REPORT

on the results of the work of the external expert commission for the evaluation for compliance with the requirements of the standards of primary specialized accreditation of educational programs (Ex - ante)

8D06104 CYBERNETICS AND ARTIFICIAL INTELLIGENCE
NJSC "KAZAKH NATIONAL RESEARCH TECHNICAL
UNIVERSITY NAMED AFTER K.I. SATBAYEV"

Date of EEC visit: from April 19 to April 21, 2022

Addressed to the
IAAR Accreditation
Council

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Almaty,   **April 21, 2022**

CONTENT

(I) <u>LIST ABBREVIATIONS</u>

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) <u>INTRODUCTION</u>

In accordance with Order No. 44-22-OD dated February 23, 2022 of the General Director of the Independent Agency for Accreditation and Rating, an external expert commission assessed the compliance of the educational programs, including an external assessment, 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) of following educational program EP 8D06104 Cybernetics and artificial intelligence.

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

The composition of the EEC:

Chairman of the IAAR EEC - Lushchik Alexander Cheslavovich, Doctor of Physical and Mathematical Sciences, Professor, Head of the Laboratory of Physics of Ionic Crystals at the Institute of Physics of the University of Tartu (Tartu, Estonia).

IAAR EEC Coordinator – 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 L.N. Gumilyov Eurasian National University (Nur-Sultan, Republic of Kazakhstan).
	IAAR Expert student - Serikkaliev Tasbolat Serikkaliuly (Serikkaliev Tasbolat Serikkalievich), Executive Director of the Branch of the Alliance of University Students 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 G. Daukeev Almaty University of Energy and Communications (Almaty, Republic of Kazakhstan).
8D07104 Oil and gas and ore geophysics	*IAAR Expert* - Aleksey Lozhnikov, Doctor of Technical Sciences, Professor of the National Technical University "Dnipro Polytechnic" (Dnipro, Ukraine).

Cluster 2. Primary specialized accreditation

6V07305 Transport construction, 7M07320 Transport construction	*IAAR Expert* - Rabat Ondabek Zhanakhmetuly, Doctor of Technical Sciences, Professor of the L.B. Goncharov Kazakh Automobile and Road Academy (Almaty, Republic of Kazakhstan).
6B07115 Technological machines and equipment (by industry)	*IAAR Expert* - Sembaev Nurbolat Sakenovich, Ph.D., Associate Professor of Toraigyrov University (Pavlodar, Republic of Kazakhstan).
	student IAAR Expert - Bekmyrza Zhumash Aitzhanuly, student of EP 8D07102 Technological machines and equipment (mechanical engineering) of A. Baitursynov Kostanay Regional University

(Kostanay, Republic of Kazakhstan).

8D07114 Nanomaterials and Nanotechnology	*IAAR Expert* - Nazhipkyzy Meruert, Ph.D., Associate Professor of al-Farabi Kazakh National University (Almaty, Republic of Kazakhstan).

Cluster 3. Primary specialized accreditation

7M11201 Hygiene and labor protection at work	*IAAR Expert* – Baitelesova Laura Ilyasovna, Ph.D., 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. Serikbaev 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 (Karaganda, Republic of Kazakhstan).
8D07303 Construction and production of building materials and structures.	*IAAR Expert* - Saktaganova Nargul Amanovna, PhD, Associate Professor of Korkyt ata Kyzylorda University (Kyzylorda, Republic of Kazakhstan).
	IAAR Expert, employer - Pilipenko Yury Alexandrovich, Chairman of the International Association of Producers of Goods and Services "Expobest" (Almaty, Republic of Kazakhstan).

Cluster 4. Primary specialized accreditation

8D11301 Transport services	*Expert IAAR* - Pak Yuriy Nikolaevich, Doctor of Technical Sciences, Professor of Karaganda Technical University (Karaganda, Republic of Kazakhstan).
7M04104 Executive MBA	*Expert IAAR* - Inna Sidorova , MBA, Master of Science in Economics, Business Manager, BGC Partners, (London , United kingdom).
8D04102 Management	*Expert IAAR* – Arzaeva Maya Zhetkergenovna, PhD in Economics, Associate Professor of the Academy of Logistics and Transport (Almaty, Republic of Kazakhstan).
	Expert IAAR student – Kereeva Tansholpan Makhambetkyzy, 2nd year student of EP 7M04106 at K. Zhubanov Aktobe Regional University (Aktobe, Republic of Kazakhstan).

Cluster 5. Primary specialized accreditation

6B07114 Biomedical engineering	*Expert IAAR* - Yurikova Oksana Yuryevna, PhD, Senior Lecturer of al-Farabi Kazakh National University (Almaty, Republic of Kazakhstan).
6B07112 Electronic and Electrical	*Expert IAAR* - Zhumazhanov Serik Karatayevich, Ph.D., Senior Lecturer, S. Seifullin Kazakh Agrotechnical University (Nur-Sultan, Republic of Kazakhstan).

Engineering	*Expert IAAR* - Shunkeev Kuanyshbek Shunkeevich, Doctor of Physical and Mathematical Sciences, Professor of K. Zhubanov Aktobe Regional University (Aktobe, Republic of Kazakhstan).
8D06105 Information security systems	*Expert IAAR, student* - Zhanel Sairanovna Talipova, 2nd year student of EP 7M07105 Automation and Control of S. Seifullin Kazakh Agrotechnical University (Nur-Sultan, Republic of Kazakhstan).
6B07112 Electronic and Electrical Engineering	

Cluster 6. Primary specialized accreditation

8D06104 Cybernetics and artificial intelligence	*Expert IAAR* - Gnatushenko Vladimir Vladimirovich, Doctor of Technical Sciences, Professor of the National Technical University "Dnipro Polytechnic" (Dnipro, Ukraine).
6B07106 Mechanical Engineering	*Expert IAAR* - Bakhtiyar Balzhan Turepashkyzy, Ph.D., Associate Professor of the Academy of Logistics and Transport (Almaty, Republic of Kazakhstan).
8D07110 Digital engineering of machinery and equipment	*Expert IAAR* - Andrei Kichuk, President of the National Agency for Quality Assurance in Education and Scientific Research - ANAC EC (Chisinau, Moldova).
8D07109 Innovative technologies and new inorganic materials	*Expert IAAR* - Mashan Togzhan Turgalievna, Candidate of Chemical Sciences, Associate Professor of L.N. Gumilyov Eurasian National University (Nur-Sultan, Republic of Kazakhstan).
	Expert IAAR, 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).

(III) <u>REPRESENTATION OF THE EDUCATIONAL ORGANIZATION</u>

K.I. Satbayev KazNRTU is the largest scientific and methodological center in Kazakhstan, developing special educational programs aimed to training specialists to industry, complex projects and creating teams of world-class professionals. History of K.I. Satbayev KazNRTU begins from the creation of the Kazakh Mining and Metallurgical Institute in 1934. On July 5, 2001, by the Decree of the President of the Republic of Kazakhstan, the University had been received a special status - it became a major educational center coordinating the training of scientific and engineering personnel in Kazakhstan. Academic activity Satbayev University is aimed at improving the training quality of competitive generation of modern engineers to meet the needs of the industry in specialists, as well as their technological developments. Educational programs at Satbayev University are developed according to the principle of modular structuring, with considering the Dublin descriptors. The European system of transferring academic credits ECTS has been introduced.

The university has implemented the transition to a multi-level system of higher and

postgraduate education (bachelor's degree - master's degree - PhD degree). At the same time, the University has a license in 41 training directions, incl. undergraduate - 15; doctoral studies - 15; doctoral studies PhD - 11.

Satbayev University is included in the the Chevron University Partnership Program. This program involves Cambridge, Stanford Universities and the Massachusetts Institute of Technology. Satbayev University has been introduced the quality management system that complies with ISO 9001:2000, certified by the Russian Register and IQNet in relation to educational activities for the training of personnel with higher professional education based on state educational standards of the Republic of Kazakhstan in specialties and areas in accordance with the area of licensing, state certification and accreditations since 2005. Subsequently, the University repeatedly went through the recertification procedure and confirmed the double Certificate ISO 9001-2015 dated November 26, 2020 No. 20.2014.026 (2008, 2011, 2014, 2017, 2020). University implements the International Accreditation Program, and currently 16 EPs in the field of engineering and technology are accredited by the ASIIN Agency. Institutional accreditation at the national level was successfully passed at the National Accreditation Center under the Ministry of Education and Science of the Republic of Kazakhstan and received a certificate No.000001, an institutional assessment by the European Association of Universities at the international level.

The University owns academic resources for the implementation of educational activities for the accredited study program.

(IV) DESCRIPTION OF THE EEC VISIT

The work of the EEC was carried out within the Online Visit Program of the Expert Commission for International Primary Specialized Accreditation of K.I. Satbayev Kazakh National Research Technical University from 19 to 21 April 2022.

In order to coordinate the EEC's work, an online kick-off meeting was held on April 15, 2022, where powers were distributed among the EEC members, the schedule of the visit was specified, and agreement was reached on the choice of examination methods.

In accordance with the requirements of the standards, the Program of the visit included online meetings with the Chairman of the Board - the rector, vice-rectors, heads of structural divisions, deans, heads of university departments, teachers, students, employers and employees from various departments, interviewing and questioning teachers and students.

During the online tour, the EEC members got acquainted with the material and technical base, visited lecture halls and classrooms for laboratory and practical work of the departments where the relevant educational programs are accredited.

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

The events planned within the framework of the visit of the IAAR EEC contributed to the familiarization of experts with the databases of practices.

EEC members attended online training sessions. Unfortunately, there were no classes for students at the accredited EP 8D06104 Cybernetics and Artificial Intelligence during the examination (ended in the first semester).

In accordance with the accreditation procedure, a survey of 71 teachers and 41 students was conducted.

In order to confirm the information presented in the Self-Assessment Report, the working documentation of the university was requested and analyzed by external experts. The experts studied the official website of the university https://satbayev.university/ru.

All conditions were created for the EEC work, access to all necessary information

resources was organized. From the team of KazNRTU named after K.I. Satbayev, the presence of the persons indicated in the visit program was ensured in compliance with the established time period.

(V) DESCRIPTION OF THE PREVIOUS ACCREDITATION PROCEDURE

Educational program 8D06104 Cybernetics and Artificial Intelligence external assessment for compliance 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 from "25" May 2018) are being held for the first time.

