educational program must demonstrate support for student autonomy while simultaneously providing guidance and assistance from the teacher.		+		
66	10.	The management of the educational program must demonstrate the existence of a procedure for responding to student complaints		+		
		Total according to standard	1	9	0	0
Standard "Students"						
67	1.	The university must demonstrate a student enrollment policy and ensure the transparency of its procedures. Procedures regulating the life cycle of students (from admission to completion) must be defined, approved, published		+		
68	2.	The management of the EP should provide for special adaptation and support programs for newly admitted and foreign students		+		
69	3.	The university must demonstrate compliance of its actions with the Lisbon Recognition Convention, including the presence and application of a mechanism for recognizing the results of academic mobility of students, as well as the results of additional, formal and informal learning		+		
70	4.	The university must provide opportunities for external and internal academic mobility of students, as well as assist them in obtaining external grants for studying		+		

71	5.	The university must actively encourage students to self-education and development outside the main program (extracurricular activities)		+		
72	6.	An important factor is the presence 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 places of practice, demonstrate a procedure for promoting the employment of graduates, and maintaining contact with them		+		
75	9.	The university must demonstrate the procedure for issuing documents to graduates confirming the qualifications obtained, 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 actually in demand in the labor market		+		
77	11.	The management of the educational program must demonstrate the existence of a mechanism for monitoring the employment and professional activities of graduates		+		
78	12.	An important factor is the presence of an active alumni association/union			+	
		Total according to standard	0	11	1	0
Standard "Faculty and 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 personnel, ensuring the professional competence of the entire staff		+		
80	2.	The university must demonstrate 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 leadership of the EP must demonstrate a change in the role of the teacher in connection with the transition to student-centered learning and teaching		+		
82	4.	The university must provide opportunities for career growth and professional development of teaching staff, including young teachers		+		
83	5.	The university must involve in teaching specialists from relevant industries who have professional competencies that meet the requirements of the EP		+		
84	6.	The university must demonstrate the presence of a mechanism for motivating 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 teaching staff (for example, on-line		+		

№						
		learning, e-portfolios, MOOCs, etc.)				
86	8.	The university must demonstrate a focus on developing academic mobility and 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 invited ones, 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 country	+			
		Total according to standard	1	9	0	0
		Standard "Educational Resources and Student Support Systems"				
89	1.	The university must guarantee the compliance of educational resources, including material and technical resources, and infrastructure with the goals of the educational program		+		
90	2.	The management of the EP must demonstrate the availability of classrooms, laboratories and other facilities equipped with modern equipment and ensuring the achievement of the goals of the EP		+		
		The university must demonstrate the compliance of information resources with the needs of the university and the educational programs being implemented, including in the following areas:		+		
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, methodological and scientific literature on general education, basic and major disciplines on paper and electronic media, periodicals, access to scientific databases		+		
93	5.	examination of research results, graduation works, dissertations for plagiarism		+		
94	6.	access to educational Internet resources		+		
95	7.	functioning of WI-FI on your 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 to master educational programs are similar to those used in the relevant sectors of the economy		+		
98	10.	The management of the educational program must demonstrate the availability of procedures to support various groups of students, including information and consultation		+		

99	11.	The management of the educational program must show the existence of conditions for the student's advancement along an individual educational path		+		
100	12.	The university must take into account the needs of various groups of students (adults, working people, foreign students, as well as students with special educational needs)		+		
101	13	The university must ensure that the infrastructure meets security requirements		+		
		Total according to standard	0	13	0	0
Public Information Standard						
102	1.	The information published by the university must be accurate, objective, relevant and reflect all areas of the university's activities within the educational program		+		
103	2.	Public information should include support and explanation of the country's national development programs and the system of higher and postgraduate education		+		
104	3.	University management must use a variety of methods of information dissemination (including the media, web resources, information networks, etc.) to inform the general public and interested parties		+		
		Information published by the university about the educational program must be objective and relevant and include:		+		
105	4.	purpose and planned results of the EP, assigned qualifications		+		
106	5.	information and system for assessing educational achievements of students		+		
107	6.	information about academic mobility programs and other forms of cooperation with partner universities and employers		+		
108	7.	information about opportunities for developing personal and professional competencies of students and employment		+		
109	8.	data reflecting the positioning of EP in the educational services market (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 website		+		
112	11.	The university must post information and links to external resources based on the results of external assessment 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 according to standard	0	12	0	0
		TOTAL	**2**	**105**	**6**	**0**

