



«АККРЕДИТТЕУ ЖӘНЕ РЕЙТИНГТИҢ  
ТӘУЕЛСІЗ АГЕНТТІГІ» КЕМ

НУ «НЕЗАВИСИМОЕ АГЕНТСТВО  
АККРЕДИТАЦИИ И РЕЙТИНГА»

INDEPENDENT AGENCY FOR  
ACCREDITATION AND RATING

# REPORT

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

8D07110 DIGITAL ENGINEERING OF MACHINERY AND  
EQUIPMENT  
NON-COMMERCIAL JOINT-STOCK COMPANY «KAZAKH  
NATIONAL RESEARCH TECHNICAL UNIVERSITY NAMED  
AFTER K.I. SATPAYEV»

Date of the visit of the EEC: from "19" to "21" April 2022

**INDEPENDENT AGENCY FOR ACCREDITATION AND RATING**  
**External Expert Commission**

**Addressed to the  
IAAR Accreditation  
Council**



**REPORT**

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NON-COMMERCIAL JOINT-STOCK COMPANY «KAZAKH NATIONAL  
RESEARCH TECHNICAL UNIVERSITY NAMED AFTER K.I. SATPAYEV»**

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**Almaty "21" April 2022**

## **(I) LIST OF DESIGNATIONS AND ABBREVIATIONS**

**BD** - basic disciplines  
**SOSE** - state obligatory standard education  
**DP** - documented procedure  
**RET** - remote educational technology  
**UNT** - single national testing  
**ME&M** - Mechanical Engineering and Modeling  
**ITP** - individual training plan  
**CTL** - credit technology learning  
**CED** - catalog elective disciplines  
**MES RK** - Ministry education and science Republic Kazakhstan  
**MEP** - modular educational program  
**MTP** - modular training plan  
**RDS** - research of doctoral students  
**GED** - general educational disciplines  
**EP** - educational program  
**PD** - profiling disciplines  
**RK** - Republic Kazakhstan  
**RUP** - worker training plan  
**QMS** - system management quality  
**IWDS** - independent Work doctoral students  
**IWDST** - independent Work doctoral students under leadership teacher  
**TTP** - typical training plan  
**EAS** – educational and auxiliary staff  
**EMCS** - educational and methodological complex of the specialty  
**EMW** - educational and methodical Work  
**CPR**- Center for Public Relations  
**EUMM** - electronic educational methodological materials

## **(II) INTRODUCTION**

In accordance with Order No. 44-22-OD dated February 23, 2022 of the Director General of the Independent Accreditation and Rating Agency, from April 19 to April 21, 2022, an external expert commission assessed the compliance of the educational program 8D07110 Digital Engineering of Machinery and equipment with the standards of primary specialized accreditation of the educational program (Ex-ante) of the organization of higher and postgraduate education (put into effect by Order No. 68-18/1-OD dated May 25, 2018).

The report of the external expert commission (EAC) contains an assessment of the submitted educational programs by the criteria of the IAAR standards, recommendations of the EAC for further improvement of educational programs and parameters of the profile of educational programs.

### **Composition of the EAC:**

*The Chairman of the IAAR EEC* – Alexander Cheslavovich Luschik, Doctor of Physical and Mathematical Sciences, Professor, Head of the Laboratory of Ion Crystal Physics at the Institute of Physics of the University of Tartu (Tartu, Estonia).

*Coordinator of the IAAR EEC* – Niyazova Guliyash Balkenovna, project manager for institutional and specialized accreditation of universities (Nur-Sultan, Republic of Kazakhstan).

### ***Cluster 1. Primary specialized accreditation***

**6B05103**  
**Engineering**  
**ecology**

*IAAR expert* – Berdenov Zharas Galimzhanovich, PhD, Associate Professor of the L.N. Gumilyov Eurasian National University (Nur-Sultan, Republic of Kazakhstan).

*IAAR expert, student* – Serikkaliev Tasbolat Serikkaliyly, Executive Director of the Branch of the Alliance of Students of the Higher Educational Institution in the West Kazakhstan region (Uralsk, Republic of Kazakhstan).

**7M08601**     **Water**  
**resources and water**  
**use**

*IAAR expert* – Mukhamedzhanova Rufina Rinatovna, Director of the Quality Department of the Almaty University of Energy and Communications named after G. Daukeev (Almaty, Republic of Kazakhstan).

**8D07104** **Oil and**  
**gas and ore**  
**geophysics**

*IAAR expert* – Alexey Vladimirovich Lozhnikov, Doctor of Technical Sciences, Professor of the National Technical University "Dnipro Polytechnic" (Dnipro, Ukraine).

### ***Cluster 2. Primary specialized accreditation***

**6B07305**  
**Transport**  
**construction,**  
**7M07320**  
**Transport**  
**construction**

*IAAR expert* – Rabat Ondabek Zhanakhmetuly, Doctor of Technical Sciences, Professor of the Kazakh Automobile and Road Academy named after L.B.Goncharov (Almaty, Republic of Kazakhstan).

**6B07115**  
**Technological**  
**machines**     **and**  
**equipment**     **(by**  
**industry)**

*IAAR expert* – Sembayev Nurbolat Sakenovich, Candidate of Technical Sciences, Associate Professor Toraigyrov University (Pavlodar, Republic of Kazakhstan).

*IAAR expert, student* – Bekmyrza Zhumash Aitzhanuly, student of EP 8D07102 Technological machines and equipment (mechanical engineering) Kostanay Regional University named after A.Baitursynov

(Kostanay, Republic of Kazakhstan).

**8D07114**  
**Nanomaterials and nanotechnologies**  
*IAAR expert* – Nazhipkyzy Meruert, Candidate of Chemical Sciences, Associate Professor of Al-Farabi Kazakh National University (Almaty, Republic of Kazakhstan).

**Cluster 3. Primary specialized accreditation**

**7M11201**  
**Occupational health and safety at work**  
*IAAR expert* – Baytelesova Laura Ilyasovna, Candidate of Chemical Sciences, Associate Professor of the West Kazakhstan Innovation and Technology University (Uralsk, Republic of Kazakhstan).

**8D07304**  
**Engineering systems and networks**  
*IAAR expert* – Kolpakova Valentina Pavlovna, Doctor of Technical Sciences, Associate Professor of D. Serikbayev East Kazakhstan Technical University (Ust-Kamenogorsk, Republic of Kazakhstan).

**8D07305**  
**Construction and production of building materials and structures**  
*IAAR expert* – Rakhimov Murat Amanzholovich, Candidate of Technical Sciences, Associate Professor of Karaganda Technical University (Republic of Kazakhstan).

**8D07303**  
**Construction and production of building materials and structures.**  
*IAAR expert* – Saktaganova Nargul Amanovna, PhD, Associate Professor of Korqyt ata Kyzylorda University (Kyzylorda, Republic of Kazakhstan).

*IAAR expert, employer* – Yuri A. Pilipenko, Chairman of the International Association of Manufacturers of Goods and Services "Expobest" (Almaty, Republic of Kazakhstan).

**Cluster 4. Primary specialized accreditation**

**8D11301**  
**Transportation services**  
*IAAR expert* – Pak Yuri Nikolaevich, Doctor of Technical Sciences, Professor of Karaganda Technical University (Karaganda, Republic of Kazakhstan).

**7M04104 Executive MBA**  
*IAAR expert* – Inna Sidorova, MBA, Master of Economics, Business Manager, BGC Partners, (London, United Kingdom).

**8D04102**  
**Management**  
*IAAR expert* – Maya Arzayeva, Candidate of Economic Sciences, Associate Professor of the Academy of Logistics and Transport (Almaty, Republic of Kazakhstan).

*IAAR expert, student* – Kereeva Tansholpan Makhambetkyzy, 2nd year student of EP 7M04106 Aktobe Regional University named after K. Zhubanov (Aktobe, Republic of Kazakhstan).

**Cluster 5. Primary specialized accreditation**

**6B07114**  
**Biomedical engineering**  
*IAAR expert* – Oksana Yurikova, PhD, Senior lecturer at Al-Farabi Kazakh National University (Almaty, Republic of Kazakhstan).

**6B07112**  
**Electronic and Electrical Engineering**  
*IAAR expert* – Serik Karataevich Zhumazhanov, Candidate of Technical Sciences, Senior lecturer at the Kazakh Agrotechnical University named after S.Seifullin (Nur-Sultan, Republic of Kazakhstan).

*IAAR expert* – Shunkeev Kuanyshbek Shunkeevich, Doctor of Physical and Mathematical Sciences, Professor of Aktobe Regional University named after K.Zhubanov (Aktobe, Republic of Kazakhstan).

**8D06105**  
**Information security systems**  
*IAAR expert, student* – Talipova Janel Sairanovna, 2nd year student of EP 7M07105 Automation and Management of Kazakh Agrotechnical

**6B07112**  
**Electronic and**  
**Electrical**  
**Engineering**

University named after S.Seifullin (Nur-Sultan, Republic of Kazakhstan).

**Cluster 6. Primary specialized accreditation**

**8D06104**  
**Cybernetics and**  
**artificial**  
**intelligence**

*IAAR expert* – Gnatushenko Vladimir Vladimirovich, Doctor of Technical Sciences, Professor of the National Technical University "Dnipro Polytechnic" (Dnipro, Ukraine).

*IAAR expert* – Bakhtiyar Balzhan Turepashkyzy, Candidate of Technical Sciences., Associate Professor of the Academy of Logistics and Transport (Almaty, Republic of Kazakhstan).

**6B07106**  
**Engineering**  
**mechanics**

*IAAR expert* – Andrey Kichuk, President of the National Agency for Quality Assurance in Education and Research - ANACEC (Chisinau, Moldova).

**8D07110**  
**Digital engineering**  
**of machinery and**  
**equipment**

*IAAR expert* – Mashan Togzhan Turgalievna, Candidate of Chemical Sciences, Associate Professor of L.N. Gumilyov Eurasian National University (Nur-Sultan, Republic of Kazakhstan).

**8D07109**  
**Innovative**  
**technologies and**  
**new inorganic**  
**materials**

*IAAR expert, student* – Asylkhanova Dana Dauletkyzy, studying double-degree EP 7M07121 Nanomaterials and Nanotechnologies in Chemistry of Al-Farabi Kazakh National University – Peoples' Friendship University of Russia (Almaty, Republic of Kazakhstan).

The EEC was guided by:

- The program of the visit of the IAAR EEC with the use of a hybrid model at the Kazakh National Research Technical University named after K.I. Satpayev. Developed on the basis of the Guidelines for the Organization and conduct of the external evaluation procedure in the process of accreditation of an educational organization and (or) an educational program (Order of the Director of the IAAR No. 42-17-OD dated June 30, 2017).

- Guidelines for conducting self-assessment for the primary specialized accreditation of the educational program (Ex-ante) of the organization of higher and (or) postgraduate education. Astana: IAAR, 2018 – 53 p.

- Standards of primary specialized accreditation of the educational program (Ex-ante) of the organization of higher and (or) postgraduate education (Republic of Kazakhstan). Astana: NAAR, 2018 – 25 p. (Order of the Director of the Non-profit Institution "Independent Agency of Accreditation and Rating" No. 68-18/1-OD dated May 25, 2018).

- Guidelines for organizing and conducting an on-line visit of an external expert commission (including a visit of an expert group on post-accreditation monitoring) for the period of restrictive measures in connection with the COVID-19 pandemic. Nur-Sultan: IAAR, 2020 – 11 p. (Order of the Director General of NU "Independent Agency of Accreditation and Rating" dated July 01, 2020 No. 58-20-OD).

### **(III) PRESENTATION OF THE EDUCATIONAL ORGANIZATION**

KazNRTU named after K.I. Satpayev is the flagship of higher technical education in the country.

The following main stages can be distinguished in the formation and development of one of the oldest educational institutions of the Republic of Kazakhstan:

- 1934 – 1960 – Kazakh Mining and Metallurgical Institute (KazMMI);

- 1960 – 1990 – Kazakh Polytechnic Institute (KazPTI);
- since 1990 – Kazakh National Technical University (KazNTU).

In 1999, KazNTU was named after an outstanding scientist, academician Kanysh Imantaevich Satpayev, by the decree of the Government of the Republic of Kazakhstan for special merits in the training of engineering and technical personnel of the country.

July 5, 2001 By the Decree of the President of the Republic of Kazakhstan N.A.Nazarbayev, the University was given a special status – it became a major educational center coordinating the training of scientific and engineering personnel in Kazakhstan.

By the Decree of the Government of the Republic of Kazakhstan dated December 19, 2014 No. 1330 "On the establishment of a noncommercial joint stock company "Kazakh National Research Technical University named after K.I. Satpayev", the University was reorganized into the NC JSC "KazNRTU" named after K.I. Satpayev.