(VI) COMPLIANCE WITH THE STANDARDS OF PRIMARY SPECIALIZED ACCREDITATION (EX-ANTE)

6.1. Standard "Management of the educational programme"

• *The organization of higher and (or) postgraduate education must have a published quality assurance policy. The quality assurance policy should reflect the relationship between research, teaching and learning.*

• *The organization of higher and (or) postgraduate education must demonstrate the development of a culture of quality assurance, including in the EP context.*

• *Commitment to quality assurance should apply to any activity performed by contractors and partners (outsourcing), including the implementation of joint/double-degree education and academic mobility.*

• *The management of the EP demonstrates its readiness to ensure transparency in the development of the EP development plan based on an analysis of its functioning, the actual positioning of the EP and the focus of its activities on meeting the needs of the state, employers, students and other stakeholders. The plan should contain the dates for the start of the implementation of the educational program.*

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

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

• *The management of the EP must demonstrate the individuality and uniqueness of the EP development plan, its consistency with national priorities and the development strategy of the organization of higher and (or) postgraduate education.*

• *Organization of higher and (or) postgraduate education must demonstrate a clear definition of those responsible for business processes within the EP, an unambiguous distribution of staff duties, and delimitation of the functions of collegial bodies.*

• *The management of the EP must provide evidence of the transparency of the educational program management system.*

• *The management of the EP must demonstrate the existence of an internal quality assurance system for the EP, including its design, management and monitoring, their improvement, decision-making based on facts.*

• *The management of the EP must carry out risk management, including within the framework of the EP undergoing primary accreditation, and also demonstrate a system of*

measures aimed at reducing the degree of risk.
- *The management of the EP should ensure the participation of representatives of employers, teaching staff, students and other interested parties in the collegiate management bodies of the educational program, as well as their representativeness in making decisions on the management of the educational program.*
- *The EO must demonstrate innovation management within the EP, including the analysis and implementation of innovative proposals.*
- *The management of the EP must demonstrate evidence of readiness for openness and accessibility for students, teaching staff, employers and other interested parties.*
- *The management of the EP should be trained in education management programs.*

Evidence

The main operating procedures for managing the educational program are provided within the framework of an internal quality assurance system, which includes a Quality Assurance Policy. The quality policy reflects the main activities, intentions and obligations of KazNRTU named after K.I. Satbayev now and in the future, taking into account the strategic development plan of the university.

Since August 2005, the University has developed and implemented a certified Quality Management System in accordance with the international standard ISO 9001.

To support the main business processes at the university, a set of internal regulatory documents has been developed that regulates the implementation of educational programs. The university has an effective system for monitoring the quality of education, as a result, an internal corporate management environment has been created that allows employees and faculty to be fully involved in the process of achieving goals for the quality of education. However, the Self-evaluation report does not contain answers to the questions "Are there business processes specific to the EP being accredited? In what documents are they reflected?"

The University was the first in Kazakhstan who pass and re-confirm the International Institutional Evaluation in the European University Association (EUA) under the International Evaluation Program (IEP, International Evaluation Program).

Internal documents of the University are issued within the framework of the quality management system, define the format of educational documentation regulating the implementation of educational programs through work programs, educational and methodological complexes of disciplines, teaching aids, test tasks, etc. The regulatory documents reflect the issues of registration of students to attend training sessions, conducting current, intermediate and final controls, organizing the passage of students of all types of practices, assessing students' knowledge, rules for transfer, restoration, expulsion of students, final certification, etc.

The University has a mechanism of internal and external evaluation of the educational program in the process of its formation. Internal evaluation of educational programs is carried out at the level of: Specialty Councils at departments, Educational and Methodological Councils of institutes and universities, the Academic Council of the Institute, the Department of Academic Affairs, internal audits of the Department of Corporate Development and the Academic Council of the University.

Doctoral students of EP 8D06104 Cybernetics and Artificial Intelligence have the opportunity to practice in the companies Sergek, City Transportation System, JSC Almaty Development Center, Institute of Mathematics and Mathematical Modeling. The same companies, according to the management of the EP, are regularly involved in the formation of a modular curriculum, which, unfortunately, was not fully confirmed during communication with representatives of focus groups. The wishes of doctoral students are revealed during their questionnaires, posted on the university's website, in research reports.

The planned foreign internships of doctoral students of the EMM department were canceled due to the pandemic.

The organizational and legal consolidation of management functions, the rational delimitation of powers, the establishment of the rights, duties and responsibilities of heads of departments are determined by the Regulations on Divisions and job descriptions developed in accordance with the current organizational and management documents of the university and standards(https://official.satbayev.university/ru/vnutrennie-normativnye-dokumenty/2-uroven-standarty-kaznitu). The Academic Council of the University is the highest elected representative body to ensure the effectiveness of collegial management of its activities, including quality management, acting on the basis of the University Charter and the Regulations on the Academic Council. Operational management of educational programs is carried out by the University Board.

The self–assessment report of EP 8D06104 Cybernetics and Artificial Intelligence states: "The development plan was discussed at a meeting of the Academic Council of the university, within the framework of the Specialty Council, at the department level - at a meeting of the EMM department," however, during the accreditation of the EEC, it was not possible to get acquainted with this document (according to the management of the EP, it is missing).

The University systematically analyzes information about its activities, analyzes and evaluates risks, assesses strengths and weaknesses, market opportunities and existing threats. However, there is no such systematization within the accredited EP.

The management of the EP is open and accessible to various groups of interested persons, the work schedule of the heads of the university (rector and vice-rectors) defines the time for receiving visitors. Under quarantine conditions, students and their parents have the opportunity to contact the university administration with their questions online. There is a "Rector's Blog" on the university's website. KazNRTU students have created a mobile application "SU Solutions", in which all interested persons (students, teaching staff and employees) have the opportunity to ask a question, offer their ideas and ways to eliminate emerging problems.

The University provides annual professional development of teachers and heads of departments, including training in educational management programs. In the summer of this year, the head of the EMM department, Aidarkhan Kaltayev, is scheduled to take management improvement courses in connection with the work related to the distribution of the teaching load of the teaching staff of the department, the approval of syllabuses and quality control of classes. The teaching staff of the EMM department took web courses "Improving skills in distance education", "Conducting an exam in the form of distance learning", training "Improving pedagogical skills", etc.

Analytical part

The above remarks are explained by the management of the EP by structural changes at the university: since August 2021, due to structural changes, the department "Applied Mechanics and Engineering Graphics" has been divided into two departments: "Mechanical Engineering and Modeling" and "Descriptive Geometry and Engineering Graphics". The Department of Mechanical Engineering and Modeling also includes a part of the Scientific and Educational Center "Mathematics and Cybernetics", whose teaching staff is responsible for the educational program "Mathematical and Computer Modeling".

As a result of the analysis of the self-assessment report submitted during the visit of internal documents, conversations with target groups, it was found that stakeholders (students, teachers) are aware of the existence of the Strategic Development Plan of the University, the Policy and goals in the field of quality, internal regulations. At the same time, the university, the management of the accredited EP, during the visit of the EEC, did not demonstrate the development of a culture of quality assurance within the framework of the accredited EP, this issue was not reflected in the self-assessment report.

Prior to the start of the accreditation procedure, the report and the annexes to the report did not present plans for the development of the EP, information on the development plans for the EP was not found on the website. Thus, accordingly, part of the stakeholders in the development of the EP development plan has not been confirmed, and there is no regular revision of the EP development plan.

The university has a regulation on risk management, however, during an online visit and meetings with the heads of structural divisions – the director of the institute and the head of the Department of EMM, it was not possible to establish how the management of the EP identifies and systematizes risks. The management of the EP needs to update the risks, especially in connection with structural changes at the university and related personnel policy. It may be necessary to strengthen the Department of EMM by SS specialists from other institutes, for example, the Institute of Automation and Information Technology. A possible option is to "transfer" this EP to the specified profile institute.

Strengths/best practice
Not identified

EEC recommendations for EP 8D06104 Cybernetics and Artificial Intelligence:
The management of the University to develop by July 1, 2022 uniform requirements for the development of plans for the development of educational programs of the university, taking into account:
- compliance of the EP development plan with the Strategic Development Plan of the university and the needs of the labor market;
- specific indicative indicators, indicating the timing of implementation, for the main types of EP activities;
- involvement of employers, students and teaching staff in drawing up a development plan for the EP;
- determining the individuality and uniqueness of the EP development plan within the real positioning of the university;
- a mechanism for monitoring the implementation of the development plan of the EP institution and evaluating the achievement of learning goals and regular revision of the development plan of the educational institution in connection with possible changes in regulatory legal acts in the higher EP system with the involvement of teachers of graduating departments, employers and students. The results of monitoring should be communicated to all interested parties.

☐ The management of the EP should develop a development plan for the EP "8D06104 – Cybernetics and Artificial Intelligence" by August 1, 2022.

☐ The management of the EP should specify by August 1, 2022 measures to reduce the impact of risks in the design and implementation of the EP, specifying those responsible and the timing of implementation. Systematically analyze risk management at the level of structural units and educational programs.

☐ To develop, by August 1, 2022, an analysis methodology and identify mechanisms to ensure the implementation of innovative proposals within the framework of the EP "8D06104 – Cybernetics and Artificial Intelligence".

Conclusions of the EEC according to the criteria:
According to the standard "Educational Program Management" according to EP 8D06104 Cybernetics and artificial intelligence, 15 criteria are disclosed, of which: 9 have a satisfactory position, 6 suggest improvement.

6.2 Standard "Information management and reporting"

- EO 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 and that it uses a variety of methods to collect and analyze information in EP context.
- EP management should demonstrate the existence of a mechanism for the systematic use of processed, adequate information to improve the internal quality assurance system.
- EP management should demonstrate decision-making based on facts.
- Within EP framework, a system of regular reporting should be provided reflecting all levels of the structure, including an assessment of the performance and efficiency of the unit activities and departments, scientific research.
- EO should establish the frequency, forms and methods of assessing EP management, activities of collegial bodies and structural units, top management, the implementation of scientific projects.
- EO should demonstrate the determination of the order and ensuring the protection of information, including the identification of persons responsible for the accuracy and timeliness of the analysis of information and the data provision.
- An important factor is the availability of mechanisms for involving students, employees and TS in the processes of collecting and analysing information, as well as making decisions based on them.
- EP management should demonstrate the existence of a communication mechanism with students, employees and other concerned parties, as well as mechanisms for resolving conflicts.
- EO should demonstrate the existence of mechanisms for measuring the degree of satisfaction of the TS needs, personnel and students within EP framework.
- EO should provide for the assessment of the performance and efficiency of activities, including in EP context
- The information expected to be collected and analyzed within the framework of the EP should take into account:
- key performance indicators;
- the dynamics of the contingent of students in the context of forms and types;
- academic performance, student achievement and dropouts;
- satisfaction of students with the implementation of the EP and the quality of education at the university;
- availability of educational resources and support systems for students;
- The EO must confirm the implementation of the procedures for processing personal data of students, employees and teaching staff on the basis of their documented consent.

Evidence

Satbayev University operates both traditional processes for managing and transmitting information, as well as using software products and information systems, has its own development - the Educational Portal sso.satbayev.university , which establishes the main connection between the student and the teaching staff, including with other structural divisions and provides access to electronic educational materials of disciplines, educational and individual plans, schedules of classes and exams, information about advisors and employers, news and announcements. The accounts of students, teaching staff and employees of the University are created in a single corporate directory Microsoft ActiveDirectory, as well as the accounts are synchronized with the Microsoft AzureAD cloud service in order to gain access to the Microsoft cloud services used for

training. As the main source of information data in the activities of the educational process, a 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, on the number of doctoral students, academic performance, student population, etc. The DataCenter division conducts analytics and maintains statistics, receives a copy of the educational process data and processes the received data. Work continues to provide electronic publications in accordance with educational programs, the university has introduced a unified system for managing higher education of the Ministry of Education and Science of the Republic of Kazakhstan (ESUVO).