Appendix 2 PROGRAM OF THE VISIT TO THE EDUCATIONAL ORGANIZATION

Date and time	EEC work with target groups	Position and Surname, Name Patronymic name target group participants	Contact form
March 25, 2024		
During the day	Arrival of members of the External Expert Commission		
16.00-17.00	Preliminary meeting of the EEC	*IAAR External Experts*	Join a Zoom meeting https://us02web.zoom.us/j/6813032588 Conference ID: 681 3032588
20.00	Dinner	*IAAR External Experts*	
Day 1, march 26, 2024			
09.30-10.00	Transfer from the hotel to the University	*External IAAR experts, university coordinator –*	
10.00-10.20	Distribution of responsibilities of experts, solution of organizational issues	*IAAR External Experts*	*302 PB* Join a Zoom meeting https://us02web.zoom.us/j/6813032588 Conference ID: 681 3032588
10.20-11.00	Interview with the rector and vice-rectors	*Chairman of the Board – Rector – Begentaev Meiram Mukhametrakhimovich, Doctor of Economics Member of the Board – First Vice-Rector for International Cooperation and Strategic Development – Yermekbaev Samgat Kuatovich, Member of the Board - Vice-Rector for Academic Affairs - Uskenbaeva Raisa Kabievna, Doctor of Technical Sciences, Professor Member of the Board - Vice-Rector for Science and Corporate Development - Kuldeev Erzhan Itemenovich, Ph.D., Professor Member of the Board – Vice-Rector for Administrative, Social and Educational Work – Shalabaev Sapar Kataevich*	*302 PB* Join a Zoom meeting https://us02web.zoom.us/j/6813032588 Conference ID: 6813032588
11.00-10.10	Technical break		
11.10-11.50	Interviews with heads of structural divisions	Director of the Department of Finance and Accounting – Chief Accountant – Togzhigitova Gulnara Beisengazievna Director, Department of Infrastructure	*316 PB* Join a Zoom meeting https://us02web.zoom.us/j/6813032588

Date and time	EEC work with target groups	Position and Surname, Name Patronymic name target group participants	Contact form
		Management – Tynybekov Rishat Imelovich Director of the Center for Public Relations – Balgabaeva Madina Kadyrovna, MBA Director of the Department for Support of Scientific Projects and Postgraduate Education – Alshimbaeva Dina Unerbekkyzy Director of the Strategic Development Department – Yensebaeva Marzhan Zaitovna, Ph.D. Director of the Office Registrar – Nurlan Kuttybaevich Kyzylbayev Director of the Institute of Digital Technologies and Professional Development – Simonov Andrey Gennadievich Director of HR Service – Beisova Azhar Kayrolovna Director of the Scientific Library – Omirzakova Sholpan Medetbekovna Director of the Department of Youth Affairs and Sports – Tolepbergen Adilkhan Temirkhanuly Head of the Office of International Cooperation – Akataeva Aliya Askarovna Responsible Secretary of the Admissions Committee - Narbaev Mars Tursynbekovich Chairman of the trade union committee - Marlanuly Serik	Conference ID: 681 3032588
11.50-12.00	Exchange of views among members of the external expert commission	*IAAR External Experts*	*302 PB* Zoom https://us02web.zoom.us/j/82972841841 ID: 82972841841
12.00-12.40	Interviews with deans and heads of departments	Director of the Institute of Energy and Mechanical Engineering – Elemesov Kasym Koptleuovich, Ph.D., professor Director of the Mining and Metallurgical Institute – Rysbekov Kanay Bakhytovich, Ph.D., professor Director of the Institute of Project Management –	*316 PB* Join a Zoom meeting https://us02web.zoom.us/j/6813032588 Conference ID: 6813032588

Date and time	EEC work with target groups	Position and Surname, Name Patronymic name target group participants	Contact form
		Amralinova Bakytzhan Bazarbekovna, PhD Deputy Director of the Institute of Automation and Information Technologies – Kalpeeva Zhuldyz Beishenalievna Doctor Ph.D. associate professor Head of the Department of Electronics, Telecommunications and Space Technologies – Tashtay Erlan, Ph.D., Assoc. Professor Head of the Department of Software Engineering – Abdoldina Farida Nauryzbaevna, Ph.D., Assoc. Professor Head of the department "Standardization, certification and metrology" – Erezhep Darkhan Yeseyuly, candidate of technical sciences, doctor PhD Head of the Department of Metallurgy and Mineral Processing – Madina Bogembaevna Barmenshinova, Ph.D., Associate. Professor Head of the Department of "Management and Mathematical Economics" – Turegeldinova Aliya Zhumabekovna, Ph.D., Ph.D.	
12.40-13.00	Work of the EEC	*IAAR External Experts*	*302 PB* Join a Zoom meeting https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
13.00-14.00	**lunch**		
14.00-14.40	Interview with teaching staff	*Annex 1*	*Cluster 1-302 PB* *Cluster 2 and 3 – 316 PB* *Join a Zoom meeting* *https://us02web.zoom.us/j/6813032588* *Conference ID: 681 303 2588*
14.40-15.40	Survey of teaching staff (in parallel)	*Annex 1.1*	The link is sent to the teacher's e-mail personally
14.40-15.10	Exchange of views among members of the external expert commission		*302 PB* Join a Zoom meeting https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588