The university has implemented the transition to a multi-level system of higher and postgraduate education (bachelor's degree – master's degree - PhD). At the same time, the University has a license in 41 areas of training, including bachelor's degree – 15; doctoral studies – 15; PhD doctoral studies – 11.

Specialists are trained in all educational programs of higher and postgraduate education in the state and Russian languages.

KazNTU named after K.I. Satpayev takes an active position in the implementation of the international activities of the university in order to integrate into the world educational space and become an internationally recognized research educational institution in the field of engineering and technology. To date, the University has concluded 173 agreements, cooperation agreements and memoranda of understanding with foreign universities, organizations and research centers. Interaction with educational institutions is growing every year.

Since 2005, the KazNITU named after K.I. Satpayev has implemented a quality management system conforming to ISO 9001:2000, certified by the "Russian Register" and "IQNet" in relation to educational activities for training personnel with higher professional education based on the state educational standards of the Republic of Kazakhstan in specialties and areas in accordance with the field of licensing, state certification and accreditation.

There are 11 Dissertation Councils at KazNRTU named after K.I. Satpayev.

#### **(IV) DESCRIPTION OF THE PREVIOUS ACCREDITATION PROCEDURE**

The educational program 8D07110 Digital Engineering of machinery and equipment is undergoing an external assessment for compliance with the standards of primary specialized accreditation for the first time.

#### **(V) DESCRIPTION OF THE EEC VISIT**

The following meetings were held within the framework of the visit of the IAAR external expert commission on the assessment of the quality of educational programs of the Noncommercial Joint Stock Company "Kazakh National Research Technical University named after K.I. Satpayev":

Rector	Begentayev M.M.
Vice-Rector	Vice-Rector for Academic Affairs – Zhautikov B.A., Vice-Rector for Corporate Development and Strategic Planning - Kuldeev E.I., Vice-Rector for Science and International Cooperation - Shokparov A.Zh., Vice-Rector for Socio-Cultural Development - Alimkhanov M.S., Chief of Staff of the Board – Shalabaev S.K.
Heads of structural divisions	Chief Accountant – Togzhigitova G.B., Director of Infrastructure Management – Tynybekov R.I., Director of the Department of Information Technology – Alchimbayev A.B., Director of Academic Affairs – Zhunusbekova N.M., Director of the Center for Public Relations –

	Balgabaeva M.K., Director of the Department of Science – Baktygali Zh.K., Director of the Department of Corporate Development – Yensebayeva M.Z., Director of the Department of International Cooperation – Abdykalikov A.A., Director of the Registrar office – Kyzylbayev N.K., Director of the Institute of Distance Education and Professional Development – Simonov A.G., HR Director – Beisova A.K., Director of the Scientific Library – Uzbayeva B.Zh., Director of the Rating Center – Alipbayev D.D., Director of the Department of Youth and Sports Affairs – Tolepbergen A.T., Head of the Department of Postgraduate Education – Khvedelidze M.Zh., Executive Secretary of the Admissions Committee – Narbayev M.T., Head of the Quality Assessment Department – A. Sauranbayeva
Directors of institutes	Director of the Institute of Geology and Oil and Gas Business – Syzdykov A.H., Director of the Institute of Architecture and Construction – Kuspangaliyev B.U., Director of the Institute of Energy and Mechanical Engineering – Elemensov K.K., Director of the Institute of Automation and Information Technology – Uskenbayeva R.K., Director of the Mining and Metallurgical Institute - Rysbekov K.B., Director of the Institute of Project Management – Amralinova B.B.
EP managers	Head of the Department "Chemical Processes and Industrial Ecology" – Kubekova Sh.N., Head of the Department "Hydrogeology, Engineering and Oil and Gas Geology" – Ensebaev T.A., Head of the Department "Geophysics" – Abetov A.E., Head of the Department "Construction and Building Materials" – Nashiraliev Zh.T., Head of the Department "Technological Machines and Transport" – Bortebaev S.A., Head of the Department of Materials Science, Nanotechnology and Engineering Physics – Kakimov U.K., Head of the Department of Engineering Systems and Networks – Alimova K.K., Head of the Department of Logistics – Mukhanova G.S., Head of the Department of "Management and Mathematical Economics" – Turegeldinova A.Zh., Head of the Department of "Robotics and Automation Equipment" – Ozhikenov K.A., Head of the Department of "Electronics, Telecommunications and Space Technologies" – Tashtai E., Head of the Department of "Cybersecurity, Information Processing and Storage" – Satybaldieva R.Zh., Head of the Department "Engineering Mechanics and Modeling" – A. Kaltaev

The program also provided for:

- Interviews with teaching staff on accredited programs;
- Visual inspection of infrastructure and laboratory capacity;
- Interviews with students on accredited EP;
- Visiting the practice bases of the EP;
- The final meeting of the EEC with the leadership of KazNRTU.

The work of the EEC was carried out from April 19 to April 21, 2022. Detailed information information indicating the date, time and direct participants is given in the program of the visit.



## **(VI) COMPLIANCE WITH SPECIALIZED ACCREDITATION STANDARDS**

### **6.1. Standard "Educational Program Management"**

- ✓ *The university should demonstrate the development of a goal and strategy for the development of the OP based on the analysis of external and internal factors with the broad involvement of a variety of stakeholders.*
- ✓ *The quality assurance policy should reflect the relationship between scientific research, teaching and learning.*
- ✓ *The university demonstrates the development of a culture of quality assurance.*
- ✓ *Commitment to quality assurance should apply to any activity performed by contractors and partners (outsourcing), including the implementation of joint/double-degree education and academic mobility.*
- ✓ *The management of the EP 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 orientation of its activities to meet the needs of students, the state, employers and other interested parties.*
- ✓ *The management of the EP demonstrates the functioning of mechanisms for the formation and regular revision of the development plan of the EP and monitoring its implementation, assessing the achievement of training goals, meeting the needs of students, employers and society, making decisions aimed at continuous improvement of the EP.*
- ✓ *The management of the EP should involve representatives of groups of interested persons, including employers, students and teaching staff in the formation of the development plan of the EP.*
- ✓ *The management of the EP should demonstrate the individuality and uniqueness of the development plan of the educational institution, 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 framework of the EP, the distribution of staff duties, the differentiation of 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, as well as involves all stakeholders in this process.*
- ✓ *The management of the EP should ensure the transparency of the management system, the functioning of the internal quality assurance system, including its design, management and monitoring, and making appropriate decisions.*
- ✓ *The management of the EP should carry out risk management.*
- ✓ *The management of the educational institution should ensure the participation of representatives of interested persons (employers, teaching staff, students) in the collegial management bodies of the educational program, as well as their representativeness in making decisions on the management of the educational program.*
- ✓ *The university must demonstrate innovation management within the framework of the EP, including the analysis and implementation of innovative proposals.*
- ✓ *The management of the EP should demonstrate its openness and accessibility to students, teaching staff, employers and other interested persons.*
- ✓ *The management of the EP confirms the completion of training in educational management programs.*
- ✓ *The management of the EP should strive to ensure that the progress made since the last external quality assurance procedure is taken into account when preparing for the next procedure.*

#### ***The evidentiary part***

The training of personnel on accredited EP is carried out according to the state mandatory standard of higher education of the Republic of Kazakhstan dated October 31, 2018 No. 604.

The educational program 8D07110 – Digital engineering of machines and equipment, is focused on the acquisition of professional competencies that provide deep theoretical knowledge and practical skills in the field of fundamental and applied research of digital machines and equipment and is aimed at production, research and educational and pedagogical training.

The educational program 8D07110 – Digital engineering of machinery and equipment includes training in modern computer programs MatCAD, Solidworks, Inventor.

Activities for the implementation of EP 8D07109 – Innovative technologies and new inorganic materials (obrazovatelnye-programmy/obrazovatelnye-programmy-doktorantury), consistent with the mission, vision and values, with the strategy of Satbayev University (/mission-strategy) and are carried out on the basis of the laws "On Education", "On Science", "On languages in the Republic of Kazakhstan", regulatory documents of the Ministry of Education and Science of the Republic of Kazakhstan (prikazy-ministerstva-obrazovaniya-i-nauki-rk), internal regulatory documentation of Satbayev University (SU)

(<https://official.satbayev.university/ru/docs>) and in accordance with the Strategy, Program and Development Plan 8D07109 - "Innovative technologies and new inorganic materials", which are the main document on its development (</chemical-biological-technologies/kafedra-khimicheskikh-protsesov-i-promyshlennoy-ekologii/obrazovatelnye-programmy/obrazovatelnye-programmy-doktorantury>).

NC JSC KazNRTU named after K.I. Satpayev has a published Quality Policy supported by the academic and scientific community of the university. The objectives, activities and obligations of the university and the University Management in the field of quality are defined, taking into account the degree of satisfaction of all stakeholders, compliance of the system with Standards and directives to ensure the quality of higher education in the European area.

The main goal of the Policy is to ensure the quality of educational activities and scientific research by meeting the requirements of all stakeholders. The quality policy provides the basis for the development of quality objectives and their subsequent analysis.

An important innovative component of the quality system was the introduction of a process approach into management: a process evaluation system was introduced, a self-assessment of the management system is carried out annually, the practice of creating working groups is widely used in the work, audits and evaluation of the effectiveness of changes are carried out.

The University was the first in Kazakhstan to pass and re-confirm the International Institutional Assessment in the European University Association (EUA) under the International Evaluation Program (IEP, International Evaluation Program). <https://www.iep-qaa.org/reports-publications.html>. Permanent leading 1st place in the National Ranking of technical universities, participation in the QS World University Rating with the position (502), the University's cooperation with more than 400 companies in the industry.

In the process of searching for partners and further implementation of the program, the Department of International Cooperation, with the assistance of Institutes, concluded an agreement on the creation of a joint dual degree program with the Silesian University of Technology. According to 8D07110 – Digital Engineering of machinery and equipment, international cooperation is carried out with universities in Europe – Silesian Technical University (Poland), Russia – Moscow Institute of Steel and Alloys, Ural State Agrarian University, Magnitogorsk State Technical University named after G.I.Nosov.

At the University, the main characteristics of the quality of culture and values are – the predominance of collective motivation, the development of partnerships between University departments; social stability of the team, its participation in the management of the University; high organizational culture, staff compliance with instructions and regulations; the degree of staff awareness; compliance with the ethics of corporate behavior, the ability to maintain the image of the University; improving the quality of services provided, the growth of professional knowledge and competencies of employees, the positive dynamics of the results of personnel certification. The incentive for the development of university traditions is the organization and holding of events – Satpayev readings, Knowledge Day, Dedication to Students, Independence Day of the Republic of Kazakhstan, annual student ball, Nauryz Meiramy, Unity Day of the People of Kazakhstan, Victory Day, Day of State Symbols, Constitution Day of the Republic of Kazakhstan, sports events, annual student scientific conferences, etc.

The formation of a modular curriculum for EP 8D07110 – Digital engineering of machinery and equipment involves leading domestic and international universities, representatives of mining and metallurgical, oil and gas and machine-building industries. The model of training a specialist in EP 8D07110 – Digital engineering of machinery and equipment is focused on reflecting in the educational process the scope of future professional activity of trainees, their working conditions, the necessary knowledge and skills, skills and personality qualities. It includes curricula and programs, various activities, forms of communication with production and other means of communication of a specialist of a given profile. EP 8D07110 – Digital engineering of machinery and equipment uses outsourcing opportunities in the face of research institutes, technopark, engineering laboratories, foreign partner universities and

consultants are involved. Active practitioners are involved in the educational process. For example, the Deputy Director of the Department of JSC NAC "Kazatomprom" Shuriev T.H. regularly conducts trainings for undergraduates and doctoral students.

The individuality and uniqueness of the educational program 8D07110 "Digital engineering of machinery and equipment" is aimed at training personnel focused on scientific, experimental research, pedagogical activities in the field of digitalization of technological machinery and equipment, as well as specialists capable of managing and implementing projects related to the modernization of mining and metallurgical production and the oil and gas industry, development and research of new equipment and production technology. In addition, interested persons have the opportunity to influence the content of the development plan of the EP specialties. The coordination of the educational services provided with the interests of employers makes it possible to realize a socially significant goal – the professional adaptation of graduate doctors to the constantly changing trends of the labor market.

When implementing the EP, risk management is observed - this is a management strategy for achieving the University's goal. The successful development of the University's activities depends on the correct and prompt identification and response to risk. The University systematically analyzes information about its activities, conducts risk analysis and assessment in accordance with KazNITU DP 613. Risk management, assessment of strengths and weaknesses, market opportunities and existing threats. Risk assessment and identification of ways to reduce them is carried out at all levels of planning at the university. In addition, the evaluation of the effectiveness of the strategy, policy and goals is carried out by the University during the SWOT analysis.