The University constantly carries out systematic work to improve the functioning of the system for collecting, analyzing and managing information. The main information flows of the university are: educational portal http://sso.kaznitu.kz/account/login/; distance education portal https://polytechonline.kz/; also Microsoft 365 platform; "Anti-plagiarism system" http://strikeplagiarism.com/en/; a webinar that allows you to conduct online lectures; placement of scientific articles by teaching staff and scientists of KazNRTU, etc.

Each teacher of the department and doctoral student is assigned a login and password to access the educational portal http://sso.kaznitu.kz/account/login/, where they can see their schedule of classes and exams, conduct a journal of visits, place an educational and methodological complex of disciplines, fill out an individual curriculum, provide topics for dissertations, monitor the progress of students assigned to an advisor, put down points for students on current and midterm control, and view the results of final certification and exams.

According to the doctoral programs according to the academic calendar and the IEP, 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. At the end of each academic semester and the end of the academic year, reports of teaching staff on educational, methodological, scientific work are heard at the meetings of the department.

At the Academic Council of the Institute, the heads of departments are reported the semi-annual and annual results of the department's activities in accordance with Form F KazNRTU 705-10. Plan (report) of the institute (department).

Management of the educational process is based on the collegial decisions of the academic community of the university, taking into account the opinion of the students' environment. 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 the university departments and open procedures for appraisal of employees and competitive selection of new employees. Management of financial and economic activities is based on strict adherence to international financial reporting standards and independent control of the Board of Directors of the University. Evaluation of the activities of the management of the departments, as structural divisions of the university, is carried out in accordance with the Documented procedure of the DP KazNRTU 801. Internal audit with the involvement of certified teaching staff and employees of the University is carried out twice in academic year, according to the approved schedule for conducting internal audit (in the documented procedure of the DP KazNRTU 502. Analysis of management established the procedure and criteria for conducting an analysis of activities).

The University has an "Information Security Policy".

The University annually conducts its own internal monitoring with self-assessment for the presence of corruption risks or conflicts of interest in relationships, and in accordance with the obligations of membership, the university is subject to external monitoring to assess integrity by the League of Academic Integrity.

At the university, at least once a year, questionnaire surveys of teaching staff "Satisfaction

of teaching staff with the university" and students "Teaching staff through the eyes of a student", "Student satisfaction with the university" are conducted. The information provided in the report regarding the involvement of students and teaching staff in the framework of the EP "8D06104 – Cybernetics and Artificial Intelligence" in the collection and analysis of questionnaires is presented without detail. During the accreditation process, it was also not possible to get answers to the question of how the analysis of the degree of satisfaction affects the improvement of the implementation of the EP "8D06104 – Cybernetics and Artificial Intelligence" and decision-making.

A Strategy and Development Program for 2022-2026 have been developed, which reflects the main performance indicators of KPIs in various areas of the University's activities and Strategic Goals by 2026.

The KazNRTU Library has an extensive system of service points. At the service of readers – 8 subscriptions, 7 reading rooms, 2 halls of electronic resources. The total area of the library is 3400 sq. m., the number of seats is 89. The Library's computer park consists of 155 computers connected to the Internet, 2 scanners for digitizing the collection, barcode equipment, an information kiosk for searching and ordering literature. Wi-fi points for readers' work are installed in the reading rooms.

The processing of personal data of students, employees and teaching staff is carried out on the basis of their documented consent. The university has an HR department, where each employee, upon employment, along with personal documents, provides a signed consent to the collection and processing of personal data in the form F KazNRTU 601-22. Consent to the processing of data.doc, as well as to the protection of their personal data in ways that do not contradict the legislation of the Republic of Kazakhstan.

Analytical part

Analysis of the self-assessment report on compliance with the requirements of the Information Management and Reporting standard for accredited EP, information provided by the university during the visit, the commission notes that the university has a multi-level information and reporting management system. The EEC believes that the internal regulatory documentation developed at the university as a whole (organization standards, regulations, rules, and methodological instructions) determines the structure and volume of the information collected, its reliability and timeliness, allows you to generate analytical reports and make decisions based on facts. The processes of information management and reporting are evaluated by analyzing methods and forms of information collection and analysis, decisions of collegial bodies and management, surveys of information resources of the university, systems and software, questionnaires of all interested parties. At the same time, analyzing the materials presented for review, meeting with target groups, the members of the EEC believe that in the context of the EP "8D06104 – Cybernetics and artificial intelligence", the leadership of the university and the EP need to conduct systematic work to widely inform the teaching staff on the calculation of key performance indicators, improve the system of information transfer from one structural unit to another, using the capabilities of modern IT technologies. 28.2% answered "very well", "good" - 59.2% and "bad" - more than 11% to the questionnaire question "Evaluate the involvement of teaching staff in the process of making managerial and strategic decisions".

Strengths/best practice
Not identified

EEC Recommendations for EP 8D06104 Cybernetics and Artificial Intelligence:
➢ Ensure transparency of information on the management of the system for collecting key performance indicators in the context of EP and accessibility (for example, on the university's website).

➢ To conduct an assessment of the effectiveness and efficiency of activities in the context of the EP "8D06104 – Cybernetics and artificial intelligence" by July 1, 2022.

Conclusions of the EEC according to the criteria:

According to the standard "Information Management and reporting" according to EP 8D06104 Cybernetics and artificial intelligence, 16 criteria are disclosed, of which: 11 have a satisfactory position, 5 suggest improvement.

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

- *EO should define and document the procedures for EP development and its approval at the institutional level.*
- *EP management should ensure that the developed EP meets the established objectives, including the expected learning outcomes.*
- *EP management should ensure the availability of developed models of EP graduate, describing the learning outcomes and personal qualities.*
- *EP management should demonstrate the performance of external examinations of EP content and the planned results of its implementation.*
- *The qualification awarded upon EP completion should be clearly defined and correspond to a certain NQS level.*
- *EP management should determine the influence of disciplines and professional practices on the formation of learning outcomes.*
- *An important factor is the ability to prepare students for professional certification.*
- *EP management should provide evidence of the participation of students, TS and other stakeholders in EP development, ensuring their quality.*
- *EP complexity should be clearly defined in Kazakhstani credits and ECTS.*
- *EP management should ensure that the content of academic disciplines and planned results are consistent with the level of education (bachelor's, master's, doctoral studies).*
- *EP structure should provide for various types of activities to ensure that students achieve the planned learning outcomes.*
- *An important factor is the correspondence between EP content and EP learning outcomes, implemented by institutions of higher and (or) postgraduate education in the EHEA.*

Evidence

Goals and objectives of accredited educational programs are determined on the basis of the strategic documents of the university: "The University Development Strategy 2026" (http://kazntu.kz/ru/aboutuniversity/strategicheskie_dokuvtyni), the University Development Program and Plan until 2025, quality assurance" (https://official.satbayev.university/ru/vnutrennie-normativnye-dokumenty/3-uroven-upravlenie-obrazovatelnym-protsessom). The development of working curricula (WC) is carried out on the basis of State Standards, the catalog of elective disciplines of the CED, developed by the graduating department and individual curricula of students (IC). Teaching staff develop working curricula (syllabuses), educational and methodological material is developed in accordance with the Rules for the development of educational programs at Satbayev University.

Unfortunately, during the accreditation of the EEC, it was not possible to confirm with concrete facts the statement of the EP management that "The development of the EP was carried out jointly with foreign partner universities...Hong Kong Polytechnic University, St. Petersburg State University, Novosibirsk State University and the University of Illinois at Chicago". A similar situation is with the involvement of students in the development of the content of the EP – the doctoral students present at the meeting with the EEC, Myan Veronika and Amir Ayala, could not demonstrate an understanding of the fact that they have the opportunity and

mechanisms to participate in the development and quality assurance of the EP. The EEC failed to find answers to the question regarding the selection of experts who carry out an external examination of the educational program to ensure the independence of the decisions made. The management of the EP 8D06104 Cybernetics and Artificial Intelligence did not provide specifics on how the content and structure of the EP is revised when the labor market changes and what is the mechanism for making changes to the EP?

The quality of the development of educational programs is assessed in accordance with DP KazNRTU 706. Assessment of knowledge and liquidation of debt, compiled on the basis of legislative regulations of the Government of the Republic of Kazakhstan, the Ministry of Education and Science of the Republic of Kazakhstan, internal regulations.

All disciplines of the curriculum are grouped into cycles of general education disciplines (GED), basic disciplines (BD) and major disciplines (MD). In the educational program of doctoral studies in the field of study 8D07109 Innovative technologies and new inorganic materials, the following distribution of credits between cycles is established: in total - 180 credits, of which BD - 25 and MD - 20, Research-123, preparation and defense of a doctoral dissertation -12.

The module of general professional training forms a block of disciplines studying machine learning and programming ("Machine learning methods", "Quantum programming for data analysis", "Artificial neural networks", "Adaptive traffic flow management", "Scientific Python", "Computer Architecture") and databases ("Methods of processing large data", "Mathematical statistics and stochastic processes"). Professional competencies are acquired by doctoral students in the process of research internships and pedagogical practices. They are implemented within the framework of professional modules on the main types of professional activity for the subsequent development by doctoral students of general and professional competencies in EP 8D06104 Cybernetics and artificial intelligence. Pedagogical practice of doctoral students is conducted at the department of EMM KazNRTU named after K.I. Satbayev under the mentorship of teaching staff.

The survey conducted during the visit of the EEC showed:

- 82.9% of students are "fully satisfied" with informing the requirements in order to successfully complete this educational program (specialty);

- 75.6% are "completely satisfied" with informing students about courses, educational programs and academic degrees they receive.

However, it is worth noting that only 2 doctoral students of EP 8D06104 Cybernetics and Artificial Intelligence took part in the survey.

Analytical part

Analyzing the standard "Development and approval of the educational program", members of the EEC note that EP 8D07109 Innovative technologies and new inorganic materials and EP 8D06104 Cybernetics and Artificial Intelligence are provided with WC, syllabuses, EMCD, which are generally drawn up in accordance with regulatory documents. A set of disciplines at CED contributes to the formation of students' professional competencies. However, syllabuses usually have only one source of literature, the content of which does not allow the doctoral student to fully master these topics.

EEC experts note that, based on the results of the analysis of the studied documents and interviews with students and teaching staff, the involvement of external experts in reviewing the EP has not been proven. The management of the EP also did not demonstrate the existence and functioning of mechanisms for reviewing the content and structure of the EP, taking into account changes in the labor market and the requirements of employers.

A survey of students conducted during the EEC visit showed that:

- the speed of response to feedback from teachers regarding the educational process is "fully satisfied" - 80.5%; partially satisfied - 14.6%; "not satisfied" -5%;

- "the teacher presents the material in an interesting way" – "completely agree" – 51.2%, "agree" – 31.7%, partially agree – 12.2%, "completely disagree" – 4.9%.

To the question to teachers "How does the content of the educational program meet your scientific and professional interests and needs?", the answer "very good" was given by 40.8%, "good" - 54.9%, "relatively bad" and "bad" - in the sum of 4.2% of respondents.

Strengths/best practice
Not identified

EEC Recommendations for EP 8D06104 Cybernetics and Artificial Intelligence:
➢ By August 1, 2022, to bring the content of the disciplines of the EP in line with the planned results of training in terms of mastering professional competencies in the field of development and use of artificial intelligence technologies.
➢ Systematically ensure the participation of students, teaching staff and employers in the development of the EP, ensuring its quality.

