



«АККРЕДИТТЕУ ЖӘНЕ РЕЙТИНГТІҢ
ТӘУЕЛСІЗ АГЕНТТІГІ» КЕМ

НУ «НЕЗАВИСИМОЕ АГЕНТСТВО
АККРЕДИТАЦИИ И РЕЙТИНГА»

INDEPENDENT AGENCY FOR
ACCREDITATION AND RATING

REPORT

on the results of the work of the external expert commission
for evaluation

on the compliance with the standards for primary specialized
accreditation of educational programs

7M07110 Automation and control

7M07112 Electroenergetics

Karaganda Industrial University

in the period from 13 to 15 April 2022.

INDEPENDENT AGENCY FOR ACCREDITATION AND RATING
External Panel of Experts

***Addressed
To accreditation
to council of IAAR***



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Temirtau, 2022 year

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(I) LIST OF SYMBOLS AND ABBREVIATIONS

AC - attestation commission
 JSC - joint stock company
 JSC AMT - Joint Stock Company ArcelorMittal Temirtau
 AIS - automated information system
 AM - automation and management
 BD - basic disciplines
 GRS - grading and rating system
 WHO - World Health Organization
 HEI - higher educational institution
 EEC - External Expert Commission
 SER - Secondary Energy Resources
 SOSE RK - State Obligatory Standard of Education of the Republic of Kazakhstan
 DAP - Department of Academic Policy
 DSIIC - department of science, innovation, and international cooperation
 DTD - digital transformation department
 AI - artificial intelligence
 IPMW - individual plan of the master's work
 IS - information systems
 CED - catalog of elective disciplines
 MES RK - Ministry of Education and Science of the Republic of Kazakhstan
 MEP - modular educational program
 SRW - scientific-research work
 NED - National Educational Database
 RLA - regulatory legal act
 NQF - National Qualifications Framework
 STC - Scientific and Technical Council
 EO - educational organization
 EP - educational program
 OR - Office of the Registrar
 MD - major disciplines
 TS - teaching staff
 RK - Republic of Kazakhstan
 RIDL - Republican Interuniversity Digital Library
 WC - working curriculum
 QMS - quality management system
 IWMS - independent work of Master students
 IWMST - independent work of Master student with the teacher
 SO - standard of the organization
 EMC - educational and methodical complex
 EMCD - educational and methodical complex of the discipline
 EMC - Educational and Methodical Council
 UC - University Council
 FETCS - Faculty of Energy, Transport and Control Systems
 SSC - student service center
 DER - digital educational resources
 PE - power engineering
 ECTS - European Credit Transfer System
 GPA - Grade Point Average

(II) INTRODUCTION

In accordance with the order № 26-22-OD from 03.02.2022. Independent Agency for Accreditation and Rating from April 13 to April 15, 2022, the external expert commission assessed the compliance of educational programs EP 7M07110 "Automation and Management" and 7M07112 "Electroenergetics" of Karaganda Industrial University (Temirtau) with the IAAR primary specialized accreditation standards (№68-18/1-OD from May 25, 2018, edition one).

The report of the External Expert Commission (EEC) contains the evaluation of submitted educational programs by the criteria of the IAAR standards, EEC recommendations for further improvement of educational programs and parameters of the profile of educational programs.

Composition of the EEC for cluster 2:

1. **Chairman of the IAAR Commission** - Kosov Vladimir Nikolaevich, d.f-m.s, Professor, Abai Kazakh National Pedagogical University (Almaty);
2. **Foreign expert of IAAR** - Victor Besliu, PhD prof., expert of ANACIP Technical University of Moldova (Kishinev, Moldova);
3. **IAAR expert** - Evgeny Borisovich Medvedkov, d.t.s., Almaty Technological University (Almaty);
4. **IAAR trainee** - Bazarbek Amre master student of "Automation and Control" at the Eurasian National University (Nur-Sultan);
5. **Coordinator from the Agency** - Gulfiya Rivkatovna Nazyrova, PhD in Economics, Project Manager on formation of external expert commissions of IAAR.