Responsibility for the implemented business processes is based on the organizational and legal consolidation of management functions, rational separation of powers, establishment of rights, duties and responsibilities of heads of departments. They are defined by the Regulations on Divisions and job descriptions developed in accordance with the current organizational and management documents of the university and standards. So, to meet the requirements, the head of EP 8D07110 – Digital engineering of machinery and equipment (Head of the Department "Technological Machines and Transport") Bortebaev S.A. completed the following courses: 1. Improving pedagogical skills, Satbayev University, 2020 – 72 hours. 2. Improving skills in the distance learning format, Satbayev university, 2021 – 72 hours.

### ***Analytical part***

The University has a quality assurance policy presented in regulatory documents and published on the university's website.

The management maintains high standards of quality assurance of higher education in ensuring the procedures for the development of the EP, positioning the EP at the international level, confirms the numerous contacts with higher educational institutions and industrial organizations.

On an ongoing basis, the EP is adapted to the current requests of students and employers, taking into account the opinions of interested persons. The departments have mechanisms for regular review of the EP and monitoring, confirmed by feedback from employers and questionnaires of students. Monitoring is carried out under the supervision of responsible persons who control educational and other business processes at the university.

It confirms the existence of mechanisms for involving doctoral students in scientific research and also maintaining communication with employers, attracting potential employers to the formation of the structure and content of the EP.

But, at the same time, there is a lack of understanding of the link between the development policy of the University and the Strategic Development Plan of the university, which manifests itself in the inconsistency of the decisions of the departments and the university development program. The reason lies in the incomplete understanding of the university staff of the current policy, the expected results and the mechanisms for achieving them. As a consequence, there is

an incomplete effect of the efforts made by the university administration and the heads of the EP.

The form and content of the conducted survey of university students is mainly focused on students and does not take into account the specifics of the level of doctoral students.

When forming an EP development plan, it is necessary to increase the role of student participation with an increase in the level of training, which provides for a more detailed development of forms and mechanisms for doctoral students to participate in the formation of the content of the EP and further ways of developing the EP.

The results of the work of the collegial bodies in the management of the EP are poorly presented, there are no real results - the changes made based on the results of the survey of doctoral students and the survey of the main employers.

### ***Strengths/Best practices***

According to EP 8D07110 – Digital engineering of machinery and equipment, no strengths were identified.

### ***Recommendations of the EEC***

According to EP 8D07110 – Digital engineering of machinery and equipment:

- to develop mechanisms and clear criteria within which the degree of participation of employers and doctoral students in the formation of the development plan of the EP will be determined. The implementation period is 2022-2023 academic year.
- to develop criteria used in the questionnaire for satisfaction of the expectations of doctoral students. The implementation period is 2022-2023 academic year.
- to develop a mechanism for the participation of stakeholders in the composition of collegial bodies in decision-making and a form of reporting. The implementation period is 2022-2023 academic year.

### ***The conclusions of the EEC according to the criteria: (strong/ satisfactory/ suggest improvements/ unsatisfactory)***

According to the standard "Educational Program Management" 15 criteria are disclosed, of which: according to EP 8D07110 – Digital engineering of machinery and equipment 12 – have a satisfactory position, 3 – suggest improvement.

### **6.2. Standard "Information management and reporting"**

- ✓ *The university should ensure the functioning of the information collection, analysis and management system based on modern information and communication technologies and software.*
- ✓ *The EP management demonstrates the systematic use of processed, adequate information to improve the internal quality assurance system.*
- ✓ *The management of the EP demonstrates the existence of a reporting system reflecting the activities of all structural divisions and departments within the framework of the EP, including an assessment of their effectiveness.*
- ✓ *The university should determine the frequency, forms and methods of assessing the management of the EP, the activities of collegial bodies and structural units, and top management.*
- ✓ *The university must demonstrate a mechanism for ensuring the protection of information, including the identification of responsible persons for the reliability 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 them.*
- ✓ *The management of the EP should demonstrate the availability of communication mechanisms with students, employees and other stakeholders, 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 framework of the EP and demonstrate evidence of the elimination of the detected shortcomings.*
- ✓ *The university should evaluate the effectiveness and efficiency of its activities in the context of the EP.*
- ✓ *The information collected and analyzed by the university within the framework of the EP should take into account:*
  - key performance indicators;*
  - dynamics of the contingent of students in the context of forms and types;*
  - academic performance, student achievements and expulsion;*

*satisfaction of students with the implementation of the EP and the quality of education at the university;  
availability of educational resources and support systems for students;  
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 to provide the necessary information in the relevant fields of*

*sciences.*

### ***The evidentiary part***

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 electronic educational materials of disciplines, academic and individual plans, schedules of classes and exams, information about advisors and employers, news and announcements.

The portal provides interaction between students, teaching staff, as well as other departments directly or indirectly involved in the educational process. Through the relevant sections of the portal, the admission of applicants to the University, the viewing of debts and much more is realized. On the individual teacher's page on the portal at the end of the academic year, teachers fill out a report on the implementation of the IC, as a result of which a report of the department's work is formed. Based on the discussion of the reports of the teaching staff, corrective actions are applied in various areas of the department's work, indicating the deadlines and actions to eliminate shortcomings and improve activities.

As the main source of information data in the activity of the educational process, the database of the educational portal, permanently updated in real time, implemented on the basis of the Microsoft SQL Server product, is used. The database contains up-to-date data on the current situation at the University, the number of doctoral students, academic performance, the contingent of students, etc. The information security policy of the University provides for the adoption of necessary measures to protect information assets as material assets of the university from accidental or intentional modification, disclosure or destruction, as well as in order to maintain confidentiality, integrity and availability of information, to ensure the processes of information interaction with customers and partners.

NC JSC KazNRTU named after K.I. Satpayev carries out constant systematic work to improve the functioning of the information collection, analysis and management system. The main information flows of the university are: educational portal [http://sso.kaznit.kz/account/login /](http://sso.kaznit.kz/account/login/); distance education portal [https://polytechonline .kz/](https://polytechonline.kz/); also Microsoft 365 platform; "Anti-plagiarism system" [http://strikeplagiarism.com/en /](http://strikeplagiarism.com/en/), in which students' graduation papers are necessarily checked for uniqueness; a webinar that allows for online lectures; placement of scientific articles of teaching staff and scientists of KazNRTU, etc.

The collected data allow for analysis in the context of one student, study group, by course, covering all elements of training. The information collected makes it possible, based on structural analysis and quantitative methods, to develop measures aimed at ensuring the quality of the educational program.

Currently, the main principles and actions of the system for ensuring and improving the quality of education are "Fact-based decision-making". The principle is aimed at providing the management system with objective information for making managerial decisions, implies systematic collection, processing and analysis of data at the stages of key processes of the organization. Following this principle increases the reasonableness and validity of decisions made and, consequently, the effectiveness and efficiency of activities. Effective solutions are based only on reliable data. The sources of such data can be, for example, the results of internal quality system checks, positive or negative feedback from employers, graduates, etc. In addition, the information can be based on the analysis of the proposals of teaching staff, students. In order to ensure control over the quality of the educational process, training sessions are monitored. The results are presented and reviewed at the meetings of the University's EMS.

According to the doctoral programs according to the academic calendar and the IUP, doctoral students provide a semester report and report at a meeting of the department on the

results of research work on the topic of the dissertation. Also, the results of scientific research are reported at various conferences, published in scientific journals and collections of works, introduced into the educational process.

The management of the educational process is based on collegial decisions of the academic community of the university, taking into account the opinion of the environment of students. The management of research activities is based on the collegial decisions of the scientific community of the university. The corporate governance of the university is based on the accountability of university departments and open procedures for the certification of employees and the competitive selection of new employees. The management of financial and economic activities is based on strict compliance with international financial reporting standards and independent control of the University's Council of Directors.

The evaluation of the activities of the departments' management, as structural units of the university, is carried out in accordance with the Documented procedure of DP KazNRTU 801. Internal audit twice a school year. Certified teaching staff and University employees who have been trained in a special course of internal auditors training are involved in the internal audit. Every year in August, the order approves the schedule of internal audit for the upcoming academic year and the composition of auditors.

One of the criteria of the process of continuous quality improvement is the assessment of customer satisfaction, through questionnaires, measuring the effectiveness of the work carried out, the results of internal audit, disciplinary and conciliation commissions. The results are spelled out in the Management Analysis.

The University management, teaching staff and students take an active part in the planning, implementation and monitoring of all processes carried out at the University. The participation of managers at all levels in achieving goals is carried out through participation in the work of the Academic Council of institutes, working groups, intra-university commissions, audit groups created by the order of the rector.

The University has a practice of creating working groups, commissions in order to monitor all processes at the level of departments, institutes and the University. Certified and experienced teaching staff, students take part in the work of such groups. Thus, they directly influence the decision-making on the improvement of the University's activities.

The University management systematically analyzes the results of internal audits, competitions and a feedback system (annual questionnaire) to achieve confidence that the Quality Policy is being implemented (DP KazNRTU 502 "Management Analysis"). The purpose of the Analysis is to assess the opportunities for improvement and the need for changes in the quality management system of Satbayev University in order to ensure its continued suitability, adequacy, effectiveness and consistency with the strategic directions of SU development. In case of changes in external factors in the educational space, reforming or reorganizing the existing management system of the university, restructuring the activities of the mission, quality goals and objectives of the development of the university are adjusted to meet new requirements.

The awareness of students and researchers in the field of the latest world scientific achievements, the publication activity of scientists is achieved through access to foreign scientometric databases Clarivate Analytics, Scopus, included in the national subscription. Access to up-to-date scientific information for users is guaranteed thanks to a subscription to periodicals organized by the university. The annual subscription is up to 30 titles of printed publications. The information needs of the EP in foreign publications are met by collections of scientific journals Wiley, ScienceDirect, Scopus, WOS, EBS "IPRbooks", EBS "Lan". Periodicals in the Kazakh language on the profile of the EP in electronic form are presented in the RMEB, KazNEB. As part of the policy of open access to scientific information, students get access to institutional repositories.

#### ***Analytical part***

The university collects, processes and analyzes the available information flows on the basis of the current information system. An appropriate level of information and technical support for

the educational process is provided.

Systematically analyzes the results of internal audits, competitions and organizes a feedback system in the form of an annual questionnaire, on the basis of which the effectiveness of the Quality Policy is checked.

The degree of satisfaction with the needs of students, teaching staff and staff are considered at meetings of structural divisions and the Academic Council of the University. As a result, if necessary, changes are made to the educational process, or the reorganization of the existing EP management system, corrections are made in connection with current factors.

The University has a socially oriented policy implemented by the Department of Youth and Sports, responsible for the socio-cultural development of students. Organized work is noted on the payment of monetary compensation for food and for the purchase of clothes, shoes and soft equipment to students for orphans and children left without parental care and under guardianship.

The Scientific Library serves all participants of the scientific and educational process on the principle of openness and accessibility of information resources and services.

The strategic development plan of the university contains key indicators of the implementation of educational programs.

In general, all proper business processes are being implemented, but it should be noted that the proper level of coordination of the academic policy system at the level of departments and mechanisms underlying the Strategic Development Plan of the university has not been achieved. The system of indicators of the Strategic Development Plan of the University was not integrated into the mechanisms for implementing the quality of education at the department level.

#### ***Strengths/Best practices***

According to EP 8D07110 – Digital engineering of machinery and equipment, no strengths were identified.

#### ***Recommendations of the EEC***

According to EP 8D07110 – Digital engineering of machinery and equipment, there are no recommendations within this standard.

#### ***The conclusions of the EEC according to the criteria: (strong/ satisfactory/ suggest improvements/ unsatisfactory)***

according to the Information Management and Reporting standard, 16 criteria have been disclosed, of which: according to EP 8D07110 – Digital engineering of machinery and equipment, 16 have a satisfactory position.

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

✓ *The university must demonstrate the existence of a documented procedure for the development of an EP and its approval at the institutional level.*

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

✓ *The management of the EP should determine the impact of disciplines and professional practices on the formation of learning outcomes.*

✓ *The university demonstrates the existence of a graduate model of an OP describing learning outcomes and personal qualities.*

✓ *The qualification assigned upon completion of the OP must be clearly defined, explained and correspond to a certain level of the NSC, QF-EHEA.*

✓ *The management of the EP should demonstrate the modular structure of the program based on ECTS, ensure that the structure of the content of the EP meets the goals set with a focus on achieving the planned learning outcomes for each graduate.*

✓ *The management of the educational institution should 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 should demonstrate the uniqueness of the educational program, its positioning in the educational market (regional/national/ international).*

✓ *An important factor is the possibility of preparing students for professional certification.*

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

### ***The evidentiary part***

A set of competencies has been formed according to accredited EP, which allows graduates to not only "integrate" into the production structure of research institutes and manufacturing companies without a long period of adaptation, but also to be a carrier of modern innovative methods and digital ones.