Date and time	EEC work with target groups	Position and Surname, Name Patronymic name target group participants	Contact form
15.10-15.50	Interviews with students	*Annex 2*	*Cluster 1 - 302 PB* *Cluster 2 and 3 – 316 PB* *Join a Zoom meeting* *https://us02web.zoom.us/j/68 13032588* *Conference ID: 681 303 2588*
15.50-16.550	Questioning of students (in parallel)	*Annex 2.1*	The link is sent to the student's e-mail personally
15.50-16.20	Exchange of views among members of the external expert commission Technical break		
16.20-17.00	Interview with alumni	*Annex 3*	*Cluster 1 - 302 PB* *Cluster 2 and 3 – 316 PB* *Join a Zoom meeting* *https://us02web.zoom.us/j/68 13032588* *Conference ID: 681 303 2588*
17.00-17.20	Technical break		
17.20-18.00	Meeting with stakeholders (representatives of practice bases and employers)	*Annex 4*	*Cluster 1 - 302 PB* *Cluster 2 and 3 – 316 PB* *Join a Zoom meeting* *https://us02web.zoom.us/j/68 13032588* *Conference ID: 681 303 2588*
18.00-18.10	Work of the EEC. Opinion exchange		*302 PB* Join a Zoom meeting https://us02web.zoom.us/j/68 13032588 Conference ID: 681 303 2588
18.10-19.00	Dinner		
Day 2: March 27, 2024			
08.10-09.00	Transfer from the hotel to the University	*External IAAR experts, university coordinator –*	
09.00-09.15	Work of the EEC	*IAAR External Experts*	*302 PB* *Join a Zoom meeting* *https://us02web.zoom.us/j/68 13032588* *Conference ID: 681 303 2588*

Date and time	EEC work with target groups	Position and Surname, Name Patronymic name target group participants	Contact form
09.15-10:50	Attendance at scheduled classes (Appendix: links to classes)	*Annex 5*	
10.50-11.00	Technical break		
11.00-12.30	Visual inspection of the material, technical and educational laboratory base of the public organization	*Annex 6*	
12.30-13.00	Work of the EEC	*IAAR External Experts*	*302 PB* Join a Zoom meeting https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
13.00-14.00	**lunch**		
14.00-14.15	Technical break		
14.15-16.00	EEC work with documents, visiting departments		*302 PB* Join a Zoom meeting https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
16.00-18.00	EEC work with documents Selective visits to EP practice bases	*Annex 7*	*302 PB* Join a Zoom meeting https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
18.00-19.00	Dinner		
Day 3, march 28 2024			
08.30-09.00	Transfer from the hotel to the University	*External IAAR experts, university coordinator –*	
09.00-11.00	Discussion of results, voting (recorded)	*IAAR External Experts*	
11.00-11.15	Technical break		
11.15-12.30	Discussion of parameters, voting (recorded)	*IAAR External Experts*	

Date and time	EEC work with target groups	Position and Surname, Name Patronymic name target group participants	Contact form
12.30-13.00	Final meeting of the EEC with the university management	Member of the Board - Vice-Rector for Academic Affairs - Uskenbaeva Raisa Kabievna Director of the Institute of Energy and Mechanical Engineering – Elemesov Kasym Koptleuovich, Ph.D., professor Director of the Mining and Metallurgical Institute – Rysbekov Kanay Bakhytovich, Ph.D., professor Director of the Institute of Project Management – Amralinova Bakytzhan Bazarbekovna, PhD Deputy Director of the Institute of Automation and Information Technologies – Kalpeeva Zhuldyz Beishenalievna Doctor Ph.D. associate professor Head of the Department of Electronics, Telecommunications and CT - Tashtay Erlan, Ph.D., Assoc. Professor Head of the Department of Software Engineering – Abdoldina Farida Nauryzbaevna, Ph.D., Assoc. Professor Head of the department "Standardization, certification and metrology" – Erezhep Darkhan Yeseyuly, candidate of technical sciences, doctor PhD Head of the Department of Metallurgy and Mineral Processing – Madina Bogembaevna Barmenshinova, Ph.D., Associate. Professor Head of the Department of "Management and Mathematical Economics" – Turegeldinova Aliya Zhumabekovna, Ph.D., Ph.D.	*302 PB* Join a Zoom meeting https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
13.00-14.00	**lunch**		
14.00-16.00	EEC work with reports	*IAAR External Experts*	
16.00-16.15	Technical break		
16.15-18.00	EEC work with reports	*IAAR External Experts*	
18.00-19.00	Dinner		

Appendix 3. RESULTS OF A SURVEY OF TEACHERS

1. Total number of questionnaires: 51

2. Which EP do you serve:

7M06102 Machine Learning & Data Science	12	23,5%
8D06102 Machine Learning & Data Science	5	9,8%
6B07121 Space engineering and technology	5	9,8%
7M07138 Space engineering and technology	1	1%
6B07104 Electronic and Electrical Engineering	5	9,8%
7M07502 Metrology (by industry)	9	17,6%
6B07213 Mineral processing	5	9,8%
7M04105 Mineral and mining MBA	9	17,6%

3. Job title

Professor	10	19,6%
Docent	14	27,5%
Senior Lecturer	21	41,2%
Lecturer	3	5,9%
Head department	1	2%
And about. professors	2	4%
And about. docent	0	0%