(III) EDUCATIONAL ORGANIZATION

Karaganda Industrial University Nonprofit Joint Stock Company (hereinafter NLC KarIU) is the leading higher education institution of Kazakhstan for training highly qualified personnel with higher and postgraduate education in metallurgy, machine building, chemical, construction and other associated metallurgy areas, which are a priority for the mining and metallurgical industry of the Republic of Kazakhstan.

NLC "KarIU" is reorganized in accordance with the Decree of the Government of the Republic of Kazakhstan from October 11, 2019 № 752 "On some issues of higher educational institutions of the Ministry of Education and Science of the RK" from the Republican state enterprise on the right of economic management "Karaganda State Industrial University" (previously Plant - VTUZ at Karaganda Metallurgical Plant, created on the basis of a branch of the Karaganda Polytechnic Institute in 1963).

Karaganda Industrial University carries out its activities on the basis of state license for the right to conduct educational activities KZ86LAA00019217. The date of issue of the license and the appendix to the license is October 30, 2020.

The University provides training in 28 specialties, including: 18 specialties of Bachelor's degree, 8 specialties of Master's degree and 2 specialties of Doctoral degree.

The University consists of 3 faculties and the Technical and Economic College, 12 departments and 4 scientific subdivisions. The teaching staff of the University consists of about 300 people, including 12 PhDs, about 70 Ph.

The total number of students is about 2,400.

The graduating department for OP 7M07110 "Automation and Control" is the department "Technologies of Artificial Intelligence", for OP 7M07112 "Electroenergetics" - the department "Power Engineering".

At the present time the departments "Artificial Intelligence Technologies" and "Power Engineering" are structural subdivisions of the faculty "Power Engineering, Transport and Control Systems".

The contingent of students of the accredited EP as of January 01, 2022 is:

EP 7M07102-Automation and Control - 6 students.

7M07112 - "Electroenergetics" - 3 students.

Information about the Department of "Artificial Intelligence Technology"

The department was opened in 2020 on the basis of two sections "Computer Science and Software" and "Automation and Control" of the department "Power Engineering, Automation and Computer Science". The Head of the Department was appointed Kunayev Vyacheslav Alexandrovich (PhD).

At the department is preparing bachelors of educational programs: B057- Information Technology (6B06101-Program Engineering), B063-Electrical Engineering and Automation (6B07106-Automation Systems Engineering), B057-Information Technology (6B06102-Artificial Intelligence Technology).

Training in Master Program 7M070200 Automation and Management began in 2020.

Qualitative and quantitative composition of the faculty of the department:

The composition of the department in the 2021-2022 academic year work 20 teaching staff, the percentage of tenure 35.0%, including: Doctors of Sciences - 2, Ph.D. - 1, PhD - 4. The average age of teaching staff in the department - 41.5 years.

The average age of the Department is 41.5 years.

Information about the chair "Energy".

Department of Energy in its current form exists since 2020 and was formed on the basis of two sections of "Electroenergetics" and "Heat Power Engineering".

The department trains bachelors on educational programs of Bachelor's degree: 6B07105 - Electricity supply of industrial facilities 6B07104 - Heat power of industrial enterprises and housing and communal facilities, 6B07111 - Heat power of industrial enterprises and housing

and communal facilities.

Also in 2020 was made the first set of magistracy on the educational program 7M07112 - Electroenergetics.

The head of the department is Lelikova Olga Nikolaevna (Master of Technical Sciences, Senior Lecturer).

Qualitative and quantitative composition of the department teachers:

The Department in 2021-2022 academic year work 11 teaching staff, the percentage of tenure 27.3%, including: Doctors of Sciences - 1, Ph. The average age of teaching staff in the department - 44.9 years.

Graduation for this OP has not yet been carried out.



(IV) DESCRIPTION OF THE PREVIOUS ACCREDITATION PROCEDURE

EP 7M07110 Automation and Control and EP 7M07112 Electroenergetics are accredited for the first time.



(V) DESCRIPTION OF THE WEC VISIT

The work of the EEC was carried out on the basis of the approved Program of the visit of the Expert Commission on the primary specialized accreditation of educational programs in Karaganda Industrial University in the period from 13 to 15 April 2022.