Conclusions of the EEC according to the criteria:
According to the standard "Development and approval of basic educational programs" according to EP 8D06104 Cybernetics and artificial intelligence, 12 criteria were disclosed, of which: 9 have a satisfactory position, 3 positions suggest improvement.

6.4. Standard "On-Going Monitoring and Periodic Review of Educational Programme"

- *EO should define mechanisms for monitoring and EP periodic evaluation in order to ensure the achievement of the goal and meet the needs of students and society. The results of these processes should be aimed at EP continuous improvement.*
- *Monitoring and EP periodic evaluation should provide for:*
- *the content of the programmes in the light of the latest scientific achievements in a specific discipline to ensure the relevance of the taught discipline.*
- *changes in the needs of society and the professional environment .*
- *workload, the level of academic achievement and students' graduation .*
- *the effectiveness of student assessment procedures.*
- *expectations, needs and satisfaction of students with EP training.*
- *educational environment and support services and their compliance with the objectives of EP.*
- *EO, EP management should define a mechanism for informing all concerned parties about any planned or taken actions in relation to EP.*
- *All changes made to EP should be published. EP management should develop a mechanism for revising EP content and structure, considering changes in the labor market, employers' requirements and social demands of society.*

Evidence
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 specialty of the EMS of the Institute and the University. Informing all interested parties about any actions in relation to the EP takes place using the portal https://satbayev.university/ru electronic means of communication. The University has defined and operates quality control processes in accordance with the main quality documents: Strategy and Development Program of KazNRTU named after K.I. Satbayev; Policy in the field of quality assurance of education; regulations on structural units and job descriptions of

employees; schedule of attendance of open classes; feedback on the results of mutual visits of open classes; journal of registration of mutual visits of teaching staff; journal of registration and accounting of practice bases and reports of students by types of practice. The mechanism of internal monitoring and evaluation of the quality of the EP is carried out by the teaching staff, the department, the Institute, students and Departments on Academic Issues and Corporate Development.

But the EMM department does not monitor the implementation of the development plan of EP 8D06104 Cybernetics and Artificial Intelligence and does not monitor its implementation when adjusting the Model of a graduate of EP, since there is no EP development plan itself. Many activities for monitoring and periodic evaluation of the EP are only declared. Even the report states that according to the standard "Continuous monitoring and periodic evaluation of educational programs" 5 criteria are disclosed.

There is no monitoring of the content of the program in the light of the latest scientific achievements in a particular discipline to ensure the relevance of the discipline taught. The syllabuses do not contain additional literature reflecting the new achievements of science and technology within the discipline. The topics (content) of some disciplines do not fully correspond to the title and the planned learning outcomes. For example, in the discipline "Machine Learning Theory" it concerns such topics as " Convex Optimization" and "Stochastic Gradient Descent".

As a result of the EEC activity, it was not possible to obtain specific data on the frequency, content and results of interviewing and questioning students at the EP "8D06104 - Cybernetics and Artificial Intelligence".

Changes made to the EP are not posted on the website.

Analytical part

EEC notes that the university in the context of the EP "8D06104 - Cybernetics and Artificial Intelligence" does not provide a revision of the content and structure of the educational program with employers. However, the Commission draws attention to use different methods to detect changes in the labor market. In particular, it is recommended to analyze the labor market in order to take into account the expected learning outcomes in the content of the EP, the possibility of risks in the implementation of the EP.

In addition, according to the analysis of the information provided on the website of the university and the department of EMM, a some positions such as learning outcomes, changes made to the EP, reviews and reviews of the EP by external stakeholders were not reflected on the site.In this regard, the EEC believes that it is necessary to ensure constant and timely informing of students, teaching staff, employers through various communication channels about all the changes made in the EP. Ensure accessibility to all materials related to the development of the EP.

According to the results of the survey:

The material proposed by the teacher is relevant and reflects the latest achievements of science and practice; "fully agree" - only 53.7% of students; the rest are "agree" and "partially agree".

The evaluation criteria used by the teacher are understandable – "strongly agree" 68.3%;

The teacher objectively assesses the achievements of the students - "completely agree" 63.4%.

Strengths/best practice
Not identified

EEC Recommendations for EP 8D06104 Cybernetics and Artificial Intelligence:
➢ By the beginning of the 2022-2023 academic year, to update the content of disciplines

and their syllabuses, taking into account the labor market and current trends in science and technology in the context of EP.

➢ To implement a mechanism for timely informing teachers, employers and other interested persons about organizational decisions taken in relation to the EP, including, based on the results of monitoring and revision of the content of the EP, using the official website of the university.

Conclusions of the EEC according to the criteria:
According to the standard "Continuous monitoring and periodic evaluation of educational programs" according to EP 8D06104 Cybernetics and Artificial Intelligence, 10 criteria were disclosed, of which: 6 have a satisfactory position, 4 positions suggest improvement.

6.5 Standard "Student-Centered Learning, Teaching and Performance Evaluation".

- *EP management should ensure respect and attention to different groups of students and their needs providing them with flexible learning trajectory.*
- *EP management should provide for the use of various forms and methods of teaching and learning.*
- *An important factor is the availability of own research in the field of teaching methods of EP academic disciplines.*
- *EP management should demonstrate the existence of feedback mechanisms on the use of various teaching methods and assessment of learning outcomes.*
- *EP management should demonstrate the existence of mechanisms to support the students' autonomy with simultaneous guidance and assistance from the teacher.*
- *EP management should demonstrate the existence of a procedure for responding to student complaints.*
- *EO should ensure consistency, transparency and objectivity of the mechanism for assessing learning outcomes for each EP, including appeal.*
- *EP should ensure that the procedures for assessing the learning outcomes of EP students are consistent with the planned results and programme objectives. Criteria and methods of assessment within EP framework should be published in advance.*
- *EO should determine the mechanisms for ensuring the achievement of learning outcomes by each EP graduate and ensure the completeness of their formation.*
- *Evaluators should be proficient in modern methods of assessing learning outcomes and regularly improve their qualifications in this area.*

Evidence
The formation of individual educational trajectories is carried out on the basis of Academic Policy and CED, which contains a list of all disciplines of the component of choice, indicating the purpose of the study, a summary and expected results of the study. Planning of the educational trajectory (registration for disciplines) is carried out in accordance with the academic calendar. Students of the EP have full information about the list of module disciplines and their codes, prerequisites, goals and content, are also informed about the form of control and the necessary learning tools, and the main learning outcomes.

When conducting interviews with doctoral students, the EEC established the fact that for EP 8D06104 Cybernetics and artificial Intelligence, students were offered only three disciplines as a choice of three disciplines, which does not allow them to ensure the flexibility of the learning trajectory.

A learning environment including Wi-Fi has been created and is available to students at the university. To ensure successful training of students, computer classes equipped with the

following modern software have been created on the basis of the EMM Department: MATLAB, APM WinMachine, TRNSYS, Comsole Multiphysics. The classrooms are equipped with interactive whiteboards with video projectors that allow lectures and practical classes with slides and videos.

When conducting classes on an accredited EP, teaching staff use interactive teaching methods using digital innovative technologies: the method of problem presentation, presentations, discussions, the method of critical thinking, business and role-playing games, group work, brainstorming, etc. However, the question remained unanswered as to at what level decisions are made regarding innovations in the educational process and monitoring the effectiveness of their implementation within a specific EP.

For doctoral programs, only those doctoral students who have an admission rating take the exam. When calculating the admission rating, the assessments of the current control and boundary control are necessarily taken into account. Independent work of doctoral students, also included in the current control, must be defended before the session and serve as admission to the exam in this discipline. The procedure for conducting ongoing monitoring of progress, midterm control, intermediate and final certification of doctoral students is regulated by chapters 6 and 9 of the Rules for Credit Technology of Education . General planning and coordination of educational programs is carried out in accordance with the DP KazNRTU 705 and 711.

KazNRTU named after K.I. Satbayev regularly conducts questionnaires 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. Complaints, such as appeals on interim and current (rating) control, are regulated by the Regulations on the Appeal Commission. During the work of the EEC, it was not possible to get an answer from the management of the EP to the question of how the complexity of the student's independent work is determined and how the procedure for monitoring it (and assessing satisfaction) is carried out.

University teaching staff are fully versed in modern methods for assessing learning outcomes and regularly take refresher courses and specialized training to improve teaching skills. For example, almost all teaching staff of the department of EMM passed the web courses "Improving skills in distance education", "Conducting an exam in the form of distance learning", training "Improving pedagogical skills", etc.

Analytical part

Analyzing the criteria of the standard "Student-centered learning, teaching and assessment of academic performance", it was found that teaching staff uses both traditional and innovative teaching methods when conducting training sessions. This was confirmed in the course of communication with doctoral students.

The University ensures the consistency, transparency and objectivity of the mechanism for evaluating learning outcomes for each EP, as well as the appeal. Unfortunately, as a result of the work of the EEC, including during communication with the teaching staff of the EMM department and doctoral students of the 1st year of study, it was not possible to find confirmation of the functioning of feedback on the use of various teaching methods.

The members of the EEC note that the self-assessment report did not reflect information about the use of the teaching staff of the EMM Department in the field of teaching academic disciplines accredited by EP 8D06104 Cybernetics and Artificial Intelligence in the educational process.

Doctoral students of EP 8D06104 Cybernetics and artificial intelligence in fact do not have a choice of elective disciplines (this was confirmed when interviewing doctoral students), which does not allow them to provide flexibility of the learning trajectory within the student-centered approach.

The teaching staff of the EP regularly improve their skills in the field of modern methods for assessing learning outcomes.

Strengths/best practice
Not identified

EEC Recommendations on EP 8D06104 Cybernetics and Artificial Intelligence:
➢ By August 1, 2022, the management of the EP should prepare syllabuses of new elective disciplines and other documentation to ensure that each doctoral student has a real choice of his own flexible learning trajectory..
➢ The management of the EP annually monitor the use of innovative learning technologies. By August 1, 2022, to prepare a plan for the development and implementation of the teaching staff's own research in the field of teaching methods of academic disciplines in the educational process. To ensure the dissemination of information about the results of their own research on the university's website.

Conclusions of the EEC according to the criteria:
According to the standard "Student-centered learning, teaching and assessment of academic performance" according to EP 8D06104 Cybernetics and Artificial Intelligence, 10 criteria were disclosed, of which: 8 have a satisfactory position, 2 positions suggest improvement.