The training of doctors of engineering and technology is carried out taking into account the compliance of competencies with modern realities and tasks of economic development in Kazakhstan.

Accredited EP on the basis of mandatory and elective components allow you to form an individual educational trajectory of students. In particular, the choice of specialization EP. The choice of the learning trajectory is carried out by students independently, but with the help of consultations, conversations with advisors, leading teachers of the department, graduates, employers. The curriculum of the EP is formed in accordance with the requirements and methodological recommendations approved by the University's EMS. First, a specialist model is formed, the competencies that a university graduate should have are developed. These developments are being examined at the leading enterprises of the industry. The programs of academic disciplines are examined by the specialty council and approved by the Academic Council of the Institute. In each academic discipline, the developers define pre- and post-requirements, taking into account that it is possible to organize the learning process as continuously deepening and expanding the acquisition of specified competencies.

The process of forming educational programs is transparent, and not only leading professors, associate professors of the department, but also employers, as well as students take part in its compilation. The presence of the developers of a large scientific and pedagogical experience, work experience in the specialty in production guarantees the quality of the EP. The state of science and practice is systematically monitored, which makes it possible to make timely changes to the EP. Monitoring is carried out by the teaching staff 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.

The interaction between teaching, research and training, as well as between the business community and the university in Quality Assurance Policy play a key role, and it is being strengthened in connection with the transition of the university to research status. To achieve this goal, the University pursues a constant policy: integration of the educational process and research activities, the development of students through research activities and the formation of students' professional competence and ethical standards through the use of their own scientific results in training according to educational programs agreed with employers, strategic partners of the university; the development of educational programs and technologies, taking into account priority areas of science and technology; development of university-industry cooperation and partnerships with scientific and educational organizations.

According to EP 8D07110 – Digital Engineering of machinery and equipment, the department has long-term ties with related departments and laboratories of the Silesian Technical University (Poland), the Moscow Institute of Steel and Alloys (Moscow, Russia), the Ural State Agrarian University (Yekaterinburg, Russia), with which it exchanges experience, scientific publications and exchanges on research internship of students.

When constructing EP work plans, instead of a block-modular approach, a modular competence approach was used, the key principle of which is orientation to goals that are significant for the field of activity in the field of operation of technological machines, chemical technology of inorganic substances.



In the educational process, in addition to traditional forms of classes, active and interactive forms are also used when performing a number of laboratory and practical work: Teamwork – joint activity of students in a group under the leadership of a leader, aimed at solving a common task with the division of responsibility and authority; Role–playing imitation by doctoral students of real professional activity with the performance of specialist functions at various workplaces places; Problem–based learning is the stimulation of students to independently "extract" knowledge necessary to solve a specific problem; Interdisciplinary learning is the use of knowledge from different fields, their grouping and concentration in the context of a specific task being solved.

### ***Analytical part***

The university has defined the procedure for the development and approval of the EP on the basis of regulatory documents. All interested parties are involved in this process: students, teaching staff and employers. The management of the EP strives as much as possible to ensure that the content of the EP meets the established goals and learning outcomes.

Based on the results of monitoring and internal audits, the content of the EP and the conditions for its implementation are evaluated. The university has a generalized graduate model and the management of each EP should develop its own. There was no evidence of the degree of participation of students in the implementation of this task, as well as changes in the content of disciplines based on the results of the feedback procedure.

Educational and methodological complexes of disciplines, which were provided in electronic and printed form, indicate that the discipline plans are being implemented. The content of compulsory and elective academic disciplines is aimed at the formation and achievement of certain learning outcomes.

The management of the EP presents feedback from employers received for programs of the same specialization in the areas of doctoral studies. The management of the EP has poorly demonstrated the existence of a mechanism for the employer's involvement in the development and approval of the EP, as well as an external expert assessment of the content and results of the training of the EP is poorly presented.

In general, the management of the CO and the heads of the EP comply with regulatory requirements regarding the development, approval and monitoring of the EP.

### ***Strengths/Best practices***

According to EP 8D07110 – Digital engineering of machinery and equipment, no strengths were identified.

### ***Recommendations of the EEC***

According to EP 8D07110 – Digital engineering of machinery and equipment:

- to develop criteria determining priority when making changes to the structure and content of the EP. The implementation period is 2022-2023 academic year.
- to develop a mechanism for conducting external examinations of the content and planned results of the implementation of the EP. The implementation period is 2022-2023 academic year.
- develop criteria for assessing the quality of stakeholders' participation in the development of the EP. The implementation period is 2022-2023 academic year.
- to develop a mechanism for assessing the compliance of the content of the EP and the planned learning outcomes. The implementation period is 2022-2023 academic year.

### ***The conclusions of the EEC according to the criteria: (strong/ satisfactory/ suggest improvements/ unsatisfactory)***

According to the standard "Development and approval of the educational program", 12 criteria are disclosed, of which: EP 8D07110 – Digital engineering of machinery and equipment, 8 – has a satisfactory position. 4 – suggest improvement.

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

- ✓ *The university should ensure the revision of the structure and content of the EP, taking into account changes in the labor market, the requirements of employers and the social request 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 particular discipline;*  
*changes in the needs of society and the professional environment;*  
*workload, academic 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 should publish information about changes to the EP, inform interested parties about any planned or undertaken actions within the framework of the EP.*
- ✓ *Support services should identify the needs of various groups of students and the degree of their satisfaction with the organization of training, teaching, evaluation, and mastering of the EP as a whole.*

##### ***The evidentiary part***

Monitoring and periodic evaluation of the educational program are aimed at achieving the goals of the EP and the full achievement of the expected learning outcomes. Continuous monitoring of the implementation of the development plan of the EP contributes to improving the quality of the EP, the results of which are considered in addition to meetings of the department, the Council of specialties, also mandatory at meetings of the academic councils of institutes, the Educational and Methodological Council and the Academic Council of the University.

The decision to adjust the curricula is made by the EMS of the Institute and the University. To adjust the content of syllabuses and work programs - the graduating departments and the directorate of the Institute. These decisions are recorded in the minutes of the meeting of the departments, the council of the EMS specialty of the Institute and the University.

Quality monitoring and periodic evaluation of SU educational programs ensure the achievement of the goal and meet the needs of students and society is carried out through internal and external audits, accreditation, rating of educational programs, evaluation of students using a set of statistical and analytical evaluation indicators EP.

The graduating department implementing this program is responsible for ensuring the quality of the EP. The managers of the EP regularly evaluate and revise the EP with the participation of students, teaching staff and other stakeholders on the basis of systematic collection, analysis and management of information, as a result of which the program is adapted to ensure relevance.

When monitoring the EP, the relevance of the EP, the fulfillment of the goals and objectives set by the EP, the logic of building the EP, the achievement of learning outcomes by students and their compliance with the requirements of professional standards, how the EP meets the needs of stakeholders, etc. are evaluated. The monitoring also determines the compliance of the EP with regulatory legal acts in the field of education, the relevance of the EP with its scientific validity, prospects and ways of its development. The mechanism of internal monitoring and evaluation of the quality of the EP provides continuous monitoring of the quality of educational programs, educational and methodological support, the introduction of innovative teaching methods in the educational process, improving the methods of assessing the educational achievements of students. This monitoring is carried out by the teaching staff, department, institute, students and Departments on Academic Issues and Corporate Development. External monitoring is carried out within the framework of accreditation of educational programs, with participation in ratings and other events.

Regular monitoring is carried out taking into account information about the contingent of students, the level of their academic achievements (Olympiads, competitions, courses in educational centers), satisfaction with the students of the EP. The analysis of the survey results, schedules, frequency and types and forms of the survey are presented annually in the management analysis report.

The University actively cooperates with the main employers in the organization of internship bases, curriculum development, evaluation of study results and employment. To enroll in a research internship, organizations request a transcript of academic performance, a resume, and an internship plan.

Monitoring of the satisfaction of teaching staff is carried out at the graduating departments, through annual reporting of teaching staff, discussion of reports at department meetings, organization of methodological seminars. Based on the results of these events, the departments analyze the activities of each teaching staff and their satisfaction with the results obtained. The suggestions and comments of each of the teachers are taken into account when developing the department's work plans for the next academic year, and is also taken into account when adjusting plans and forming an educational program development plan. In addition, motivating employees to work more efficiently and creatively is improving working conditions, providing the educational process with the necessary equipment of a new generation. A survey is also conducted on the satisfaction of teaching staff with the quality of services provided and the university as a whole.

#### ***Analytical part***

The OE has developed a system of monitoring and periodic evaluation of EP. Communication between departments has been established and proper information exchange of data is provided on the basis of existing information and technical systems. The frequency and forms for reporting in each structural subdivision are determined. Data collection, processing and analysis are carried out on a regular basis.

It should be noted that the principles underlying the University's Development Strategy are not consistent with the educational and other processes operating at the department. It is recommended to pay attention to this fact and eliminate them in the near future.

In order to achieve the intended goals of the OE within the framework of the global educational space, it is necessary to develop approaches not only at the infrastructural level of meeting regulatory requirements for the processes being implemented, but also an examination of the content of the EP (EMC and mechanisms for implementing the EP) of the appropriate level, at the moment this is not observed. Moreover, it should be noted that three teachers implement the educational process in doctoral studies, this is clearly not enough. Also, the international positioning of the EP requires the development of mechanisms for informing stakeholders in a larger global space, which should be paid attention to.

#### ***Strengths/Best practices***

According to EP 8D07110 – Digital engineering of machinery and equipment, no strengths were identified.

#### ***Recommendations of the EEC***

According to EP 8D07110 – Digital engineering of machinery and equipment:

- conduct an external examination of the content and learning outcomes of the EP. The implementation period is 2022-2023 academic years.

- develop and consolidate a mechanism for informing the public about changes in the EP. The implementation period is 2022-2023 academic years.

***The conclusions of the EEC according to the criteria: (strong/ satisfactory/ suggest improvements/ unsatisfactory)***

According to the standard "Continuous monitoring and periodic evaluation of educational programs", 10 criteria are disclosed, of which: OP 8D07110 – Digital engineering of machinery and equipment 7 – have a satisfactory position, 3 – suggest improvement.

### 6.5. Standard "Student-centered learning, teaching and assessment of academic performance"

- ✓ *The management of the EP should ensure respect and attention to different groups of students and their needs, providing them with flexible learning paths.*
- ✓ *The management of the EP should provide teaching based on modern achievements of world science and practice in the field of training, the use of various modern teaching methods and evaluation of learning outcomes that ensure the achievement of the goals of the EP, including competencies, skills to perform scientific work at the required level.*
- ✓ *The management of the EP should determine the mechanisms for distributing the educational load of students between theory and practice within the framework of the EP, ensuring the development of the content and achievement of the goals of the EP by each graduate.*
- ✓ *An important factor is the availability of own research in the field of methods of teaching the disciplines of the EP.*
- ✓ *The university must ensure that the procedures for evaluating learning outcomes correspond to the planned results and goals of the EP.*
- ✓ *The university must ensure the consistency, transparency and objectivity of the mechanism for evaluating the results of the EP training, the publication of criteria and evaluation methods in advance.*
- ✓ *Evaluators should be familiar with modern methods of evaluating learning outcomes and regularly improve their skills in this area.*
- ✓ *The management of the EP should demonstrate the existence of a feedback system for the use of various teaching methods and evaluation of learning outcomes.*
- ✓ *The management of the EP should demonstrate support for the autonomy of students with simultaneous guidance and assistance from the teacher.*
- ✓ *The management of the EP must demonstrate the existence of a procedure for responding to complaints from students.*

#### ***The evidentiary part***

The academic policy of the university is based on the principles of academic integrity, internal quality assurance, innovation and internationalization and is aimed at forming students' learning culture within the framework of credit technology, building their own learning trajectory in accordance with their level and needs, building their own schedule and classes and choosing a teacher. Students have the opportunity to familiarize themselves with the content and requirements of the syllabus of discipline, consent or free withdrawal from the discipline in a four-week period, transfer to a lower level in a 2-week period on the recommendation of the teacher.