In order to coordinate the work of the EEC on April 11, 2022 there was held a kick-off meeting, during which the powers were distributed among the members of the Commission, the schedule of the visit was clarified, agreement was reached on the choice of methods of examination.

To obtain objective information about the quality of educational programs and the entire infrastructure of the university, to clarify the content of self-evaluation reports were held meetings with the Rector, the Vice Rector of the university on the activities, heads of departments, deans, heads of departments, teachers, students, and online meeting with employers. In total, 45 representatives participated in the meetings (Table 1).

Table 1 - Information about the employees and students who participated in the meetings with the EEC of the IAAR:

Category of participants	Quantity
Chairman of the Board - Rector	1
Vice-Rectors	2
Heads of departments	13
Deans	1
Heads of Departments, Heads of Academic Departments	2
Teachers	9
Learners	9
Employers	8
Total	45

During the tour, the members of the EEC got acquainted with the state of the material and technical base, visited the museum of the university, the laboratories of the departments: 3D engineering, heat and mass transfer units, technical means of automation, elements and means of automation, specialized classrooms: automated electric drive and Electroenergetics - 2, as well as the computer center "SOTSBI" and computer lab.

At the meetings of the EEC of the IAAR with the target groups of KARIU clarification of the mechanisms of implementation of the university policy and concretization of certain data presented in the report on the self-evaluation of the university were carried out.

For the period of accreditation classes were attended:

1. 13.04.2022, time 14:10 - 16:00, masters of AiU-21nm and EE-21nm groups, practical training "Fuzzy logic in the problems of control", doctor of technical sciences, professor of the department "Artificial Intelligence Technologies" Umirbetov Umirbek Umbetovich;
2. 14.04.2022, visiting time 14:10 - 16:00, master students of the group AIU-21nm, laboratory work "Engineering of automation systems", senior lecturer of the department "Artificial Intelligence Technologies" Spichak Ekaterina Vladimirovna;
3. 14.04.2022, visiting time 16:10 - 18:00, masters of groups AiU-21nm and EE-21nm, "Research and Academic Writing", PhD, senior lecturer of the department "Artificial Intelligence Technology" Kunaev Vyacheslav Alexandrovich.

During the work the EEC members visited the departments of JSC "ArselorMittal Temirtau" practice base: "Metallurgy and flaw detection" laboratory, Rolling Shop Electric Equipment Laboratory of CETL, Automatics and Automated Electric Drives Service of TGCA, Automatics Department of Plate Mill.

In accordance with the accreditation procedure, online questionnaire survey of 17 teachers and 13 trainees was conducted.

In order to confirm the information presented in the self-assessment report, the external experts requested and analyzed the working documentation of the university. At the same time, the experts studied the Internet positioning of the university through the official website of the university <https://ttu.edu.kz/>.

As part of the planned program the recommendations to improve the accredited educational programs of KARIU, developed by the EEC as a result of the examination, were presented at the meeting with the management on 15.04.2022.