4. Academic degree, academic title

Honored Worker of the Republic of Kazakhstan	0	0%
Doctor of Science	1	2%
Candidate of Sciences	19	37,3%
Master	16	31,4%
PhD	15	29,4%

5. Work experience

Less than 1 year	4 people	7,8%
1 year – 5 years	11 people	21,6%
Over 5 years	36 people	70,6%

№	Questions	Very well	Good	Relatively bad	Badly	Very bad	Didn't answer
1.	To what extent does the content of the educational program meet your scientific and professional interests and needs?	33 people (64,7%)	18 people (35,3%)	0 people (0%)	0 people (0%)	0 people (0%)	-
2.	How do you assess the opportunities provided by the University for the professional development of teaching staff?	30 people (58,8%)	19 people (37,3%)	2 people (3,9%)	0 people (0%)	0 people (0%)	-

3.	How do you assess the opportunities provided by the University for career growth of teaching staff?	24 people (47,1%)	23 people (45,1%)	4 people (7,8%)	0 people (0%)	0 people (0%)	-
4.	How do you assess the degree of academic freedom of the teaching staff?	21 people (41,2%)	27 people (52,9%)	2 people (3,9%)	1 people (2%)	0 people (0%)	-
5.	To what extent can teachers use their own						
	– Strategies	28 people (54,9%)	22 people (43,1%)	1 people (2%)	0 people (0%)	0 people (0%)	-
	– Methods	people (52,9%)	people (45,1%)	0 people (2%)	0 people (0%)	0 people (0%)	-
	– Innovation in the learning process	28 people (54,9%)	23 people (45,1%)	0 people (0%)	0 people (0%)	0 people (0%)	-
6.	How do you evaluate the work on organizing medical care and preventing diseases at the university?	17 people (33,3%)	28 people (54,9%)	5 people (9,8%)	1 people (2%)	people (0%)	-
7.	How much attention is paid by the management of the educational institution to the content of the educational program?	28 people (52,9%)	23 people (45,1%)	1 people (2%)	0 people (0%)	0 people (0%)	-
8.	How do you assess the sufficiency and accessibility of the necessary scientific and educational literature in the library?	24 people (47,1%)	24 people (47,1%)	3 people (5,9%)	0 people (0%)	0 people (0%)	-
9.	Assess the level of conditions created that take into account the needs of different groups of students?	18 people (35,3%)	32 people (62,7%)	1 people (2%)	0 people (0%)	0 people (0%)	-
10.	Evaluate the accessibility of the manual						
	– For students	31 people (60,8%)	19 people (37,3%)	1 people (2%)	0 people (0%)	0 people (0%)	-
	– For teachers	29 people (56,9%)	20 people (39,2%)	1 people (2%)	0 people (0%)	1 people (2%)	-
11.	Assess the involvement of teaching staff in the process of making management and strategic decisions	16 people (31,4%)	31 people (60,8%)	2 people (3,9%)	0 people (0%)	2 people (3,9%)	-
12.	How are innovative activities of teaching staff encouraged?	21 people (41,2%)	26 people (51%)	3 people (5,9%)	0 people (0%)	1 people (2%)	-
13.	Assess the level of feedback from teaching staff to management	20 people (39,2%)	27 people (52,9%)	3 people (5,9%)	0 people	1 people	-

					(0%)	(2%)	
14.	Assess the level of feedback from teaching staff to management	22 people (43,1%)	27 people (52,9%)	1 people (2%)	0 people (0%)	1 people (2%)	-
15.	Evaluate the created opportunities for professional and personal growth for each teacher and staff member	21 people (41,2%)	27 people (52,9%)	1 people (2%)	1 people (2%)	1 people (2%)	-
16.	Assess the adequacy of recognition of teachers' potential and abilities	23 people (45,1%)	25 people (49%)	1 people (2%)	1 people (2%)	1 people (2%)	-
17.	How is the work delivered?						
	– By academic mobility	19 people (37,3%)	28 people (54,9%)	3 people (5,9%)	1 people (2%)	0 people (0%)	-
	– To improve the qualifications of teaching staff	22 people (43,1%)	25 people (49%)	3 people (5,9%)	1 people (2%)	0 people (0%)	-
18.	Rate the support of the university and its leadership						
	– Faculty research endeavors	21 people (41,2%)	26 people (51,8%)	3 people (5,9%)	0 people (0%)	1 people (2%)	-
	– Development of new educational programs/academic disciplines/methods	25 people (49%)	26 people (51%)	0 people (0%)	0 people (0%)	0 people (0%)	-
19.	Assess the level of ability of teaching staff to combine teaching						
	– With scientific research	21 people (41,2%)	25 people (49%)	2 people (3,9%)	2 people (3,9%)	1 people (2%)	-
	– With practical activities	20 people (39,2%)	26 people (51%)	4 people (7,8%)	1 people (2%)	0 people (0%)	-
20.	Assess how well the students' knowledge acquired at this university corresponds to the realities of the requirements of the modern labor market	24 people (47,1%)	25 people (49%)	1 people (2%)	1 people (2%)	0 people (0%)	-
21.	How do the management and administration of the university perceive criticism addressed to them?	15 people (29,4%)	29 people (56,9%)	6 people (11,8%)	0 people (0%)	1 people (2%)	-
22.	Assess how well your workload meets your expectations and capabilities	16 people (31,4%)	31 people (60,8%)	4 people (7,8%)	0 people (0%)	0 people (0%)	-
23.	Assess the focus of educational programs/curricula on developing students' skills and abilities to analyze the situation and make forecasts	24 people (47,1%)	26 people (51%)	1 people (2%)	0 people (0%)	0 people (0%)	-