6.6. Standard "Students"

- *EO should demonstrate the existence of a policy for the formation of the students' contingent in EP context from admission to graduation and ensure the transparency of its procedures. The procedures governing the students' life cycle (from admission to completion) should be defined, approved, published.*
- *EP management should determine the procedure for the formation of the students' contingent based on:*
- *minimum requirements for applicants.*
- *Maximum group size when conducting seminars, practical, laboratory and studio classes.*
- *Forecasting the number of government grants.*
- *analysis of available material and technical, information resources, human resources.*
- *analysis of potential social conditions for students, including providing places in the hostel.*
- *EP management is obliged to demonstrate readiness to conduct special adaptation and support programmes for newly entered and foreign students.*
- *EO should demonstrate that its actions are consistent with the Lisbon Recognition Convention.*
- *EO should cooperate with other educational institutions 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.*
- *EP management should demonstrate the existence of a mechanism for the recognition of the students' results of academic mobility, as well as the results of additional, formal and non-formal education.*
- *EO should provide an opportunity for external and internal mobility of EP students, as well as a willingness to assist them in obtaining external grants for training.*
- *EP management should demonstrate its readiness to provide students with places of practice, to promote the graduates' employment, to maintain communication with them.*

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

- *An important factor is the availability of mechanisms for monitoring the employment and professional activity of EP graduates.*

Evidence

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 comprehensive testing. 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. According to the documented procedure of DP Kazntu 702. The formation of a contingent of students sets requirements for the contingent of students at the University, the order of their admission, registration, movement in the process of training and graduation.

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. When accepting documents, all individual achievements of applicants and applicants, professional experience are taken into account. For the comfort of applicants, a guide to admission has been created - A Guide to admission. Registration online at the address - https://kb.satbayev.university/ . However, the program of the entrance exam for EP 8D06104 Cybernetics and artificial intelligence is not available on the website in the archive https://satbayev.university/ru/phd .

The training is carried out on state grants and on a contractual basis. 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. Every year, the University conducts special adaptation and support programs for newly enrolled students. The adaptation program is divided into several days.

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 (DP KazNITU 718 Academic Mobility). 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.Satbayev, according to which the director of the Registrar's office, director and Vice-rector for Academic Affairs regulates and approves the transfer. The Rules of Credit Technology also set out the procedure and rules for transferring students from other universities to Satbayev University. Within the framework of EP 8D06104 Cybernetics and Artificial Intelligence, there are no cases of doctoral students participating in academic mobility programs.

The principles of creating an educational environment for students to achieve the required professional level, methods of feedback and informing students, aspects of cultural and social life of students are presented.

The organization of educational work is carried out in accordance with the regulatory materials of the Ministry of Education and Science of the Republic of Kazakhstan. In order to

ensure the growth of the quality of educational services provided, a survey is systematically conducted on the subject of students' satisfaction with the quality and conditions of study.

To date, Satbayev University has 163 agreements, contracts and memorandums of cooperation with foreign universities, international organizations, firms, centers, academies of sciences from 20 countries of the world. During the reporting period, 49 cooperation agreements were concluded.

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. However, in the context of EP 8D06104 Cybernetics and Artificial Intelligence, it was not possible to clarify the situation regarding how the analysis of material, technical, information resources and human resources at the EMM department is carried out. There was also an open question regarding the assessment of doctoral students' satisfaction with the places and organization of practice.

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 the 2019-2020 academic year, the number of students in the EP "8D06104 - Cybernetics and Artificial Intelligence" was 3 students, in 2020-2021 - 0 students, in 2021-2022 - 2 students, table 1.

Table 1 – Contingent of students of the educational program
EP 8D06104 Cybernetics and Artificial Intelligence

Academic year of admission	Quantity
2019-2020	3
2020-2021	0
2021-2022	2

The results of the survey of doctoral students conducted during the visit of the EEC IAAR showed that only 2 students from the educational program 8D06104 Cybernetics and Artificial Intelligence took part in the general survey, and, unfortunately, both – 1 year of study.

Analytical part
The policy of forming a contingent at the university is regulated and reflected in the Academic Policy of the OE. The principles of creating an educational environment for students to achieve the required professional level, methods of feedback and informing students, aspects of cultural and social life of students are presented. The University evaluates communication with employers; cultural and social events, sports and recreation activities, etc. are held.

Within the framework of EP 8D06104 Cybernetics and Artificial Intelligence, there are no cases of doctoral students participating in academic mobility programs.

Interviewing doctoral students revealed that they find it difficult to answer about their employment prospects after completing their studies.

EEK IAAR, on the basis of interviewing and questioning students, familiarization with the educational infrastructure of the university and various documents, notes the following:

Strengths/best practice
Not identified

EEC Recommendations on EP 8D06104 Cybernetics and Artificial Intelligence::

➢ By January 1, 2023, to expand the material and technical conditions of students' education by expanding the list of laboratory equipment, software that is associated with the operation of artificial intelligence systems;

➢ Until July 1, 2022, to analyze the personnel potential necessary for the formation and training of a contingent of students at the EP "8D06104 – Cybernetics and artificial Intelligence".

Conclusions of the EEC according to the criteria:

According to the standard "Students" according to EP 8D06104 Cybernetics and artificial intelligence, 12 criteria have been disclosed, 11 of them are satisfactory and 1 implies an improvement in positions.

6.7. Standard "Teaching Staff"

- *EO should have an objective and transparent personnel policy, including in EP context, including recruitment, professional growth and development of personnel, ensuring the professional competence of the entire staff.*
- *EO should demonstrate the compliance of the TS staff potential with EO development strategy and EP specifics.*
- *EP management should demonstrate awareness of responsibility for their employees and providing them with favorable working conditions.*
- *EP management should demonstrate the change in the role of the teacher in connection with the transition to student-centered learning.*
- *EO should determine the contribution of TS of the EP to the implementation of EO development strategy, and other strategic documents.*
- *EO should provide opportunities for career growth and professional development of TS of the EP.*
- *EP management is obliged to demonstrate readiness to involve practitioners of the relevant industries in teaching.*
- *EO should demonstrate motivation for the professional and personal development of EP teachers, including encouragement for the integration of scientific activity and education, the use of innovative teaching methods.*
- *An important factor is the readiness to develop academic mobility within EP framework, to attract the best foreign and national teachers.*

Evidence

The Commission got acquainted with the qualitative and quantitative composition of the teaching staff, the principles of teaching staff management: planning the teaching staff workload, monitoring the quality of teaching, monitoring the implementation of the individual teaching staff plan, methods for assessing the satisfaction of teaching staff and students, the policy of forming the staff of teaching staff.

In accordance with the main provisions of the Academic Policy of the University (section 3), teachers, as well as doctoral students, are participants and moderators in the formation of the university academic policy.

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

Personnel policy of the University is posted on the official website of SU. Decisions of the management on the admission, transfer, promotion of the staff are made on the basis of the Rules for the competitive replacement of vacant positions of the teaching staff of NJSC "K.I. Satbayev KazNRTU" and the Rules for the certification of the teaching staff of K.I. Satbayev KazNRTU.

The desire of employees to improve their skills is supported and stimulated morally and financially. The training is planned and conducted with the aim of preparing the staff for solving the problems facing the University and improving the professional level of the staff. The University has a Collective Agreement for the next 2 years.

The staff of the University is completed in accordance with the legislation of the Republic of Kazakhstan and (Rules for attestation and competitive filling of teaching staff positions of NJSC K.I. Satpayev KazNRTU). Competitive selection of candidates for filling vacant positions is carried out in accordance with the qualification characteristics of positions of scientific and pedagogical workers, as well placement of advertisements in national newspapers and University official page.

On University official page 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. However, on the website of the EMM department (https://official.satbayev.university/ru/industrial-engineering/kafedra-inzhenernaya-mekhanika-i-modelirovanie) the information is not up-to-date: for example, there is no information about many teaching staff present in the staff of the department, including including Dairbekov Nurlan Slyamkhanovich, Penkin Oleg Mikhailovich, Verbovsky Viktor Valerievich, etc. There is also no information about Prof. Serovaisky Semyon Yakovlevich, who is the supervisor of the third year doctoral student Azimov Anvar Akbarovich. Unfortunately, the EEC failed to obtain comprehensive information on the staffing of the EP "8D06104 - Cybernetics and Artificial Intelligence", since the Department of EMM also trains in other EPs of the bachelor's and master's levels, moreover, "lying aside" from 8D06 information and communication technologies, including "Mechanical Engineering", which is included in the group of educational programs "B064 - Mechanics and Metalworking" from the direction of training "071 - Engineering". At the request of the EEC, no information was provided on the fulfillment of qualification requirements and competitive selection criteria, including the availability of the relevant basic education of the teaching staff of the department of EMM, the general experience and experience of scientific and pedagogical work, etc. There is no way to assess the dynamics of degrees, age composition, teaching language, etc.

All selective disciplines are read by Senkebaeva Akbota Aidosovna, an associate professor, information about which is also not available on the website of the department https://official.satbayev.university/ru/industrial-engineering/kafedra-inzhenernaya-mekhanika-i-modelirovanie. On the other hand, it should be noted that the head of the EP "8D06104 - Cybernetics and Artificial Intelligence" and at the same time the supervisor of four doctoral students prof. Dairbekov Nurlan Slyamkhanovich does not teach any discipline (even selective) at the indicated EP.

In 2021, as part of creating favorable conditions in the educational buildings and campuses of the university, repair work was carried out. Changes in the assembly hall and conference hall of OC, each office, the corridor was updated with new colors and equipment, a cafe, a co-working zone, a stand-up stage were created.

Teaching staff, including advisors of groups, in accordance with the Regulations on the advisor and the Instructions for the Project "Improving the Competitiveness of Satbayev University Students for 2020-2021 " provide assistance to students, undergraduates and doctoral students in organizational work, promote their involvement in scientific, intellectual, creative work, and the development of various forms of self-government.

All strategic KPIs are cascaded first to the level of structural units, and then to the level of employees, so everyone participates in the implementation of the Strategy. Strategic management provides for an annual assessment of personnel, when the degree of KPI fulfillment is determined, wages are increased and decisions are made on promotion and career growth. Analysis of the performance and evaluation of the activities of teachers is carried out at the end of the academic year, as evidenced by the minutes of the meetings of the department, the

conclusion of the head of the department in individual plans, and at the end of the academic year about the achievements of teachers, there is a rating system for evaluating the activities of the teaching staff.

The teaching staff of the department of ME&M is regularly engaged in the development of their professional and pedagogical competencies (participation in seminars, trainings, advanced training), which are confirmed by certificates and a positive assessment when questioning students. The department of ME&M holds weekly scientific seminars "Modeling of traffic flows", "Analysis on stratified sets".

Satbayev University, together with the University of Zhilina (Slovakia), as well as a number of other partner universities, is part of a large-scale project funded by the European Union under the Erasmus + CBHE program "Advanced center for PhD students and young researchers in Informatics".

In order to improve the quality of the publication activity of the university staff, to increase the university's fame in the world scientific community, the university developed the "Regulations on the remuneration of employees and students at NJSC K.I. Satbayev KazNRTU for publications in rating (peer-reviewed) scientific journals". KazNRTU implements the mechanisms of moral and material incentives: declaration of gratitude, awarding diplomas, payment of bonuses, presentation for the title of "Honorary Worker of Education of the Republic of Kazakhstan", recommendation for participation in the competition "The Best University Teacher".

For the 2020-2021 academic year, 21 visiting professors from the UK, USA, Russia, Belgium, Germany, India, Czech Republic, Germany, Poland, India, Kyrgyzstan, etc. gave lectures to students of K.I. Satbayev KazNRTU. The whole process of implementing the academic mobility of teaching staff, as well as university staff, is carried out in accordance with the internal Documented Regulation "Academic Mobility" of the DP KazNRTU 718 . The self-evaluating report states that "A number of foreign professors were invited by ME&M to give lectures and conduct scientific consultations for ... PhD-doctoral students ..." (p. 79), however, the EEC was unable to find out the specifics from the management of the EP (name of the invitees, lecture topic, etc.).