The University implements student-centered learning processes in educational programs: ensures the development of flexible learning trajectories; creates conditions for increasing motivation and involvement of students in the educational process; ensures consistency and objectivity of evaluation of learning outcomes. The task of the teacher is to create such conditions in the educational process from which motivating motives for independent work would be formed.

The department provides the following ways of providing educational and methodological assistance to students, including individual consultations on the development of the discipline, on the organization of the educational process: students' access to educational materials posted in electronic form in the electronic information and educational environment of the university, through individual user registration and the issuance of a login and password; students' access to information library resources of electronic library systems through individual authorization in these systems; free individual access of students to the materials of the official website of the university.

The formation of individual educational trajectories is carried out on the basis of Academic Policy and the QED, which contains a list of all disciplines of the component of choice with an

indication of the purpose of study, brief content and expected results of study. The educational trajectory is planned in accordance with the academic calendar.

In order to ensure an individual approach in the training of students who have problems, i.e. who cannot cope with academic requirements, the current rules of the organization of the educational process on credit technology provide for scheduled consultations within the framework of the SROP, allowing them to re-attend the course and gain the necessary transfer score.

To conduct consultations within the framework of office SROP, schedules of consultations of teachers for each semester are compiled at the departments. Similar information is provided in syllabuses of disciplines. To ensure the successful training of students in EP 8D07110 – Digital engineering of machinery and equipment on the basis of the department "Technological machines and Transport" there are computer classes equipped with modern software for computer modeling of processes and equipment.

To ensure the successful teaching of disciplines, the teachers of the department develop textbooks, manuals and methodological guidelines for conducting classes, which are periodically reviewed, discussed and approved by the department and the methodological council of the Institute.

Every year, university teachers improve their qualifications and participate in international conferences and seminars held in Kazakhstan and abroad. They participate in practical seminars and specialized exhibitions.

Teachers independently determine teaching methods from a wide range of professional teaching methods, such as project-based learning, blended learning, using various student assessment tools.

Compliance of the teaching and learning methods used with the objectives of the discipline, module, EP is determined by ensuring that the teaching staff meets the qualification requirements, level and specifics of the educational program.

Teachers conduct open lessons, share their experience with colleagues. The leading teachers are assigned assistants who adopt the experience of conducting classes.

To assess academic achievements, various forms of monitoring and certification are provided – ongoing monitoring of academic performance, intermediate and final certification of students, the frequency and duration of which is carried out in accordance with curricula, academic calendar and professional curricula developed on the basis of state educational standards.

The criteria and methods of knowledge assessment, which provide for the procedure for conducting current, intermediate and final control of knowledge, final certification, the current methodology for assessing academic performance for rating grades in disciplines are presented in the guidebook and on the university's website.

The period of intermediate certification at the university is called the examination session, which serves as a form of evaluation of their academic achievements during the academic period, the theoretical knowledge gained and their practical application. At the same time, in order to ensure the recognition of the results of the control of educational achievements of students in the international educational space, knowledge assessment is carried out according to a point-rating letter system.

A student who disagrees with the results of the assessment of the admission rating and/or final control has the right to appeal no later than the next day after the rating and/or the exam.

Retake of the assessment, as well as positive (for the purpose of increasing) and unsatisfactory, according to the final control in this session is not allowed.

Assessment of satisfaction with the quality of education according to the accredited EP is carried out according to the following criteria: the ability to present educational material in a meaningful, accessible and consistent manner and organize SRO, the use of active handouts in the classroom, the objectivity of teaching staff in the assessment of classes and intermediate certification of students, the level of ethical behavior and culture of teaching staff.

In general, questionnaires are conducted to assess students' satisfaction with the quality of teaching disciplines provided by educational support, the teacher through the eyes of students and satisfaction with the university as a whole. Students can also post their complaints and suggestions in the previously described SU Solutions mobile application. Students can file a complaint on all issues of interest, such as the quality of the organization of the educational process and social, creative development, as well as simply ask to resolve the conflict.

### ***Analytical part***

The OE provides teaching and assessment of academic performance taking into account the needs of various groups of students, providing the university infrastructure and appropriate educational conditions.

The implementation of the educational process involves the use of various methods and forms of teaching and learning based on the specifics of accredited EP.

The OE supports feedback mechanisms on the use of various teaching methods. Within the framework of educational processes, a procedure is provided for responding to possible complaints from students. Note that this is mainly an appeal.

Although the questionnaire is stated to be conducted as a feedback in the educational process, it is obvious that it brings a minimal amount of information, since it does not have a clear focus at this level of training. And even the fact that doctoral students are involved in scientific projects is not a significant argument, because this aspect is not part of a purposefully built mechanism.

It should be noted that a good solution is the construction of multi-channel communication with students through mobile applications and other technical means, but there is no analysis in the data from the use of this data transmission system, in addition to stating the fact.

The small number of teachers involved in the preparation of doctoral students does not create favorable opportunities for the development of their own teaching methods, which is also an essential point for the development of the uniqueness of the EP.

### ***Strengths/Best practices***

According to EP 8D07110 – Digital engineering of machinery and equipment, no strengths were identified.

### ***Recommendations of the EEC***

According to EP 8D07110 – Digital engineering of machinery and equipment, there are no recommendations within this standard.

### ***The conclusions of the EEC according to the criteria: (strong/ satisfactory/ suggest improvements/ unsatisfactory)***

According to the standard "Student-centered learning, teaching and assessment of academic performance", 10 criteria are disclosed, of which: according to EP 8D07110 – Digital engineering of machinery and equipment, 10 - have a satisfactory position.

### **6.6. Standard "Students"**

✓ *The university must demonstrate the policy of forming a contingent of students and ensure transparency, publication of procedures regulating the life cycle of students (from admission to completion).*

✓ *The management of the EP should provide for special adaptation and support programs for newly enrolled and foreign students.*

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

✓ *The university should provide an opportunity 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 availability of a support mechanism for gifted students.*
- ✓ *The university should 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 should provide students with internship places, demonstrate the procedure for facilitating the employment of graduates, maintaining communication with them.*
- ✓ *The university must demonstrate the procedure for issuing graduates with documents confirming their qualifications, including the achieved learning outcomes.*
- ✓ *The management of the EP should demonstrate that graduates of the program have skills that are in demand in the labor market and that these skills are really relevant.*
- ✓ *The management of the EP should demonstrate the existence of a mechanism for monitoring the employment and professional activities of graduates.*
- ✓ *An important factor is the presence of an active alumni association/association.*

### ***The evidentiary part***

The policy of forming a contingent consists in the admission on the basis of a state order (grant) and a paid basis of persons who have consciously chosen their field of training and have scored the required number of points on a comprehensive test. The formation of the contingent of students is carried out on the basis of the "Standard rules for admission to 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.

Information about admission rules and conditions, a list of required documents, a list of programs, entrance exam programs, exam admission schedules, regulatory documents, announcements, etc. is posted in advance on the official website of the university <https://official.satbayev.university/ru/docs>, information stands. Also, information about admission can be obtained from consultants working in the admissions committee and from those responsible for career guidance during planned events. To enroll in the university, applicants submit to the University Admissions Committee or through the e-government web portal [www.egov.kz](http://www.egov.kz) a package of documents provided for in paragraph 8 of the State Service Standard "Acceptance of documents and enrollment in higher education institutions for training in educational programs of higher education", according to the required list.

Along with citizens of the Republic of Kazakhstan, an educational grant is provided to persons of Kazakh nationality who are citizens of other states, foreign citizens and stateless persons permanently residing in the Republic of Kazakhstan, as well as citizens of the Russian Federation, the Republic of Belarus, the Republic of Tajikistan, the Republic of Kazakhstan and the Kyrgyz Republic. Foreign citizens and stateless persons are admitted to the University in accordance with the procedure established by the legislation of the Republic of Kazakhstan, as well as international treaties ratified by the Republic of Kazakhstan. Admission of foreign citizens according to the allocated quota on the basis of a state educational order to international higher education institutions established by interstate agreements of two or more countries is carried out independently by universities. Admission of foreign citizens to study in a foreign language on a paid basis is carried out according to the results of comprehensive testing conducted by higher educational institutions in the language of instruction.

Every year, the University conducts special adaptation and support programs for newly enrolled students. The adaptation program is divided into several days. On the first day of this official acquaintance with the administration, students were explained the strategy, principles and internal regulations of the University. Then the students were introduced to the advisors, who explained the system of education at the University. There is a cultural and entertainment program, dedication to students, aimed at getting acquainted and joining a new team. The university creates a comfortable environment for the good mood of students and provides a quick adaptation to the educational process. The departments pay attention to working with gifted students, their interests, wishes, ideas, projects are taken into account and supported.

Social assistance and support for students and employees is one of the most priority areas

of social work carried out at the University, which provides solutions to social problems in order to create optimal conditions for the training and development of doctoral students.

According to the accredited educational program 8D07110 – "Digital engineering of machinery and equipment", doctoral students have been accepted since 2019. At the moment, 10 doctoral students are studying under this EP: 2 in the 3rd year, 5 in the 2nd year and 3 in the 1st year.

To ensure the objective recognition of higher education qualifications, including the recognition of non-formal education, the University ensures compliance with the actions of the Lisbon Recognition Convention, cooperates with the Center for the Bologna Process and Academic Mobility of the Ministry of Education and Science of the Republic of Kazakhstan, which is the executive body for the recognition and nostrification procedure in the Republic of Kazakhstan. In accordance with the provisions of the Lisbon Convention, the University is working to recognize the academic courses and credits mastered by students within the framework of academic mobility.

The organization of the external academic mobility program and international exchange programs for students studying abroad for additional education programs, including retraining and advanced training, scientific internship, participation in seminars, master classes, trainings and other training events is always strictly in accordance with the approved DP KazNRTU 718 Academic mobility, which describes the rules, algorithm and instructions for participation.

The mechanism of recognition of learning outcomes mastered during academic mobility is reflected in the approved Rules of credit technology of education at KazNRTU named after K.I.Satpayev.

Every year, during the transition from course to course, individual plans of students are filled out. At the same time, they choose disciplines for the course according to the curriculum and fill it out on their website. The plan is checked by the adviser, fixed by the institute's directorate and the office registrar. The transfer from course to course is made by order of the rector on the basis of the institute's submission.

Students who have completed their studies under the educational program are awarded the appropriate degree and a state-issued diploma with an appendix (transcript), as well as a European Diploma Supplement (European Diploma Supplement) on request. The documents include information about the achieved learning outcomes, context, content, status of the education received, and evidence of its completion.

In accordance with the requirements of state education standards, the university provides practice bases that contribute to the professional development of students. The University has a career center under the Department of Academic Affairs, which deals with the organization of professional (research practice) of students and the promotion of employment of University graduates.

To communicate with graduates, there is a University website map page, where graduates' resumes and information about vacancies for their employment are posted.

The employment of undergraduate graduates is monitored through a request to the State Pension Payment Center for the availability of pension contributions from graduates.

### ***Analytical part***

There is a published contingent formation policy on the organization's website. The admission rules, study periods, academic performance, recognition and certification of students are consistently set out. The analysis of the available material and technical, information resources and personnel is carried out. But unfortunately, at the moment there is no significant change in the situation with logistics and personnel at the department that train doctoral students. Only agreements regarding the laboratories of partner universities are indicated, but this measure looks more like a one-time approach, and not as part of a consistently implemented system solution.

Based on the current indicators of the accredited EP, it is not possible to fully analyze the



implementation of special adaptation and support programs for foreign students, since the entire contingent is represented by citizens of the Republic of Kazakhstan.

To ensure the objective recognition of higher education qualifications, including the recognition of non-formal education, a documented procedure has been approved at KazNRTU.

There has not yet been a release on accredited EP and it is not possible to fully judge employment, although it is indicated that there is a special structure that promotes employment.

According to the development plans of the university, a further increase in the number of students is expected, including under the accredited EP, however, it should be noted that the maximum size of groups optimal for maintaining the quality of the planned practical and laboratory work was not presented.

Interviewing students and the current picture of providing students with places of residence showed the need to improve social conditions for students regarding the provision of places in the dormitory. With the further growth of the contingent, this trend will take on threatening proportions and will create a negative picture regarding the public perception of the university and the EP in particular.

#### ***Strengths/Best practices***

According to EP 8D07110 – Digital engineering of machinery and equipment, no strengths were identified.

#### ***Recommendations of the EEC***

According to EP 8D07110 – Digital engineering of machinery and equipment:

- to analyze the formation of a potential contingent based on the available logistical, information resources and human resources. The implementation period is 2022-2023 academic year.

#### ***The conclusions of the EEC according to the criteria: (strong/ satisfactory/ suggest improvements/ unsatisfactory)***

According to the "Students" standard, 12 criteria are disclosed, of which: according to EP 8D07110 – Digital engineering of machinery and equipment 11 – have a satisfactory position, 1 – suggests improvement.