24.	Assess how well the educational program meets the expectations of the labor market and employers in terms of content and quality of implementation	26 people (51%)	22 people (43,1%)	2 people (3,9%)	1 people (2%)	people (0%)	-

6. Why do you work at this university?

- *Prestigious national technical university in Kazakhstan*
- *I am a graduate of this university and technical university No. 1*
- *I completed my bachelor's degree at this university*
- *Polytech is the best! I am a patriot of my university!*
- *This university is one of the most prestigious technical universities in the Republic of Kazakhstan and provides an opportunity to combine science and education.*
- *Openness, opportunities for growth and implementation.*
- *This university is the most important and technical university in the country. There are many specialists being trained here for the whole country. It has a long history and we are recognized in many countries.*
- *National university*
- *Leading technical university, good opportunities for growth as a teacher and research*
- *Contribution to my country*
- *There are several reasons: the team, the workload is favorable compared to other universities*
- *Comfortable environment for combining science and education*
- *For doing science*
- *Prestige and hope for the future regarding self-realization*
- *I work here in my specialty, there is a good atmosphere at the university, a good and friendly team.*
- *technical*
- *The best technical university of the Republic of Kazakhstan and my Alma mater*
- *I graduated from this university and have the opportunity to engage in scientific work. I am interested in my work in this team.*
- *I am a graduate of this university. I consider this university to be the leading technical university in Kazakhstan. Therefore, working at this university is considered an honor for me.*
- *Opportunity to combine research and teaching*
- *Because here I realize myself as a teacher and researcher*
- *Studied at this university*
- *Knows the objective assessment of workers' work.*
- *KazNRTU named after K.I. Satpayev is the first technical university, I am a graduate of this university, there is an opportunity to realize all my creative needs.*
- *I love working with students, I love the work schedule, I love the team*
- *The university has prospects in which I can be integrated*
- *Because this is the best university in the Republic of Kazakhstan and it is the only university that has a complete Microsoft 365 Education A3/A5+Moodle system, which allows you to apply the most advanced teaching methods, including those using AI.*
- *Study at this university, complete graduate school at this educational institution*
- *And the reason why I chose my activity is that this university is the advanced technical university in Kazakhstan*
- *Because conditions are created here for both students and employees*
- *I like working.*

- *I studied here*
- *everything suits me*

Nthe salary corresponds to the workload, the material and technical base is sufficient for carrying out research work in the field of metrology, friendly staff, the management of the university and the head of the department provide support and stimulation for the development of teachers both in teaching and scientific activities, a good canteen

- *Satisfy all working conditions*
- *I like it*
- *A familiar university, I have been working since 1976.*
- *I have a basic diploma, a master's degree in this specialty, and a doctorate in "Metallurgy"*
- *First technical university*
- *I like it, I feel comfortable*
- *After all, I studied at this university, I have basic and master's diplomas in this specialty (Mineral processing)*
- *I really like the close connection between production and education, the corporate spirit*
- *Because this University is my native University, where I studied.*
- *High quality training*

7. How often are master classes and readings with the participation of practitioners held as part of your course?

more often than not	7	13,7%
Often	32	62,7%
Sometimes	12	23,5%
very rarely	0 people	0%
never	0 people	0%

8. How often do external teachers (domestic and foreign) participate in the learning process?

more often than not	5	9,8%
Often	30	58,8%
Sometimes	14	27,5%
very rarely	2	3,9%
never	0 people	0%

9. How often do you encounter the following problems in your work: (please give the answer on each line)

	Often	Sometimes	Never	No answer
Lack of classrooms	3 people (5,9%)	20 people (39,2%)	28 people (54,9%)	-
Imbalance of teaching load across semesters	2 people (3,9%)	19 people (37,3%)	30 people (58,8%)	-
Inaccessibility of necessary literature in the library	4 people (7,8%)	19 people (37,3%)	28 people (54,9%)	-
Overcrowding of study groups (too many students in	5 people (9,8%)	18 people (35,9%)	28 people (54,9%)	-