According to the results of the survey of the teaching staff, organized by the EEC of IAAR, teachers assess the support of the university and its leadership in the research initiatives of the teaching staff as "very good" - 39.4%; "good" - 50.7%; "relatively bad" - 7%;

- The teaching staff satisfies the content of the educational program as "very good" - 40.8%, "good" - 54.9%; "very bad" – 2.8%;

- the level of feedback from the teaching staff with the management satisfies "very good" - 40.8%, "good" - 50.7%;

- Teachers can use their own innovations in the learning process as "very good" - 53.5%, "good" - 40.8%;

- How is the work on academic mobility set to "very good" - 25.4%, "good" - 57.7%; "Relatively bad" - 14.1%;

- How is the work on improving the qualifications of teaching staff on "very good" - 25.4%, "good" - 52.1%; "Relatively bad" - 19.7%;

- Involvement of teaching staff in the process of making managerial and strategic decisions as "very good" - 28.2%, "good" - 59.2%, "Relatively bad" - 11.3%.

Analytical part

In general, the teaching staff in terms of settling down largely does not meet the qualification requirements. The university's website does not provide enough information about teachers (basic education, research areas, disciplines taught, etc.), there is no external mobility of teaching staff. On the website of the Emim Department (https://official.satbayev.university/ru/industrial-engineering/kafedra-inzhenernaya-mekhanika-i-

[modelirovanie](#)) the information about the teaching staff is irrelevant.

In conducting classes at an accredited EP, there are not enough, or not at all, teachers who are supervisors of doctoral students, which means they must meet the qualification requirements in the context of the EP as much as possible. All elective disciplines are read by Senkebaeva Akbota Aidosovna, an associate professor, information about which is also not available on the website of the department.

There is not a sufficient level of publication activity of teachers in the context of the disciplines taught. Many publications concern mechanics, not the EP "8D06104 – Cybernetics and Artificial Intelligence". The implementation of the results of scientific research of teaching staff in the educational process has not been established.

The teaching staff of the department is not fully satisfied with the objectivity and transparency of the personnel policy at the university. For example, even the head of the EP prof. Dairbekov N.S. "I'm not sure about the future", because the contract is ending soon, and there is no understanding of the solution of the personnel issue.

Scientific seminars held at the Department of EMM, namely "Modeling of traffic flows" and "Analysis on stratified sets" are also not directly related to the EP "8D06104 - Cybernetics and Artificial Intelligence".

EEC failed to determine the contribution of the teaching staff of the EP "8D06104 - Cybernetics and Artificial Intelligence" to the implementation of the development strategy of the university and other strategic documents.

EEC of IAAR, having held meetings, conversations and interviews with vice-rectors, deans, heads of departments, heads and employees of structural units, students, faculty, as well as conducting a survey of students and faculty, detailed acquaintance of experts with the educational infrastructure of the university, material and technical and information and methodological resources, as well as the necessary documents, notes the following:

Strengths/best practice
No strengths and best practices have been identified for this Standard.

EEC recommendations on EP "8D06104 – Cybernetics and artificial intelligence":
➢ To post detailed information about each employee on the department's website by July 1, 2022. Specify the basic education, the specialty of the defense, the scope of their scientific activity and cite the publications of each faculty for the last 5 years.

➢ Until September 1, 2022, to attract PS who meet the qualification requirements of EP 8D06104 Cybernetics and Artificial Intelligence to work at the Department of EMM.

➢ To organize on a permanent basis internships of teaching staff in the areas of EP in leading research centers and universities of the Republic of Kazakhstan and abroad.

➢ To ensure transparency of personnel policy at the EMM department, including hiring and professional growth of teaching staff.

➢ By July 1, 2022, to analyze the publication activity of all teaching staff and develop measures to improve it in the context of EP.

Conclusions of the EEC according to the criteria:
According to the standard "Teaching staff" according to EP 8D06104 Cybernetics and artificial intelligence, 9 criteria were disclosed, of which 6 have satisfactory and 3 suggest improving positions.

6.8. Standard "Educational resources and student support systems"

- *EO should ensure a sufficient number of training resources and student support services that meet EP objectives.*

- *EO should demonstrate the sufficiency of material and technical resources and infrastructure, considering the needs of students' various groups in EP context of (adults, working, foreign students, as well as students with disabilities).*
- *EP management is obliged to demonstrate the existence of procedures for supporting various groups of students, including informing and consulting. EP management should demonstrate the compliance of information resources with EP specifics, including:*
- *technological support for students and TS in accordance with educational programmes (for example, online training, modeling, databases, data analysis programmes).*
- *library resources, including the fund of educational, methodological and scientific literature on compulsory education, basic and major disciplines on paper and electronic media, periodicals, access to scientific databases.*
- *examination of research results, graduation works, dissertations for plagiarism.*
- *access to educational Internet resources.*
- *functioning of WI-FI on the territory of the educational organisation.*
- *EO should strive to ensure that the educational equipment and software intended for use in the development of educational programmes are similar to those used in the relevant industries.*

Evidence

The policy of KazNRTU is aimed at academic support for students to achieve their personal and professional competencies, and get an academic degree. The University has good material, technical, informational and library resources used to organize the process of teaching and educating students and realizing the mission, goals and objectives of KazNRTU. Students have the opportunity and access to use the socio-cultural and sports facilities of the university. The Committee for Youth Affairs is the highest body of student and youth self-government of the university in the field of implementing the state youth policy. The student trade union committee "Zhas kanat" organizes such events as "The best hostel", team building for students from socially vulnerable segments of the population, sports competitions among students, etc.

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 total volume of the electronic catalog is 174773 units, including: 109916 units of educational and scientific literature (1,263,553 copies); 2571 e-books; 57,550 articles and 4,736 units of other types of literature. The electronic catalog contains bibliographic records of new acquisitions of books and periodicals, articles and monographs of teaching staff, dissertations, abstracts and electronic resources and is constantly updated online. Through a single search window of the EBSCO Discovery Service system, access to all subscription electronic resources is provided. In order to increase the availability of resources, the ELS "IPRboks" was integrated into the portal "Politech Online". The distance learning format is also supported through the use of ELS mobile applications by students.

The total fund of the library is 1717115 copies, including 364368 copies in the state language. At the service of readers 508 150 copies. textbooks on general education disciplines, including in the state language - 158,552 copies. The fund contains 1,190,114 copies. textbooks on basic and specialized disciplines, in the Kazakh language - 372,432 copies. The library has 687461 copies. scientific literature, in the Kazakh language - 46064 copies.

Together with the Department of Information Technology of the University, it was possible to arrange 10 specially equipped booths (GUK, 1st floor) for high-quality broadcasting of on-line classes. 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 that support the

stable operation of the university's business processes, a powerful computer park, having over 4 thousand workstations and modern technical training aids. The university has 105 computer labs, 136 multimedia and 6 language laboratories, 10 mobile multimedia kits. The university has 37 computer labs with 491 computers.

To conduct exams and assess knowledge, teachers have the opportunity to use the Emtihunter service developed by employees of <u>the Department of Information Technology</u> https://emtihunter.satbayev.university .

Students with disabilities (hearing and visually disabled students) receive 75% scholarship allowances, as well as students on a fee basis are provided by tuition discounts of 10-20%, in accordance with the <u>Regulations on the provision of discounts for educational services and financial incentives for students of NJSC KazNRTU</u> . One of the important forms of providing social support is the provision of places in dormitories for all students of this category and the provision of benefits for living in dormitories. Students and undergraduates from among orphans live free of charge in hostels.

The university has an effective information and feedback system, which includes: the university website https://official.satbayev.university/ru, the applicant's website, the electronic library https://satbayev.university/ru/library, the student forum, the verification website documents for plagiarism http://sandyk.kazntu.kz/index.php, etc.

The University practices such types of RET as network and case technology. All RET students have their own virtual "personal accounts", at any time they have access to lectures and other teaching aids of the teacher, they can complete and send his assignments, receive work, individual curricula, etc.

The university, including the Institute of Energy and Mechanical Engineering, which includes the Department of EMM, has classrooms equipped with multimedia equipment that are used in lectures.

However, the EEC failed to establish sufficient availability of material and technical resources in the context of the accredited EP "8D06104 - Cybernetics and Artificial Intelligence", as well as a mechanism for planning the logistics of the EP and monitoring the implementation of the plan. The management of the EP during the interview did not give an answer to the question of how the need for the purchase of educational equipment and software will be determined at the EP.

Analytical part

As a result of a visual inspection by the members of the EEC of the objects of the material base, it should be noted that the university has a sufficient number of educational and material assets to ensure the educational process of accredited educational institutions. The EEC believes that work should continue to improve technical capabilities for people with disabilities.

The Commission found no confirmation of the planning to provide EP 8D06104 Cybernetics and artificial intelligence with equipment and software "Similar to those used in the relevant sectors of the economy".

As a result of the analysis of the activities of the accredited EP according to this standard, it can be concluded that an assessment of the completeness and availability of the material, technical and information resources of these EP has been carried out. There is a dynamic of resources and learning environment, library support of the educational process.

When carrying out educational activities, the university is guided by regulatory documents regulating mandatory regulatory requirements for the material, technical, educational and laboratory facilities of educational organizations. There is a fairly good level of information support for educational and scientific-educational activities with access to full-text electronic resources of educational and scientific significance, which satisfies the needs of students and teaching staff.

Strengths/best practice
No strengths and best practices have been identified for this Standard.

EEC recommendations on EP "8D06104 – Cybernetics and artificial intelligence":
By August 1, 2022, the management of the university and the EP will develop a long-term plan to equip specialized laboratories with modern equipment and software that is actually used at enterprises of the relevant industries according to the profile of the accredited EP *8D06104 Cybernetics and Artificial Intelligence.*

The conclusions of the EC by criteria: (strong/ satisfactory/ suggest improvements/ unsatisfactory)
According to the standard "Educational resources and student support systems" according to EP 8D06104 Cybernetics and artificial Intelligence, 9 criteria were disclosed, of which 8 are satisfactory and 1 implies an improvement in positions.

6.9. Standard "Public Information"

- *EO should publish reliable, objective, relevant information about the educational programme and its specifics, which should include:*
- *expected learning outcomes of EP implemented.*
- *qualifications and (or) qualifications that will be awarded upon EP completion.*
- *approaches of teaching, learning, as well as the system (procedures, methods and forms) of assessment.*
- *information about passing scores and learning opportunities provided to students.*
- *information about the possibilities of employment of graduates.*
- *EP management should provide for various ways of disseminating information, including mass media, information networks to inform the general public and concerned parties.*
- *Public awareness should include support and explanation of the country's national development programmes and the system of higher and postgraduate education.*
- *EO should demonstrate the reflection on the web resource of information characterizing it in general and in EP context.*
- *An important factor is the availability of adequate and objective information about EP TS.*
- *An important factor is informing the public about cooperation and interaction with partners within EP framework.*

Evidence
The University is consistently implementing a public information strategy. Information on the university activities is presented on the pages "About the University" and "Basic Provisions". The university operates a public information system on the Internet, consisting of publications on the university website and social networks (Facebook, Vkontakte, Youtube), there is a university pr-program aimed at working with traditional and electronic media. On the site on the page "Online education" provides detailed information about the capabilities of the online education system of the university and provides additional links to the Polytech-online platform. The PolytechOnline platform contains not only a database of 1,524 video courses and 18,810 video files, but also has an interactive interface and full-cycle functionality for students, teachers, administrators, as well as integration with all external University systems. The "News" section contains up-to-date information about the activities of the university, including in the context of educational programs and student education.