#### **6.7. Standard "Teaching staff"**

✓ *The university should have an objective and transparent personnel policy in the context of the EP, including hiring (including invited teaching staff), professional growth and staff development, ensuring the professional competence of the entire staff.*

✓ *The university must demonstrate that the quality of the teaching staff meets the established qualification requirements, the university's strategy, and the goals of the EP.*

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

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

✓ *The university should involve in teaching specialists of relevant industries with professional competencies that meet the requirements of the EP.*

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

✓ *The university should demonstrate the wide application of teaching staff of information and communication technologies and software in the educational process (for example, online learning, e-portfolio, MOOS, etc.).*

✓ *The university should demonstrate the focus of its activities on the development of academic mobility, 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 the country.*

### ***The evidentiary part***

The main human resource of the University associated with the implementation of the educational and scientific process is the human potential as the integration of personal resources of representatives of the teaching staff of the University and management personnel. The ways and methods of formation and development of human resources are determined by the personnel policy of the university.

The University has a single electronic database that includes data on teaching staff, including their personal data, including information about their education, qualifications, academic degrees and titles, scientific and methodological publications, certificates and patents, individual plans of teachers, as well as working curricula, educational and methodological complexes of specialties, syllabuses of disciplines.

On the University's website, you can find a list of institutes, departments and the composition of the teaching staff of each department, get information about the teaching staff of the department. Students can get acquainted with the list of disciplines of the OP and the declared teachers when making an individual curriculum on their page.

The personnel policy is a system of views, ideas, requirements, principles that determine the main directions of work with personnel, its forms and methods. The purpose of the personnel policy of KazNRTU is to create a system of formation, development and management of the personnel of the university, which has a high level of professionalism.

The formation of teaching staff is carried out on the basis of an analysis of the needs of educational programs for which personnel are trained at the university. The qualifications of teachers, their quantitative composition correspond to the areas of training meet the licensing requirements.

The University develops transparent and objective criteria for hiring, appointing, filling vacant positions, promotions, dismissals and follows them in its activities in accordance with the above provisions.

According to the Rules of competitive replacement of positions of scientific and pedagogical personnel of higher educational institutions, a competition commission has been established at the University. The competitive selection of candidates for vacant positions is carried out in accordance with the qualification characteristics of the positions of scientific and pedagogical workers, as well as by placing ads in republican newspapers.

The high level of professional competencies of the University staff is maintained and developed in the system of continuous training and advanced training. The main emphasis in this process is on intra-corporate training, which comes in various forms: on-the-job training, mentoring, intra-university seminars and trainings. The desire of employees to improve their skills is supported and stimulated morally and financially. In order to provide the teaching staff with qualification requirements, the level and specifics of the EP, corporate advanced training courses in management in education for top managers, visiting open classes of professors, referral for further training and improvement of skills are conducted.

KazNRTU implements mechanisms of moral and material incentives: declaration of gratitude, awarding with diplomas, payment of prizes, submission for the title of "Honorary Worker of Education of the Republic of Kazakhstan", recommendation for participation in the competition "The Best university teacher".

In 2021, Professor of the Silesian Technical University (Poland) Sladkowski A.V. from November 30 to December 28 conducted a course of lectures/seminars/trainings on the topic: "Problems of training specialists and the current state of the level of technological machines and transport" in the amount of 72 hours.

According to EP 8D07110 – "Digital engineering of machines and equipment", 3 teachers

teach classes at the Department of Technological Machines and Transport, the degree of teaching staff is 100%. Detailed information about the teaching staff of the Department of Technological Machines and Transport is available on the website of Kazntu (<https://official.satbayev.university/ru/mining-metallurgy/lmh>).

According to EP 8D07110 – "Digital engineering of machinery and equipment", the teaching staff of the department are actively engaged in research work, 4 GF projects, 1 PCF and 1 R&D were completed in 2018-2020. Currently, Professor S.A. Zaurbekov, lecturer M.K. Myrzakulov and doctoral students E.E. Sarybaev and D.E. Balgaev are implementing a GF project totaling 64.6 million tenge. Assoc. Professor of the Department K.K. Elemesov is the executor of a scientific project within the framework of a World Bank grant for 250 million tenge. There is also a contractual topic with JSC NAC "Kazakhstan Temir Zholy" senior lecturer of the department Baskanbayeva D.D. for a total amount of 11 million tenge. Research work on the projects of the Department "Technological Machines and Transport" for the period 2018-2022 was carried out under grant funding programs of the Ministry of Education and Science of the Republic of Kazakhstan and the household. contractual financing

### ***Analytical part***

At the department in the field of training 8D07110 – "Digital engineering of machinery and equipment" classes are taught by 3 teachers, including full-time teaching staff of them 3. The share of full-time teaching staff in the department is 100%, which meets the established qualification requirements for licensing educational activities of the university. But it should be noted that despite all the positive aspects associated with the implementation of scientific projects and 100% settling down, a small number of teachers practically nullifies all the available advantages. This approach to the implementation of personnel policy is very risky. It clearly requires a careful review of approaches.

The staff of teachers providing the implementation of 8D07110 – "Digital engineering of machinery and equipment" is formed of highly qualified and competent employees with a fairly extensive experience in scientific, pedagogical and practical activities.

Teachers in the department participate in advanced training courses. The management of the OE has introduced motivation for the professional development of teaching staff - awarding for scientific publications, in the databases Web of Science, Scopus (Q1, Q2). The OE has a system of encouragement for scientific publications in highly rated journals.

### ***Strengths/Best practices***

According to EP 8D07110 – Digital engineering of machinery and equipment, no strengths were identified.

### ***Recommendations of the EEC***

According to EP 8D07110 – Digital engineering of machinery and equipment:

- to develop a plan for the development of the personnel of the department, including through the involvement of practical teachers. The implementation period is 2022-2024 academic years.

### ***The conclusions of the EEC according to the criteria: (strong/ satisfactory/ suggest improvements/ unsatisfactory)***

According to the "Teaching Staff" standard, 9 criteria are disclosed, of which: according to EP 8D07110 – Digital engineering of machinery and equipment 7 – have a satisfactory position, 2 – suggests improvement.

### ***6.8. Standard "Educational resources and student support systems"***

- ✓ *The university must ensure that the infrastructure, educational resources, including material and technical, meet the objectives 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 implemented EP, including in the following areas:
  - technological support for students and teaching staff in accordance with educational programs (for example, online training, modeling, databases, data analysis programs);*
  - library resources, including the fund of educational, methodological and scientific literature on general education, basic and profile disciplines on paper and electronic media, periodicals, access to scientific databases;*
  - examination of research results, graduation papers, 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 the research work of teaching staff, staff and students.
- ✓ The university should strive to ensure that the educational equipment and software used for the development of educational programs are similar to those used in the relevant sectors of the economy.
- ✓ The management of the EP should demonstrate the availability of support procedures for various groups of students, including information and counseling.
- ✓ The management of the EP should show the availability of conditions for the advancement of the student along an individual educational trajectory.
- ✓ The university should take into account the needs of various groups of students (adults, working, foreign students, as well as students with special educational needs).
- ✓ The university must ensure that the infrastructure meets the security requirements.

### ***The evidentiary part***

The University's policy is aimed at academic support of students to achieve their personal and professional competencies, and to obtain an academic degree.

The University has 14 student organizations in various fields. During the year, the student government conducts more than 50 events of various directions.

To develop logical and critical thinking, develop skills of communicative culture and public speaking, prepare for independent decision-making, the ability to become personalities as future leaders of society, the Technocrat Debate Club annually holds the Technocup republican debate tournament and participates in various city and republican tournaments, in which they traditionally come out as winners, thereby protecting honor of the university.

To involve newly enrolled students in student clubs and organizations, student organizations annually participate in the Student Organizations Fair.

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

The League of Volunteers conducts public events, organizes seminars and master classes, and initiates youth projects and events to develop the volunteering movement.

The university pays special attention to the anti-corruption culture and students' general understanding of the essence of corruption. It is planned to create a Parasat school in the university, working under the programs "Sanaly urpak", "Adaldyk Alany" and "Parasat Zholy".

As part of the execution of the Decree of the Government of the Republic of Kazakhstan dated March 12, 2012 No. 320 "On the approval of the size, sources, types and Rules of providing social assistance to citizens who receive social assistance", and in order to provide all possible material and moral support to students, the university organized work on the payment of 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. Upon admission to study, students from among orphans and children left without parental care who are under guardianship are given a one-time cash allowance, compensation for meals, discounts on tuition in the amount of 25%, free repayment of no more than 6 credits for re-studying disciplines during 1 academic year.

In the sports club of the university, which is headed by the Master of sports in rhythmic gymnastics V. Laktionova, there are 10 sections in 9 sports.

The electronic catalog (EC) of the library was created on the basis of the automated library system "MegaPro" - a new generation web system built on the basis of "cloud" technologies. The electronic catalog contains bibliographic records of new arrivals of books and periodicals, articles and monographs of teaching staff, dissertations, abstracts and electronic resources and is constantly updated online. Access to all subscription electronic resources is provided through a single search window of the EBSCO Discovery Service system. In order to increase the availability of resources, EBS "IPRBoks" was integrated into the portal "Politech Online". The distance learning format is also supported by the use of mobile applications by students.

Scientists and novice researchers are provided with constant advisory assistance on the use of international databases of scientific citation; registration in Scopus, ORCID, Google Scholar; correction of the author's profile; selection of scientific journals for publications, the use of bibliographic tools, etc. The library constantly monitors the publication activity of university scientists. A significant amount of educational and methodical literature is constantly supplied to the library fund as a result of the scientific, methodological and publishing activities of the University. In accordance with the educational and research needs of users, access is also provided to thematic electronic collections of e-books. Collections of e-books of Elsevier publishing house (Chemical Engineering 2017 – 128 copies) were purchased.

For the implementation of the EP, the departments have the necessary amount of classroom fund, computers, a database of modern devices and equipment, which is constantly being updated.

When enrolling in academic disciplines (the formation of individual educational trajectories), advisors provide constant advice to students, explaining the results of training, the competencies that students acquire when mastering a particular discipline along each trajectory.

Thus, support refers to what is offered to students in the process of learning and developing academic independence, and what they learn for independent use.

KazNITU 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 meet the educational programs being implemented, sanitary and epidemiological standards and requirements.

The University has a developed information technology infrastructure consisting of: a high-performance computing cluster with a capacity of 80 Tfl, designed to solve scientific problems, 17 server equipment based on Windows and UNIX systems, supporting the stable operation of the university's business processes, a powerful computer park consisting of over 4 thousand workstations and modern technical means of training. The university has 105 computer classes, 136 multimedia and 6 language labs, 10 mobile multimedia kits.

The Information Technology Department 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 Internet network covers the main places of gathering of people with a wireless network, which is accessible to students, teaching staff and staff. To organize free access to Wi-Fi Internet for students and guests of the University, a communication gateway has been installed and configured. Several categories of networks are organized, such as a guest network in the Admissions Office, a network for Internet access for students and employees, including the ability to connect students of other educational institutions through the EduRoam service, an internal network of the University for employees. All networks are protected by network firewalls and have restrictions on the attendance of prohibited resources.

Satbayev University information platform combining the educational portal [sso.satbayev.university](http://sso.satbayev.university), [applications Office.com](http://applications.Office.com), as well as [polytechonline.kz](http://polytechonline.kz) offers students,

undergraduates, doctoral students and faculty a single entry point to the Educational Portal under corporate accounts.

One single corporate account provides the convenience of using 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 university has an effective system of information and feedback, which includes: university websites (official website <https://official.satbayev.university.ru>; entrant's website electronic library <https://satbayev.university.ru/library>, student forum, website for checking documents for plagiarism <http://sandyk.kazntu.kz/index.php> etc.); educational portal, WAP portal; electronic document management system, corporate Outlook mail; external media and others. The feedback results are widely used in the preparation of programs for the further development of the university, for the development of measures to improve the quality of training, certification and election to the position, differentiated payment of teaching staff, and participation of teaching staff in various competitions.

Operational familiarization of performers with the information is carried out electronically through the mailing list in the electronic documentologist system <https://satbayev.documentolog.kz/user/login>; internal mail system in the corporate network of the university. Online student satisfaction surveys and links are posted on the pages of interested parties when logging in with an account.

The learning management system of KazNRTU provides access to educational and methodological materials of the university for students of all forms of education, and is integrated with the educational portal of the university.