a group)				
Inconvenient schedule	5 people (9,8%)	23 people (45,1%)	23 people (45,1%)	-
Inadequate classroom conditions	2 people (3,9%)	27 people (52,9%)	22 people (43,1%)	-
Lack of Internet access/weak Internet	9 people (17,6%)	28 people (54,9%)	14 people (27,5%)	-
Lack of interest among students in learning	1 people (2%)	29 people (56,9%)	21 people (41,2%)	-
Late receipt of information about events	1 people (2%)	18 people (35,3%)	32 people (62,7%)	-
Lack of technical equipment in classrooms	4 people (7,8%)	29 people (56,9%)	18 people (35,3%)	-
Other problems	− *No* − *No* − *No* − *−* − *No problem* − *Lack of funds to invite scientists from far abroad.* − *Problem with Internet* − *Low salary* − *Some university buildings, such as State University of Culture, have very poor WiFi.* − *questions in working order* − *We solve problems as they arise, the management of the institute and the university as a whole are open, always contribute to the timely resolution of problems that arise* − *If there are more computer classes* − *Inconsistency of the requirements of the Ministry of Education and Science for EP documents and the business process with modern new requirements that have arisen due to scientific and technological progress. The MES requirements were developed long before the advent of such services as ChatGPTPlus and MicrosoftCopilot bots. The appearance of these bots has made many of the requirements of the Ministry of Education and Science meaningless. Something needs to be done about this, because otherwise all these requirements will come into catastrophic conflict with reality.* − *No problem* − *Not working stand* − *The laboratory and technical base is lame* − *There are no normal projectors, I had to buy HDM drives myself, no marker boards, no markers (a small thing, but still).* − *renovations in classrooms* − *No, everything ok* − *No.* − *No*			

1.   There are many different sides and aspects in the life of a university that in one way or another affect every teacher and employee. Rate how satisfied you are:

Question	Completely satisfied	Partially satisfied	Not satisfied	I find it difficult to answer
The attitude of the university management towards you	38 people (74,5%)	10 people (19,6%)	2 people (3,9%)	1 people (2%)
Relationships with immediate management	36 people (70,6%)	9 people (17,6%)	4 people (7,8%)	2 people (3,9%)
Relations with colleagues at the department	46 people (90,2%)	4 people (7,8%)	0 people (%)	1 people (2%)
Participation in management decision making	33 people (64,7%)	13 people (25,5%)	3 people (5,9%)	2 people (3,9%)
Relations with students	44 people (86,3%)	6 people (11,8%)	1 people (2%)	0 people (0%)
Recognition of your successes and achievements by the administration	34 people (66,7%)	13 people (25,5%)	3 people (5,9%)	1 people (2%)
Support for your suggestions and comments	32 people (62,7%)	14 people (27,5%)	3 people (5,9%)	2 people (3,9%)
Activities of the university administration	33 people (64,7%)	15 people (29,4%)	2 people (3,9%)	1 people (2%)
Terms of payment	20 people (39,2%)	21 people (41,2%)	9 people (17,6%)	1 people (2%)
Working conditions, list and quality of services provided at the university	33 people (64,7%)	15 people (29,4%)	3 people (5,9%)	0 people (0%)
Labor protection and safety	38 people (74,5%)	10 people (19,6%)	2 people (3,9%)	1 people (2%)
Managing changes in the activities of the university	36 people (70,6%)	12 people (23,5%)	2 people (3,9%)	1 people (2%)
Providing a social package: rest, sanatorium treatment, etc.	27 people (52,9%)	14 people (27,5%)	4 people (7,8%)	6 people (11%)
Organization and quality of food at the university	26 people (51%)	20 people (38,2%)	0 people (0%)	5 people (9,8%)
Organization and quality of medical care	26 people (51%)	17 people (33,3%)	2 people (3,9%)	6 people (11,8%)

<u>Appendix 4. RESULTS OF THE STUDENT SURVEY</u>

Total number of questionnaires: 43

1. **Your educational program?**

7M06102 Machine Learning & Data Science (master's degree)	3	7%
8D06102 Machine Learning & Data Science (PhD)	2	4,7%
6B07121 Space engineering and technology (bachelor's degree)	3	7%
7M07138 Space engineering and technology (master's degree)	2	4,7%
6B07104 Electronic and Electrical Engineering (bachelor's degree)	20	46,5%
7M07502 Metrology (by industry) (master's degree)	1	2,3%
6B07213 Mineral processing(bachelor's degree)	3	7%
7M04105 MBA in the mining and metallurgical complex (master's degree)	4	9,3%

2. **Gender**

Male	34	79,1%
Female	9	20,9%

3. **Rate how satisfied you are:**

Question	Completely satisfied	Partially satisfied	Not satisfied	I find it difficult to answer	Completely satisfied
1. Relations with the dean's office	38 people (88,4%)	4 people (9,3%)	1 people (2,3%)	0 people (0%)	0 people (0%)
2. Level of accessibility of the dean's office	37 people (86%)	4 people (9,3%)	0 people (0%)	2 people (4,7%)	0 people (0 %)
3. The level of accessibility and responsiveness of the university management	32 people (74,4%)	10 people (23,3%)	1 people (2,3%)	0 people (0%)	0 people (0%)
4. Availability of academic advising to you	31 people (72,1%)	11 people (25,6%)	1 people (2,3%)	0 people (0%)	0 people (0%)
5. Support with educational materials during the learning process	29 people (67,4%)	13 people (30,2%)	1 people (2,3%)	0 people (0%)	0 people (0%)
6. Availability of counseling on personal problems	27 people (62,8%)	14 people (32,6%)	0 people (0%)	1 people (2,3%)	1 people (2,3%)
7. Relationship between student and teacher	36 people (83,7%)	7 people (16,3%)	0 people (0%)	0 people (0%)	0 people (0%)