Unfortunately, despite the contrary statements in the self-evaluation report, the pages of the EMM department contain far incomplete and often irrelevant necessary information on the educational program, information on teaching staff and employers. So, there is no information

about many teaching staff present in the staff of the department, including Dairbekov Nurlan Slyamkhanovich, Penkin Oleg Mikhailovich, Verbovsky Viktor Valerievich, etc. There is also no information about Professor Serovaisky Semyon Yakovlevich, who is the supervisor of the third-year doctoral student Asimov Anvar Akbarovich. There is also no program of the entrance exam to the doctoral program for the EP "8D06104 – Cybernetics and artificial intelligence", information about passing balls. The university's website offers a "choice" of a supervisor from one candidate https://satbayev.university/ru/scientific-adviser?speciality_id=154. In addition, the topic "Equations on graphs and other complex sets" is indicated as "Potential scientific research", which is too distantly related to the EP "8D06104 – Cybernetics and Artificial Intelligence". In addition, the general public and interested persons, such as employers and the academic community, are deprived of the opportunity to promptly inform (using a variety of ways to disseminate information) about the development plan of the EP, changes in the curriculum, the content of disciplines (syllabuses and RP), etc. within the framework of the EP "8D06104 – Cybernetics and artificial Intelligence".

Analytical part

The EEC notes that in the field of information dissemination policy, KazNRTU named after K.I. Satbayev demonstrates a policy of transparency, openness, involvement in informing the public of applicants, employers, participants in the educational process and all interested persons, constant development and adaptability to the changing realities of society.

Assessment of satisfaction with information about the activities of the university, the specifics and progress of the implementation of the EP is carried out annually by means of a questionnaire and a survey of interested persons.

Information about the Department of Mechanical Engineering and Modeling, about the main directions of its activities are available at the link https://official.satbayev.university/ru/industrial-engineering/kafedra-inzhenernaya-mekhanika-i-modelirovanie, however, the EEC notes that information on teaching staff is presented in fragments. There is no data on the courses taught by the teaching staff, the specialty of an academic degree, scientific interests, etc. There is no information about many teaching staff present in the staff of the department and participating in the implementation of the accredited EP.

Strengths/best practice
Not identified

EEC Recommendations for EP 8D06104 Cybernetics and Artificial Intelligence:

➢ By July 1, 2022, the management of the EP should bring the information about the teaching staff of the EMM department on the website in line with the general requirements, adding information about basic education, work experience, courses taught, scientific interests and publications corresponding to the competencies of the disciplines taught.

➢ By August 1, 2022, to ensure that the public is informed about the progress of the implementation of the EP on the university's website.

Conclusions of the EEC by criteria:

According to the standard "Informing the public" according to EP 8D06104 Cybernetics and artificial intelligence, 10 criteria were disclosed, of which 6 have satisfactory and 4 suggest improving positions.

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

According to the standard "Management of the educational programme"
- Within the framework of this Standard, no strengths have been identified.

According to the Information Management and Reporting Standard
- Within the framework of this Standard, no strengths have been identified.

According to the Standard "Development and approval of the educational programme"
- Within the framework of this Standard, no strengths have been identified.

According to the standard "On-Going Monitoring and Periodic Review of Educational Programme"
- Within the framework of this Standard, no strengths have been identified.

According to the standard "Student-Centered Learning, Teaching and Performance Evaluation":
- Within the framework of this Standard, no strengths have been identified.

According to the Standard "Students":
- Within the framework of this Standard, no strengths have been identified..

According to the Standard Teaching Staff:
- Within the framework of this Standard, no strengths have been identified.

According to the Standard "Educational resources and student support systems":
- Within the framework of this Standard, no strengths have been identified.

According to the Standard "Public Information":
- Within the framework of this Standard, no strengths have been identified.

(VIII) OVERVIEW RECOMMENDATIONS FOR QUALITY IMPROVEMENT FOR EACH STANDARD

Standard "Management of the educational programme"
The management of the University to develop by July 1, 2022 uniform requirements for the development of plans for the development of educational programs of the university, taking into account:
- compliance of the EP development plan with the Strategic Development Plan of the university and the needs of the labor market;
- specific indicative indicators, indicating the timing of implementation, for the main types of EP activities;
- involvement of employers, students and teaching staff in drawing up a development plan for the EP;
- determining the individuality and uniqueness of the EP development plan within the real positioning of the university;

- a mechanism for monitoring the implementation of the development plan of the EP institution and evaluating the achievement of learning goals and regular revision of the development plan of the educational institution in connection with possible changes in regulatory legal acts in the higher EP system with the involvement of teachers of graduating departments, employers and students. The results of monitoring should be communicated to all interested parties.

☐ The management of the EP should develop a development plan for the EP "8D06104 – Cybernetics and Artificial Intelligence" by August 1, 2022.

☐ The management of the EP should specify by August 1, 2022 measures to reduce the impact of risks in the design and implementation of the EP, specifying those responsible and the timing of implementation. Systematically analyze risk management at the level of structural units and educational programs.

☐ To develop, by August 1, 2022, an analysis methodology and identify mechanisms to ensure the implementation of innovative proposals within the framework of the EP "8D06104 – Cybernetics and Artificial Intelligence".

Standard "Information management and reporting"

➢ Ensure transparency of information on the management of the system for collecting key performance indicators in the context of EP and accessibility (for example, on the university's website).

➢ To conduct an assessment of the effectiveness and efficiency of activities in the context of the EP "8D06104 – Cybernetics and artificial intelligence" by July 1, 2022.

Standard "Development and approval of the educational programme"

➢ By August 1, 2022, to bring the content of the disciplines of the EP in line with the planned results of training in terms of mastering professional competencies in the field of development and use of artificial intelligence technologies.

➢ Systematically ensure the participation of students, teaching staff and employers in the development of the EP, ensuring its quality.

Standard "On-Going Monitoring and Periodic Review of Educational Programme"

➢ By the beginning of the 2022-2023 academic year, to update the content of disciplines and their syllabuses, taking into account the labor market and current trends in science and technology in the context of EP.

➢ To implement a mechanism for timely informing teachers, employers and other interested persons about organizational decisions taken in relation to the EP, including, based on the results of monitoring and revision of the content of the EP, using the official website of the university.

Standard "Student-Centered Learning, Teaching and Performance Evaluation".

➢ By August 1, 2022, the management of the EP should prepare syllabuses of new elective disciplines and other documentation to ensure that each doctoral student has a real choice of his own flexible learning trajectory..

➢ The management of the EP annually monitor the use of innovative learning technologies. By August 1, 2022, to prepare a plan for the development and implementation of the teaching staff's own research in the field of teaching methods of academic disciplines in the educational process. To ensure the dissemination of information about the results of their own research on the university's website.

Standard "Students"

➢ By January 1, 2023, to expand the material and technical conditions of students' education by expanding the list of laboratory equipment, software that is associated with the operation of artificial intelligence systems;

➢ Until July 1, 2022, to analyze the personnel potential necessary for the formation and training of a contingent of students at the EP "8D06104 – Cybernetics and artificial Intelligence".

Standard Teaching Staff

➢ To post detailed information about each employee on the department's website by July 1, 2022. Specify the basic education, the specialty of the defense, the scope of their scientific activity and cite the publications of each faculty for the last 5 years.

➢ Until September 1, 2022, to attract PS who meet the qualification requirements of EP 8D06104 Cybernetics and Artificial Intelligence to work at the Department of EMM.

➢ To organize on a permanent basis internships of teaching staff in the areas of EP in leading research centers and universities of the Republic of Kazakhstan and abroad.

➢ To ensure transparency of personnel policy at the EMM department, including hiring and professional growth of teaching staff.

➢ By July 1, 2022, to analyze the publication activity of all teaching staff and develop measures to improve it in the context of EP.

Standard "Educational resources and student support systems"

By August 1, 2022, the management of the university and the EP will develop a long-term plan to equip specialized laboratories with modern equipment and software that is actually used at enterprises of the relevant industries according to the profile of the accredited EP *8D06104 Cybernetics and Artificial Intelligence*.

Standard "Public Information"

➢ By July 1, 2022, the management of the EP should bring the information about the teaching staff of the EMM department on the website in line with the general requirements, adding information about basic education, work experience, courses taught, scientific interests and publications corresponding to the competencies of the disciplines taught.

➢ By August 1, 2022, to ensure that the public is informed about the progress of the implementation of the EP on the university's website.

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

Not available

(X) RECOMMENDATION TO THE ACCREDITATION COUNCIL

The external Expert Commission made a unanimous decision to recommend to the Accreditation Council to accredit the educational program 8D06104 Cybernetics and Artificial Intelligence of the Non-profit Joint Stock Company "Kazakh National Research Technical University named after K.I.Satbayev" for a period of 1 (one) year.

Appendix 1. Evaluation table "PARAMETERS OF A SPECIALIZED PROFILE" (EX-ANTE)

**Conclusion of the external expert commission on the evaluation of the educational program 8D06104 Cybernetics and Artificial Intelligence
of the Non-profit Joint Stock Company "Kazakh National Research Technical University named after K.I.Satbayev" for a period of 1 (one) year.**

item No.	NNo.	Evaluation criteria	Position of the educational organization			
			Strong	Satisfactory	To be improved	Unsatisfactory
Standard " Management of Educational Programme"						
1	1.	The organisation of higher and (or) postgraduate education should have a published quality assurance policy. The quality assurance policy should reflect the link between research, teaching and learning		+		
2	2.	The organisation of higher and (or) postgraduate education should demonstrate the culture's development of quality assurance, including in EP context		+		
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.	EP management demonstrates readiness to ensure transparency of EP development plan based on the analysis of its functioning, EO actual positioning and the focus of its activities on meeting the needs of the state, employers, students and other concerned parties. The plan should contain the timing of the start of the implementation of the educational programme			+	
5	5.	EP management demonstrates the existence of mechanisms for the formation and regular revision of EP development plan and monitoring its implementation, assessing the achievement of learning goals, meeting the students'			+	
6	6.	needs, employers and society, making decisions aimed at continuous improvement of EP			+	
7	7.	EP management should involve representatives of stakeholder groups, including employers, students and TS in the formation of EP development plan			+	
8	8.	EP management should demonstrate the individuality and uniqueness of EP development plan, its consistency with national priorities and the development strategy of the organisation of higher and (or) postgraduate education		+		
9	9.	The organisation of higher and (or) postgraduate education should demonstrate a clear definition of those responsible for business processes within EP framework, an unambiguous distribution of job duties of personnel, delineation of collegial bodies functions		+		
10	10.	EP management should provide evidence of the transparency of the educational programme management system		+		
11	11.	EP management should demonstrate the existence of EP internal quality assurance system, including its design, management and monitoring, their			+	