The University uses both self-written and third-party information systems, such as: HR - HR resource management system, the portal for accepting applications for accommodation in Dormitories (Dormitory), the mobile application of the Satbayev University educational portal for smartphones based on IOS and Android with high student ratings, the module "Graduation", the system of psychosomatic testing for military department, electronic Syllabus module, Laboratory – A tool for evaluating the effectiveness of scientific laboratories, etc.

### ***Analytical part***

The infrastructure of the university and the general equipment of the departments meet the requirements of sufficient educational resources and support services for students.

The department of accredited EP has material and technical support with laboratory equipment and information and technical equipment.

Sufficient support is provided to students by services that provide assistance in the educational process, library support and outside of the educational pastime. In addition, support services for international cooperation, providing academic mobility, are quite extensively represented, as well as links with practice sites have been established.

Social support programs for vulnerable categories of students are being successfully implemented, cash allowances and grants are allocated for them and priority is given when enrolling in a dormitory.

There is an adviser at the department who provides information and advice to students on the learning process.

Information resources in the form of an information platform, library support support the educational and scientific activities of teaching staff and students at a high level.

The examination of graduation and control works for borrowing is carried out.

Students and teaching staff have access to WI-FI in the main working area of the OE.

The self-assessment report, as well as the open resources of the OE, does not reflect the permissible percentage (threshold) of borrowings when checking exam papers and theses in the Anti-Plagiarism system, despite the fact that all works pass this check without fail.

### ***Strengths/Best practices***

According to EP 8D07110 – Digital engineering of machinery and equipment, no strengths were identified.

### ***Recommendations of the EEC***

According to EP 8D07110 – Digital engineering of machinery and equipment:

- develop a plan for updating the material and technical base and draw up a plan for the use of equipment in the available laboratories of partner universities. The implementation period is 2022-2024 academic years.

### ***The conclusions of the EEC according to the criteria: (strong/ satisfactory/ suggest improvements/ unsatisfactory)***

According to the standard "Educational resources and student support systems", 9 criteria are disclosed, of which: according to EP 8D07110 – Digital engineering of machinery and equipment 8 – have a satisfactory position, 1 – suggests improvement.

### **6.9. Standard "Informing the public"**

✓ *The university ensures that the published information is accurate, objective, up-to-date and reflects all the activities of the university within the framework of the educational program.*

✓ *Public awareness should include support and explanation of the national development programs of the country and the system of higher and postgraduate education.*

✓ *The management of the university should use a variety of ways to disseminate information (including mass media, web resources, information networks, etc.) to inform the general public and interested persons.*

✓ *Information about the educational program is objective, relevant and should include: the purpose and planned results of the OP, the assigned qualification; information and evaluation system of educational achievements of students; information about academic mobility programs and other forms of cooperation with partner universities, employers; information about the opportunities for the development of personal and professional competencies of students and employment; data reflecting the positioning of the OP in the market of educational services (at the regional, national, international levels).*

✓ *An important factor is the publication on open resources of reliable information about the teaching staff, in the context of personalities.*

✓ *The university must publish on its own web resource the audited financial statements on the EP.*

✓ *The university should post information and links to external resources based on the results of external evaluation 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.*

### ***The evidentiary part***

The University pays special attention to transparency and relevance of information for all stakeholders. The official web resource of the University is constantly analyzed by the Management. Informing the public by the University is carried out by placing announcements about upcoming events on the main page of the official website, placing all necessary internal regulatory documents for the use of all interested parties, as well as information on the EP. The department's pages contain the necessary information on the educational program, information on teaching staff and employers.

The University consistently implements a strategy of informing the public. The University, based on the principle of transparency, provides the public with information about its activities, including implemented programs, expected learning outcomes for these programs, assigned qualifications, teaching, training, evaluation procedures, passing scores and educational opportunities provided to students, as well as information about graduate employment opportunities. The process is managed by the Public Relations Center in accordance with the

internal documents of the university.

There is a "Rector's Blog" on the university's website, in which everyone can ask a question to the first head of the university and get an answer.

The university operates a public information system on the Internet, consisting of publications on the university's website and social networks (Instagram [https://www.instagram.com/satbayev\\_university/](https://www.instagram.com/satbayev_university/); Facebook <https://www.facebook.com/satbayevuniversity>; VK <https://vk.com/satbayevuniversity>; Telegram [https://t.me/Satbayev\\_University\\_Official](https://t.me/Satbayev_University_Official); LinkedIn <https://www.linkedin.com/school/1048308/admin/>; Twitter [https://twitter.com/NITU\\_Satpaev](https://twitter.com/NITU_Satpaev); YouTube <https://www.youtube.com/channel/UCzpfUbR-imEHB1hOX9tnKEg>; TikTok [https://www.tiktok.com/@satbayev\\_official?lang=en](https://www.tiktok.com/@satbayev_official?lang=en); Google Business <https://business.google.com/u/2/posts/1/13945254457139118465>).

The Satbayev University website is the main source of informing the public about the detailed content of educational programs, the mission, tasks and procedures of the university.

When selecting public information channels, preference is given to well-known and respected electronic media in Kazakhstan, where materials in news format and interviews are published taking into account local conditions, cultural and linguistic preferences of the population. The mass media and electronic publications used by the University include: The Republican newspaper "Kazakhstanskaya Pravda"; Forbes Kazakhstan; Egemen Kazakhstan; Expressk; Tengrinews; Nur.kz.

Currently, the university's distance learning platform Politechonline 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.

Updating of programs (passports of educational programs) are published on the official.satbayev.university website in the section "Documents: Educational programs" in three languages, compiled in accordance with the requirements of documents on the management of business processes and the educational process of the university.

The passports reflect the expected learning outcomes developed on the principle of modular learning and curricula indicating the proposed learning paths and qualifications awarded.

The site also contains complete information about all teachers working at the university. Each teacher has a profile containing a photo of the teacher, information about his scientific achievements and interests, syllabuses. For example: <https://official.satbayev.university/ru/teachers/arshamov-yalkunzhan>.

The profiles of the teachers are posted on the pages of the institutes on the website <https://official.satbayev.university/> in the "Institutes" section. Profiles of the best teachers are available on the pages of the institutes on the website <https://satbayev.university/> in the "Institutes" section. Since the beginning of 2020, there has been an updated Alumni section on the site, most of which is devoted to the career path of graduates.

An important criterion for evaluating the activity is the position of the university in national and international rankings. To date, the university has achieved the following results in national and international rankings: National Ranking of the best technical universities of Kazakhstan (NAOKO) – first place among technical universities for the second year in a row; QS World University Ranking – 501-510 th place among technical universities of the world; Times Higher Education World University Ranking - for the first time a technical university of Kazakhstan is included in the rating. Only 3 universities participate in the rating from Kazakhstan: KazNU, ENU and Satbayev University.

In 2021, for the first time in the history of Kazakhstan, Satbayev University entered the global QS World University Rankings By Subject 2021 in the Petroleum Engineering subject area of the Engineering and Technology category.



***Analytical part***

The university management supports publication on the main website, in electronic media and social networks regarding:

- implemented accredited EP;
- graduate qualifications upon completion of the EP;
- information about teaching approaches, training and assessment methods;
- information required for admission;
- potential employment; support and explanation of national development programs of the country and the higher education system; information about teaching staff;
- current partners and places of practice.

For a number of new directions adopted for the implementation of the EP, there is either a lack or incomplete reflection of information on the website and in social networks, meaning a lack of regularity.

The information on the university's website is presented in isolation and there is no possibility of switching to other aspects. For example, information about the EP is presented in the institutes block, then the department, and information about employment in the general block of the university, between which there is no connection and you have to overload the pages, links on the pages would be useful.

Although the employment data is not relevant for this EP, since there was no issue, but the site does not detail the data in the context of the EP, which is most important for applicants, and the data in general form is practically useless.

***Strengths/Best practices***

According to EP 8D07110 – Digital engineering of machinery and equipment, no strengths were identified.

***Recommendations of the EEC***

According to EP 8D07110 – Digital engineering of machinery and equipment, there are no recommendations within this standard.

***The conclusions of the EEC according to the criteria: (strong/ satisfactory/ suggest improvements/ unsatisfactory)***

according to the "Informing the Public" standard, 10 criteria are disclosed, of which: according to EP 8D07110 – Digital engineering of machinery and equipment, 10 have a satisfactory position.

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

According to EP 8D07110 – Digital engineering of machinery and equipment, no strengths were identified.

**(VIII) OVERVIEW RECOMMENDATIONS FOR QUALITY IMPROVEMENT****6.1. Standard "Educational Program Management"**

- to develop mechanisms and clear criteria within which the degree of participation of employers and doctoral students in the formation of the development plan of the OP will be determined. The implementation period is 2022-2023 academic year.

- to develop criteria used in the questionnaire for satisfaction of the expectations of doctoral students. The implementation period is 2022-2023 academic year.

- to develop a mechanism for the participation of stakeholders in the composition of collegial bodies in decision-making and a reporting form. The implementation period is 2022-2023 academic year.

*Standard "Development and approval of the educational program"*

- to develop criteria determining priority when making changes to the structure and content of the EP. The implementation period is 2022-2023 academic year.

- to develop a mechanism for conducting external examinations of the content and planned results of the implementation of the EP. The implementation period is 2022-2023 academic year.

- to develop criteria for assessing the qualitative participation of stakeholders in the development of the EP. The implementation period is 2022-2023 academic year.

- to develop a mechanism for assessing the compliance of the content of the EP and the planned learning outcomes. The implementation period is 2022-2023 academic year.

*Standard "Continuous monitoring and periodic evaluation of educational programs"*

- conduct an external examination of the content and learning outcomes of the EP. The implementation period is 2022-2023 academic years.

- develop and consolidate a mechanism for informing the public about changes in the EP. The implementation period is 2022-2023 academic years.

*Standard "Students"*

- to analyze the formation of a potential contingent based on the available logistical, information resources and human resources. The implementation period is 2022-2023 academic year.

*Standard "Teaching staff"*

- to develop a plan for the development of the personnel of the department, including through the involvement of practical teachers. The implementation period is 2022-2024 academic years.

*Standard "Educational resources and student support systems"*

- develop a plan for updating the material and technical base and draw up a plan for the use of equipment in the available laboratories of partner universities. The implementation period is 2022-2024 academic years.

**(IX) OVERVIEW RECOMMENDATIONS FOR THE DEVELOPMENT OF THE ORGANIZATION OF EDUCATION**

It is recommended to generate a log that is included in the Scopus database.

To attract the financing of the NGO for the purchase of additional equipment.

**(X) RECOMMENDATION TO THE ACCREDITATION COUNCIL**

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

**Conclusion of the External Expert Commission on the evaluation of the quality of the EP  
8D07110 Digital engineering of machinery and equipment of the Noncommercial Joint  
Stock Company "Kazakh National Research Technical University named after K.I.  
Satpayev"**

№ i\o	№ i\o	Evaluation criteria	The position of the organization of education			
			<i>strong</i>	<i>satisfactory</i>	<i>suggest improvements</i>	<i>unsatisfactory</i>
<b>Standard "Educational Program Management"</b>						
1	1.	The organization of higher and (or) postgraduate education should have a published quality assurance policy that reflects the relationship between scientific research, teaching and learning		+		
2	2.	The organization of higher and (or) postgraduate education should demonstrate the development of a culture of quality assurance, including in the context of EP		+		
3	3.	Commitment to quality assurance should apply to any activity performed by contractors and partners (outsourcing), including the implementation of joint/double-degree education and academic mobility		+		
4	4.	The management of the EP demonstrates transparency in the development of the EP development plan containing the start dates of implementation, based on an analysis of its functioning, the real positioning of the OE and the orientation of its activities to meet the needs of the state, employers, students and other interested parties		+		
5	5.	The management of the EP demonstrates the existence of mechanisms for the formation and regular revision of the development plan of the EP and monitoring its implementation, assessing the achievement of training goals, meeting the needs of students, employers and society, making decisions aimed at continuous improvement of the EP			+	
6	6.	The management of the EP should involve representatives of groups of interested persons, including employers, students and teaching staff in the formation of the development plan of the EP			+	
7	7.	The management of the EP must demonstrate the individuality and uniqueness of the development plan of the EP, its consistency with national priorities and the development strategy of the organization of higher and (or) postgraduate education		+		
8	8.	The organization of higher and (or) postgraduate education should demonstrate a clear definition of those responsible for business processes within the framework of the EP, an unambiguous distribution of staff responsibilities, and the differentiation of functions of collegial bodies		+		
9	9.	The management of the EP must provide evidence of the transparency of the educational program management system		+		
10	10.	The management of the EP must demonstrate the existence of an internal quality assurance system of the EP, including its design, management and monitoring, their improvement, and fact-based decision-making		+		
11	11.	The management of the EP should carry out risk management, including within the framework of the EP undergoing primary accreditation, as well as demonstrate a system of measures aimed at reducing the degree of risk		+		
12	12.	The management of the EP should ensure the participation of representatives of employers, teaching staff, students and other interested persons in the collegial management bodies of the educational program, as			+	