Question	Completely satisfied	Partially satisfied	Not satisfied	I find it difficult to answer	Completely satisfied
8. Financial and administrative services of the educational institution	31 people (72,1%)	10 people (23,3%)	1 people (2,3%)	0 people (0%)	1 people (2,3%)
9. Availability of health services	30 people (69,8%)	8 people (18,6%)	1 people (2,3%)	1 people (2,3%)	3 people (7%)
10. Quality of medical care at the university	31 people (72,1%)	7 people (16,3%)	1 people (2,3%)	1 people (2,3%)	3 people (7%)
11. Level of accessibility of library resources	32 people (74,4%)	9 people (20,9%)	0 people (0%)	1 people (2,3%)	1 people (2,3%)
12. The quality of services provided in libraries and reading rooms	32 people (74,4%)	9 people (20,9%)	0 people (0 %)	1 people (2,3%)	1 people (2,3%)
13. Satisfaction with existing educational resources of the university	31 people (72,1%)	11 people (25,6%)	1 people (2,3%)	0 people (0%)	0 people (0%)
14. Availability of computer classes	28 people (65,1%)	13 people (30,2%)	0 people (0%)	0 people (0%)	2 people (4,7%)
15. Availability and quality of Internet resources	30 people (69,8%)	11 people (25,6%)	1 people (2,3%)	1 people (2,3%)	0 people (0%)
16. The content and information content of the website of educational organizations in general and faculties (schools) in particular	31 people (72,1%)	12 people (27,9%)	0 people (0%)	0 people (0%)	0 people (0%)
17. Study rooms, auditoriums for large groups	31 people (72,1%)	11 people (25,6%)	0 people (0%)	0 people (0%)	1 people (2,3%)
18. Lounges for students (if available)	32 people (74,4%)	8 people (18,6%)	1 people (2,3%)	0 people (0%)	2 people (4,7%)
19. Clarity of procedure for taking disciplinary action	31 people (72,1%)	10 people (23,3%)	0 people (0%)	0 people (0%)	2 people (4,7%)
20. The quality of the educational program as a whole	33 people (76,7%)	8 people (18,6%)	2 people (4,7%)	0 people (0%)	0 people (0 %)
21. The quality of educational programs in the EP	36 people (83,7%)	7 people (16,3%)	0 people (0%)	0 people (0%)	0 people (0%)
22. Teaching methods in general	32 people (74,4%)	10 people (23,3%)	1 people	0 people	0 people

Question	Completely satisfied	Partially satisfied	Not satisfied	I find it difficult to answer	Completely satisfied
			(2,3%)	(0%)	(0%)
23. Quick response to feedback from teachers regarding the educational process	34 people (79,1%)	8 people (18,6%)	1 people (2,3%)	0 people (0%)	0 people (0%)
24. Overall quality of teaching	34 people (79,1%)	8 people (18,6%)	1 people (2,3%)	0 people (0 %)	0 people (0%)
25. Academic load/requirements for the student	30 people (69,8%)	12 people (27,9%)	1 people (2,3%)	0 people (0%)	0 people (0%)
26. Requirements of teaching staff for students	31 people (72,1%)	10 people (23,3%)	2 people (4,7%)	0 people (0%)	0 people (0%)
27. Information support and explanation before entering the university of the rules of admission and the strategy of the educational program (specialty)	32 people (74,4%)	10 people (23,3%)	1 people (2,3%)	0 people (0%)	0 people (0%)
28. Informing the requirements in order to successfully complete a given educational program (specialty)	33 people (76,7%)	8 people (18,6%)	1 people (2,3%)	0 people (0%)	1 people (2,3%)
29. The quality of examination materials (tests and examination questions, etc.)	32 people (74,4%)	10 people (23,3%)	1 people (2,3%)	0 people (0 %)	0 people (0%)
30. Objective assessment of knowledge, skills and other educational achievements	34 people (79,1%)	7 people (16,3%)	2 people (4,7%)	0 people (0%)	0 people (0%)
31. Available computer classes	29 people (67,4%)	11 people (25,6%)	1 people (2,3%)	0 people (0%)	2 people (4,7%)
32. Available scientific laboratories	26 people (60,5%)	13 people (30,2%)	2 people (4,7%)	0 people (0%)	2 people (4,7%)
33. Objectivity and fairness of teachers	33 people (76,7%)	9 people (20,9%)	1 people (2,3%)	0 people (0%)	0 people (0%)
34. Informing students about courses, educational programs and the academic degree they receive	34 people (79,1%)	7 people (16,3%)	2 people (4,7%)	0 people (0%)	0 people (0%)
35. Providing students with hostel accommodation	27 people (62,8%)	12 people (27,9%)	0 people (0%)	0 people (0%)	4 people (9,3%)