		improvement, decision-making based on facts				
12	12.	EP management should carry out risk management, including within EP framework, undergoing initial accreditation, as well as demonstrate a system of measures aimed at reducing the risk degree			+	
13	13.	EP management should ensure the participation of representatives of employers, TS, students and other concerned parties in the collegial management bodies of the educational programme, as well as their representativeness in making decisions on the educational programme management		+		
14	14.	EO should demonstrate innovation management within EP framework, including the analysis and implementation of innovative proposals		+		
15	15.	EP management should demonstrate evidence of readiness for openness and accessibility for students, TS, employers and other concerned parties		+		
		Total on standard	0	9	6	0
Standard "Information Management and Reporting"						
16	1.	EO 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 and that it uses a variety of methods to collect and analyze information in EP context		+		
17	2.	EP management should demonstrate the existence of a mechanism for the systematic use of processed, adequate information to improve the internal quality assurance system.			+	
18	3.	EP management should demonstrate decision-making based on facts		+		
19	4.	Within EP framework, a system of regular reporting should be provided reflecting all levels of the structure, including an assessment of the performance and efficiency of the unit activities and departments, scientific research			+	
20	5.	EO should establish the frequency, forms and methods of assessing EP management, activities of collegial bodies and structural units, top management, the implementation of scientific projects		+		
21	6.	EO should demonstrate the determination of the order and ensuring the protection of information, including the identification of persons responsible for the accuracy and timeliness of the analysis of information and the data provision.		+		
22	7.	An important factor is the availability of mechanisms for involving students, employees and TS in the processes of collecting and analysing information, as well as making decisions based on them			+	
23	8.	EP management should demonstrate the existence of a communication mechanism with students, employees and other concerned parties, as well as mechanisms for resolving conflicts		+		
24	9.	EO should demonstrate the existence of mechanisms for measuring the degree of satisfaction of the TS needs, personnel and students within EP framework		+		
25	10.	EO should provide for the assessment of the performance and efficiency of activities, including in EP context			+	
		The information intended for collection and analysis within EP framework should take into account:				
26	11.	key effectiveness indicators			+	
27	12.	the dynamics of the students contingent in the context of forms and types;		+		
28	13.	academic results, student achievement and expulsion		+		
29	14.	satisfaction of students with the realization of EP and the quality of education at HEI		+		
30	15.	availability of educational resources and support systems for students		+		
31	16.	EO should confirm the realization of procedures for processing personal data of students, employees and TS on the basis of their documentary consent		+		

		Total on standard	0	11	5	0
Standard "Development and Approval of the Education Programme"						
32	1.	EO should define and document the procedures for EP development and its approval at the institutional level		+		
33	2.	EP management should ensure that the developed EP meets the established objectives, including the expected learning outcomes		+		
34	3.	EP management should ensure the availability of developed models of EP graduate, describing the learning outcomes and personal qualities			+	
35	4.	EP management should demonstrate the performance of external examinations of EP content and the planned results of its implementation		+		
36	5.	The qualification awarded upon EP completion should be clearly defined and correspond to a certain NQS level			+	
37	6.	EP management should determine the influence of disciplines and professional practices on the formation of learning outcomes		+		
38	7.	An important factor is the ability to prepare students for professional certification		+		
30	8.	EP management should provide evidence of the participation of students, TS and other stakeholders in EP development, ensuring their quality		+		
40	9.	EP complexity should be clearly defined in Kazakhstani credits and ECTS			+	
41	10.	EP management should ensure that the content of academic disciplines and planned results are consistent with the level of education (bachelor's, master's, doctoral studies).		+		
42	11.	EP structure should provide for various types of activities to ensure that students achieve the planned learning outcomes.		+		
43	12.	An important factor is the correspondence between EP content and EP learning outcomes, implemented by institutions of higher and (or) postgraduate education in the EHEA		+		
		Total on standard	0	9	3	0
Standard "On-Going Monitoring and Periodic Review of Educational Programme"						
44	1.	EO should define mechanisms for monitoring and EP periodic evaluation in order to ensure the achievement of the goal and meet the needs of students and society. The results of these processes should be aimed at EP continuous improvement		+		
		Monitoring and EP periodic evaluation should provide for:				
45	2.	the content of the programmes in the light of the latest scientific achievements in a specific discipline to ensure the relevance of the taught discipline			+	
46	3.	changes in the needs of society and the professional environment		+		
47	4.	workload, the level of academic achievement and students' graduation		+		
48	5.	the effectiveness of student assessment procedures		+		
49	6.	expectations, needs and satisfaction of students with EP training		+		
50	7.	educational environment and support services and their compliance with the objectives of EP		+		
51	8.	EO, EP management should define a mechanism for informing all concerned parties about any planned or taken actions in relation to EP			+	
52	9.	All changes made to EP should be published. EP management should develop a mechanism for revising EP content and structure, considering changes in the labor market, employers' requirements and social demands of society			+	
53	10.	EO should define mechanisms for monitoring and EP periodic evaluation in order to ensure the achievement of the goal and meet the needs of students and society. The results of these processes should be aimed at EP continuous improvement			+	

		Total on standard	0	6	4	0
Standard "Student-Centered Learning, Teaching and Performance Evaluation"						
54	1.	EP management should ensure respect and attention to different groups of students and their needs providing them with flexible learning trajectory			+	
55	2.	EP management 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 EP academic disciplines		+		
57	4.	EP management should demonstrate the existence of feedback mechanisms on the use of various teaching methods and assessment of learning outcomes		+		
58	5.	EP management should demonstrate the existence of mechanisms to support the students' autonomy with simultaneous guidance and assistance from the teacher.		+		
59	6.	EP management should demonstrate the existence of a procedure for responding to student complaints		**+**		
60	7.	EO should ensure consistency, transparency and objectivity of the mechanism for assessing learning outcomes for each EP, including appeal		+		
61	8.	EP should ensure that the procedures for assessing the learning outcomes of EP students are consistent with the planned results and programme objectives. Criteria and methods of assessment within EP framework should be published in advance		+		
62	9.	EO should determine the mechanisms for ensuring the achievement of learning outcomes by each EP graduate and ensure the completeness of their formation		+		
63	10.	Evaluators should be proficient in modern methods of assessing learning outcomes and regularly improve their qualifications in this area		+		
		Total on standard	0	8	2	0
Standard "Students"						
64	1.	EO should demonstrate the existence of a policy for the formation of the students' contingent in EP context from admission to graduation and ensure the transparency of its procedures. The procedures governing the students' life cycle (from admission to completion) should be defined, approved, published			+	
		EP management should determine the procedure for the formation of the students' contingent based on:				
65	2.	minimum requirements for applicants		+		
66	3.	maximum group size when conducting seminars, practical, laboratory and studio classes		+		
67	4.	forecasting the number of government grants		+		
68	5.	analysis of available material and technical, information resources, human resources		+		
69	6.	analysis of potential social conditions for students, including providing places in the hostel		+		
70	7.	EP management is obliged to demonstrate readiness to conduct special adaptation and support programmes for newly entered and foreign students		+		
71	8.	EO should demonstrate that its actions are consistent with the Lisbon Recognition Convention		+		
72	9.	EO should cooperate with other educational institutions 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.	EP management should demonstrate the existence of a mechanism for the recognition of the students' results of academic mobility, as well as the results of additional, formal and non-formal education		+		
74	11.	EO should provide an opportunity for external and internal mobility of EP students, as well as a willingness to assist them in obtaining external grants for training.		+		
75	12.	EP management should demonstrate its readiness to provide students with places of practice, to promote the graduates' employment, to maintain communication with them		+		
		Total on standards	0	11	1	0
Standard "Teaching Staff"						
76	1.	EO should have an objective and transparent personnel policy, including in EP context, including recruitment, professional growth and development of personnel, ensuring the professional competence of the entire staff			+	
77	2.	EO should demonstrate the compliance of the TS staff potential with EO development strategy and EP specifics			+	
78	3.	EP management should demonstrate awareness of responsibility for their employees and providing them with favorable working conditions		+		
79	4.	EP management should demonstrate the change in the role of the teacher in connection with the transition to student-centered learning		+		
80	5.	EO should determine the contribution of TS of the EP to the implementation of EO development strategy, and other strategic documents			+	
81	6.	EO should provide opportunities for career growth and professional development of TS of the EP		+		
82	7.	EP management is obliged to demonstrate readiness to involve practitioners of the relevant industries in teaching.		+		
83	8.	EO should demonstrate motivation for the professional and personal development of EP teachers, including encouragement for the integration of scientific activity and education, the use of innovative teaching methods		+		
84	9.	An important factor is the readiness to develop academic mobility within EP framework, to attract the best foreign and national teachers		+		
		Total on standard	0	6	3	0
Standard "Education Resources and Student Support Systems"						
85	1.	EO should ensure a sufficient number of training resources and student support services that meet EP objectives.		+		
86	2.	EO should demonstrate the sufficiency of material and technical resources and infrastructure, considering the needs of students' various groups in EP context of (adults, working, foreign students, as well as students with disabilities).		+		
87	3.	EP management is obliged to demonstrate the existence of procedures for supporting various groups of students, including informing and consulting. EP management should demonstrate the compliance of information resources with EP specifics, including:		+		
		technological support for students and TS in accordance with educational programmes (for example, online training, modeling, databases, data analysis programmes)				
88	4.	library resources, including the fund of educational, methodological and scientific literature on compulsory education, basic and major disciplines on paper and electronic media, periodicals, access to scientific databases		+		
89	5.	examination of research results, graduation works, dissertations for plagiarism		+		
90	6.	access to educational Internet resources		+		
91	7.	functioning of WI-FI on the territory of the educational organisation		+		
92	8.	EO should strive to ensure that the educational equipment and software intended for use in the development of educational programmes are similar		+		

№	№	Criterion				
		to those used in the relevant industries				
93	9.	EO should ensure a sufficient number of training resources and student support services that meet EP objectives.			+	
		Total on standard	0	8	1	0
Standard "Public Information"						
		EO should publish reliable, objective, relevant information about the educational programme and its specifics, which should include:				
94	1.	expected learning outcomes of EP implemented		+		
95	2.	qualifications and (or) qualifications that will be awarded upon EP completion		+		
96	3.	approaches of teaching, learning, as well as the system (procedures, methods and forms) of assessment		+		
97	4.	information about passing scores and learning opportunities provided to students			+	
98	5.	information about the possibilities of employment of graduates		+		
99	6.	EP management should provide for various ways of disseminating information, including mass media, information networks to inform the general public and concerned parties			+	
100	7.	Public awareness should include support and explanation of the country's national development programmes and the system of higher and postgraduate education		+		
101	8.	EO should demonstrate the reflection on the web resource of information characterizing it in general and in EP context.			+	
102	9.	An important factor is the availability of adequate and objective information about EP TS			+	
103	10.	An important factor is informing the public about cooperation and interaction with partners within EP framework		+		
		Total on standard	0	6	4	0
		TOTAL	**0**	**74**	**29**	**0**

0 % of the parameters have the *«strong" position»*
65 % of the parameters have the *«satisfactory" position»*
25% parameters have the position *« suggests improvement»*
0 % parameters have the position *« suggests improvement»*