		well as their representativeness in making decisions on the management of the educational program				
13	13.	The OE should demonstrate innovation management within the framework of the EP, including the analysis and implementation of innovative proposals		+		
14	14.	The management of the EP must demonstrate evidence of readiness for openness and accessibility for students, teaching staff, employers and other interested persons		+		
15	15.	The management of the EP should be trained in educational management programs		+		
<b>Total according to the standard</b>			<b>0</b>	<b>12</b>	<b>3</b>	<b>0</b>
<b>Standard "Information management and reporting"</b>						
16	1.	The OE should demonstrate the existence of a system for collecting, analyzing and managing information based on the use of modern information and communication technologies and software tools and that it uses a variety of methods for collecting and analyzing information in the context of the EP		+		
17	2.	The management of the EP should demonstrate the existence of a mechanism for the systematic use of processed, adequate information to improve the internal quality assurance system		+		
18	3.	The management of the EP should demonstrate fact-based decision-making		+		
19	4.	A system of regular reporting reflecting all levels of the structure, including an assessment of the effectiveness and efficiency of the activities of departments and departments, scientific research, should be provided within the framework of the EP		+		
20	5.	The OE should establish the frequency, forms and methods of assessing the management of the EP, the activities of collegial bodies and structural units, senior management, and the implementation of scientific projects		+		
21	6.	The OE must demonstrate the definition of the procedure and ensuring the protection of information, including the identification of responsible persons for the reliability and timeliness of the analysis of information and the provision of data		+		
22	7.	An important factor is the availability of mechanisms for involving students, employees and teaching staff in the processes of collecting and analyzing information, as well as making decisions based on them		+		
23	8.	The management of the EP should demonstrate the existence of a mechanism for communication with students, employees and other stakeholders, as well as conflict resolution mechanisms.		+		
24	9.	The OE should demonstrate the existence of mechanisms for measuring the degree of satisfaction with the needs of teaching staff, staff and students within the framework of the EP		+		
25	10.	The OE should provide for an assessment of the effectiveness and efficiency of activities, including in the context of the EP		+		
		<i>The information intended for collection and analysis within the framework of the EP should take into account:</i>				
26	11.	key performance indicators		+		
27	12.	the dynamics of the contingent of students in the context of forms and types		+		
28	13.	of academic performance, student achievements and expulsion		+		
29	14.	satisfaction of students with the implementation of the EP and the quality of education at the university		+		
30	15.	availability of educational resources and support systems for students		+		
31	16.	The OE must confirm the implementation of procedures for processing personal data of students, employees and teaching staff on the basis of their documentary consent		+		
<b>Total according to the standard</b>			<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>

<b>Standard "Development and approval of the educational program"</b>							
32	1.	The OE should define and document the procedures for the development of the EP and their approval at the institutional level		+			
33	2.	The management of the EP should ensure that the content of the EP meets the established goals, including the expected learning outcomes		+			
34	3.	The management of the EP should demonstrate the existence of mechanisms for reviewing the content and structure of the EP, taking into account changes in the labor market, the requirements of employers and the social request of society			+		
35	4.	The management of the EP should ensure the availability of developed models of the graduate of the EP, describing the learning outcomes and personal qualities		+			
36	5.	The management of the EP must demonstrate the conduct of external examinations of the content of the EP and the planned results of its implementation			+		
37	6.	The qualification assigned upon completion of the EP must be clearly defined and correspond to a certain level of the NSC and QF-EHEA		+			
38	7.	The management of the EP should determine the influence of disciplines and professional practices on the formation of learning outcomes		+			
30	8.	An important factor is the possibility of training students for professional certification		+			
40	9.	The management of the EP must provide evidence of the participation of students, teaching staff and other interested parties in the development of the EP, ensuring its quality			+		
41	10.	The management of the EP should ensure that the content of academic disciplines and the planned results correspond to the level of education (bachelor's, master's, doctoral studies)		+			
42	11.	The structure of the EP should provide for various types of activities that ensure that students achieve the planned learning outcomes		+			
43	12.	An important factor is the correspondence of the content of the EP and the results of the training of the EP, implemented by organizations of higher and (or) postgraduate education in the EHEA			+		
<b>Total according to the standard</b>			<b>0</b>	<b>8</b>	<b>4</b>	<b>0</b>	
<b>Standard "Continuous monitoring and periodic evaluation of educational programs"</b>							
44	1.	The OE should define mechanisms for monitoring and periodic evaluation of the EP to ensure the achievement of the goal and meet the needs of students, society and show the orientation of the mechanisms for the continuous improvement of the EP		+			
		Monitoring and periodic evaluation of the EP should include:					
45	2.	the content of the program in the light of the latest achievements of science in a particular discipline to ensure the relevance of the discipline taught			+		
46	3.	changes in the needs of society and the professional environment		+			
47	4.	the workload, academic performance and graduation of students		+			
48	5.	the effectiveness of evaluation procedures for students		+			
49	6.	expectations, needs and satisfaction of students with training in EP		+			
50	7.	educational environment and support services, and their compliance with the goals of the EP		+			
51	8.	The management of the EP should demonstrate a systematic approach to monitoring and periodic evaluation of the quality of the EP		+			

52	9.	The OE, the management of the EP should define a mechanism for informing all interested parties about any planned or taken actions in relation to the EP			+	
53	10.	All changes made to the EP must be published			+	
<b>Total according to the standard</b>			<b>0</b>	<b>7</b>	<b>3</b>	<b>0</b>
<b>Standard "Student-centered learning, teaching and assessment of academic performance"</b>						
54	1.	The management of the EP should ensure respect and attention to different groups of students and their needs, provide them with flexible learning paths			+	
55	2.	The management of the EP should provide for the use of various forms and methods of teaching and learning			+	
56	3.	An important factor is the availability of own research in the field of teaching methods of educational disciplines.			+	
57	4.	The management of the EP should demonstrate the existence of feedback mechanisms for the use of various teaching methods and evaluation of learning outcomes			+	
58	5.	The management of the EP should demonstrate the existence of mechanisms to support the autonomy of students with simultaneous guidance and assistance from the teacher			+	
59	6.	The management of the EP must demonstrate the existence of a procedure for responding to complaints from students			+	
60	7.	The OE should ensure consistency, transparency and objectivity of the learning outcomes assessment mechanism for each EP, including the appeal			+	
61	8.	The OE should ensure that the procedures for evaluating the learning outcomes of the students of the EP correspond to the planned results and goals of the program, the publication of criteria and evaluation methods in advance			+	
62	9.	The OE should define mechanisms to ensure that each graduate of the EP achieves learning outcomes and ensures the completeness of their formation			+	
63	10.	Evaluators should be familiar with modern methods of evaluating learning outcomes and regularly improve their skills in this area			+	
<b>Total according to the standard</b>			<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>
<b>Standard "Students"</b>						
64	1.	The OE must demonstrate the existence of a policy for the formation of a contingent of students in the context of the EP, ensure transparency and publication of its procedures governing the life cycle of students (from admission to completion)			+	
		The management of the EP should determine the order of formation of the contingent of students based on:				
65	2.	minimum requirements for applicants			+	
66	3.	of the maximum size of the group when conducting seminars, practical, laboratory and studio classes			+	
67	4.	forecasting the number of state grants			+	
68	5.	analysis of available material and technical, information resources, human				+
69	6.	resources, analysis of potential social conditions for students, including the provision of places in the dormitory			+	
70	7.	The management of the educational institution should demonstrate readiness to conduct special adaptation and support programs for newly enrolled and foreign students			+	

71	8.	The OE must demonstrate compliance of its actions with the Lisbon Recognition Convention, the existence of a mechanism for recognizing the results of academic mobility of students, as well as the results of additional, formal and non-formal education		+		
72	9.	The OE should cooperate with other educational organizations and national centers of the "European Network of National Information Centers for Academic Recognition and Mobility/National Academic Recognition Information Centers" ENIC/NARIC in order to ensure comparable recognition of qualifications		+		
73	10.	The OE should provide an opportunity for external and internal mobility of students of the EP, as well as readiness to assist them in obtaining external grants for training		+		
74	11.	The management of the EP should demonstrate readiness to provide students with internship places, promote the employment of graduates, and maintain communication with them		+		
75	12.	The OE should provide for the possibility of providing graduates of the EP with documents confirming the qualifications obtained, including the achieved learning outcomes, as well as the context, content and status of the education received and certificates of its completion		+		
<b>Total according to the standard</b>			<b>0</b>	<b>11</b>	<b>1</b>	<b>0</b>
<b>Standard "Teaching staff"</b>						
76	1.	The OE should have an objective and transparent personnel policy, including in the context of the EP, including hiring, professional growth and development of personnel, ensuring the professional competence of the entire staff		+		
77	2.	The OE must demonstrate the compliance of the personnel potential of the teaching staff with the specifics of the EP			+	
78	3.	The management of the EP must demonstrate awareness of responsibility for its employees and ensure favorable working conditions for them		+		
79	4.	The management of the EP should demonstrate the change in the role of the teacher in connection with the transition to student-centered learning		+		
80	5.	The OE should determine the contribution of the teaching staff of the EP to the implementation of the development strategy of the OE, and other strategic documents		+		
81	6.	The OE should provide opportunities for career growth and professional development of the teaching staff of the EP		+		
82	7.	The management of the EP should demonstrate readiness to involve practitioners of relevant sectors of the economy in teaching			+	
83	8.	The OE should demonstrate the motivation of the professional and personal development of the teachers of the EP, including encouragement for the integration of scientific activity and education, the use of innovative teaching methods		+		
84	9.	An important factor is the readiness to develop academic mobility within the framework of the EP, to attract the best foreign and domestic teachers		+		
<b>Total according to the standard</b>			<b>0</b>	<b>7</b>	<b>2</b>	<b>0</b>
<b>Standard "Educational resources and student support systems"</b>						
85	1.	The OE should guarantee a sufficient number of educational resources and student support services to ensure the achievement of the goal of the EP		+		
86	2.	The OE must demonstrate the sufficiency of material and technical resources and infrastructure, taking into account the needs of various groups of students in the context of educational institutions (adults, working, foreign students, as well as students with disabilities)		+		

87	3.	The management of the EP should demonstrate the availability of support procedures for various groups of students, including information and counseling		+		
		The management of the EP must demonstrate the compliance of information resources with the specifics of the EP, including:				
88	4.	technological support for students and teaching staff (for example, online training, modeling, databases, data analysis programs)		+		
89	5.	library resources, including a fund of educational, methodological and scientific literature on general education, basic and profile disciplines on paper and electronic media, periodicals publications, access to scientific databases		+		
90	6.	examination of research results, graduation papers, dissertations on plagiarism		+		
91	7.	access to educational Internet resources		+		
92	8.	functioning of WI-FI on the territory of the educational organization		+		
93	9.	The OE demonstrates the planning of providing the EP with educational equipment and software tools similar to those used in the relevant sectors of the economy			+	
<b>Total according to the standard</b>			<b>0</b>	<b>8</b>	<b>1</b>	<b>0</b>
<b>Standard "Informing the public"</b>						
		The OE must publish reliable, objective, up-to-date information about the educational program and its specifics, which should include:				
94	1.	expected learning outcomes of the educational program being implemented		+		
95	2.	qualifications and (or) qualifications that will be assigned upon completion of the educational program		+		
96	3.	teaching approaches, training, as well as the system (procedures, methods and forms) of assessment		+		
97	4.	information about passing scores and educational opportunities provided to students		+		
98	5.	information about graduate employment opportunities		+		
99	6.	The management of the EP should provide for a variety of ways to disseminate information, including mass media, information networks to inform the general public and interested persons		+		
100	7.	Public awareness should include support and explanation of the national development programs of the country and the system of higher and postgraduate education		+		
101	8.	The OE must demonstrate the reflection on the web resource of information that characterizes it in general and in the context of educational programs		+		
102	9.	An important factor is the availability of adequate and objective information about the teaching staff of the EP		+		
103	10.	An important factor is informing the public about cooperation and interaction with partners within the framework of the EP		+		
<b>Total according to the standard</b>			<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>
<b>TOTAL</b>			<b>0</b>	<b>89</b>	<b>14</b>	<b>0</b>

0 % of parameters have the position "strong"

89 (86,4%) parameters have the position "satisfactory"

14 (13,6%) parameters have the position "suggests improvement"

0 % of parameters have the position "unsatisfactory"