4. Please rate how much you agree:

Statement	Full agreement	Agreement	Partially agree	Don't agree	Complete disagreement	Didn't answer
1. The course syllabus was clearly presented	27 people (62,8%)	13 people (30,2%)	3 people (7%)	0 people (0%)	0 people (0%)	-
2. The course content is well structured	29 people (67,4%)	12 people (27,9%)	2 people (4,7%)	0 people (0%)	0 people (0%)	-
3. Key terms are sufficiently explained	30 people (69,8%)	9 people (20,9%)	4 people (9,3%)	0 people (0%)	0 people (0%)	-
4. The material proposed by the teacher is relevant and reflects the latest achievements of science and practice	30 people (69,8%)	9 people (20,9%)	4 people (9,3%)	0 people (0%)	0 people (0%)	-
5. The teacher uses effective teaching methods	29 people (67,4%)	12 people (27,9%)	2 people (4,7%)	0 people (0%)	0 people (0%)	-
6. The teacher knows the material being taught	32 people (69,8%)	13 people (30,2%)	0 people (0%)	0 people (0%)	0 people (0%)	-
7. The teacher's presentation is clear	30 people (74,4%)	8 people (18,6%)	3 people (7%)	0 people (0%)	0 people (0%)	-
8. The teacher presents the material in an interesting way	29 people (67,4 %)	9 people (20,9 %)	5 people (11,6 %)	0 people (0%)	0 people (0 %)	-
9. Objectivity in assessing knowledge, skills and other educational achievements	30 people (69,8 %)	8 people (18,6 %)	3 people (7 %)	1 people (2,3 %)	1 people (2,3 %)	-
10. Timely assessment of students' educational achievements	32 people (74,4%)	9 people (20,9 %)	2 people (4,7%)	0 people (0%)	0 people (0 %)	-
11. The teacher satisfies my requirements for personal development and professional formation	30 people (69,8 %)	10 people (23,3 %)	3 people (7 %)	0 people (0 %)	0 people (0 %)	-
12. The teacher stimulates student activity	28 people (65,1 %)	10 people (23,3 %)	4 people (9,3%)	1 people (2,3 %)	0 people (0 %)	-
13. The teacher stimulates students' creative thinking	28 people (65,1 %)	11 people (25,6 %)	4 people (9,3%)	0 people (0 %)	0 people (0 %)	-
14. The appearance and manners of the teacher are adequate	33 people (76,7 %)	10 people (23,3 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)	-

15. The teacher shows a positive attitude towards students	34 people (79,1 %)	9 people (20,9 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)	-
16. The system for assessing educational achievements (seminars, tests, questionnaires, etc.) reflects the content of the course	32 people (74,4 %)	10 people (23,3 %)	1 people (2,3 %)	0 people (0 %)	0 people (0 %)	-
17. The assessment criteria used by the teacher are clear	33 people (76,7 %)	9 people (20,9 %)	1 people (2,3 %)	0 people (0 %)	0 people (0%)	-
18. The teacher objectively evaluates student achievements	31 people (72,1 %)	10 people (23,3 %)	1 people (2,3 %)	1 people (2,3 %)	0 people (0 %)	-
19. The teacher speaks professional language	34 people (79,1 %)	8 people (18,6%)	1 people (2,3 %)	0 people (0 %)	0 people (0 %)	-
20. The organization of education provides sufficient opportunity for sports and other leisure activities	28 people (65,1 %)	12 people (27,9 %)	2 people (4,7 %)	0 people (0 %)	1 people (2,3%)	-
21. Facilities and equipment for students are safe, comfortable and modern	29 people (67,4 %)	12 people (27,9 %)	1 people (2,3 %)	0 people (0 %)	1 people (2,3 %)	-
22. The library is well equipped and has a fairly good collection of books	30 people (69,8%)	11 people (25,6 %)	1 people (2,3 %)	0 people (0 %)	1 people (2,3 %)	-
23. Equal opportunities are provided to all students	31 people (72,1 %)	11 people (25,6 %)	0 people (0 %)	1 people (2,3 %)	0 people (0 %)	-

4. Other concerns regarding teaching quality: 21 responses

- *I don't have any problems in learning*
- *No*
- *No*
- *I didn't see any problems*
- *Everything suits me!*
- *It would be better if fully equipped classrooms (science labs) were opened and fully equipped classrooms (science labs) were provided rather than the quality of education.*
- *There are no problems with getting an education*
- *No problem*
- *Fewer laboratory rooms*
- *There were no problems*
- *Super*
- *No problem*
- *No*
- *it would be nice if fully equipped classrooms were opened and looked at rather than the quality of education.*
- *I have no problems with training, but it would be nice to open more laboratory rooms for the EEE profession*
- *It would be nice if fully equipped classrooms were opened*