(VI) COMPLIANCE WITH SPECIALIZED ACCREDITATION STANDARDS

6.1. Standard "Educational Program Management"

- ✓The organization of higher and (or) postgraduate education must have a published policy on quality assurance, which reflects the relationship between research, teaching and learning
- ✓Higher and (or) postgraduate education organization must demonstrate the development of a culture of quality assurance, including across EPs
- ✓Commitment to quality assurance should apply to any activities performed by contractors and partners (outsourcing), including in the implementation of joint/dual education and academic mobility
- ✓EP leadership demonstrates transparency in the elaboration of EP development plan, containing deadlines for the beginning of implementation, based on the analysis of its functioning, the real positioning of EP and the orientation of its activities to meet the needs of the state, employers, students and other stakeholders
- ✓Management of EP demonstrates the existence of mechanisms for the formation and regular revision of the plan of EP development and monitoring of its implementation, assessment of the achievement of learning objectives, compliance with the needs of students, employers and society, making decisions aimed at the continuous improvement of EP
- ✓Management of EP should involve representatives of stakeholder groups, including employers, students and teaching staff to form the EP development plan
- ✓EP leaders must demonstrate the individuality and uniqueness of the development plan of EP, its coordination with national priorities and development strategy of the organization of higher and (or) postgraduate education
- ✓Higher and (or) postgraduate education organization must demonstrate a clear determination of those responsible for business processes within SP, unambiguous distribution of RP staff duties, delimitation of functions of collegial bodies
- ✓EP management should provide evidence of the transparency of the management system of the educational program
- ✓EP management must demonstrate the existence of an internal quality assurance system for EP, including its design, management and monitoring, their improvement, decision-making based on facts
- ✓The EP management should manage the risks, including within the EP undergoing initial accreditation, and demonstrate a system of measures to reduce the degree of risk.
- ✓EP management should ensure the participation of representatives of employers, faculty, students and other stakeholders in the collegial management bodies of the educational program, as well as their representativeness in decision-making on the management of the educational program
- ✓the EP must demonstrate the management of innovation within the EP, including the analysis and implementation of innovative proposals
- ✓The EP management should demonstrate evidence of readiness for openness and accessibility for students, teaching staff, employers and other stakeholders

Evidence

The mission of the university is placed on the official website of the university (<https://ttu.edu.kz/abuniv/qms/mission/>) and information stands of the university and structural divisions.

On the basis of the mission the policy in the field of quality assurance of KariU was developed, which is also posted on the website of the university in the form of the following regulatory documents: "Quality Policy" (<https://ttu.edu.kz/abuniv/qms/politics/>), "Quality Objectives" (<https://ttu.edu.kz/abuniv/qms/aims/>).

The policy requirements determine the formation of the structure of the university, strategic and operational planning, implementation of internal personnel policy, development of local regulatory documents of regulatory nature, education, science, economic and managerial activities, relations with partners, including academic mobility.

The means to ensure a culture of quality is the Quality Management System, which in October 2021 was certified for compliance with the requirements of ST RK ISO 9001-2016 (ISO 9001:2015) "Quality Management Systems. Requirements" in relation to educational activities for training in the field of higher and postgraduate professional education. (<https://drive.google.com/file/d/1Hk-3bJfSEdjjBVWTO3WsjL9Ctzm0st/view>).

The interviewing of university management, structural units, deans and heads of departments showed the interest in ensuring the quality of management, teaching and research activities, increasing its culture through the use of a system of mechanisms of motivation, accounting and control. Quality assurance is determined by internal standards, monitoring is carried out through internal and external audits. Internal audit is regulated by the relevant QMS procedure and is conducted once a year.

The procedure of development and approval of EP development plan is regulated by the organization standard "Development of objectives and plans in the field of quality", which establishes a procedure for the development of quality objectives and planning to improve the quality management system (<https://ttu.edu.kz/abuniv/qms/>). The EP development plans are developed on the basis of "Strategic Plan of NLC "Karaganda Industrial University" for 2021-2025" <https://drive.google.com/file/d/1iKjHjZ9i-MEpXjq58X7Nx44LEMn2LOdv/view> .

The Department of TII has a plan for the development of the educational program (<https://drive.google.com/file/d/12EuNWA25HavKzX0O60Q7ach-MqhOtGyv/view>), and the Department of "Energy" has a strategic plan for the development of the department for 2022-2024 https://drive.google.com/file/d/1cNkIxNOcjGamTfWjf2btppz7hhF_Z_n/view?usp=sharing .

The development plans of the EP correspond to the mission of NLC "Karaganda Industrial University", the goals and objectives of the Development Strategy of the University for 2021-2025.

Educational programs in general, and their development plan are available for review on the website, it is familiar with the representatives of the faculty, students, and employers, as evidenced by the results of interviews with them during the work of the EEC.

The presented minutes of the meetings of departments, faculty and university councils confirm the transparency of the development of EP with a broad discussion at the department, faculty and university levels.

The Academic Council, Educational and Methodological Council, Faculty Council of FET&SU, which oversee monitoring the EP development plan implementation, consideration of the issues of material, technical, informational and personnel support of the EP development plan, are used to manage the EP at the university. The mechanism of planning, monitoring and adjustment of development plans of EP is based on the formation of annual operational plans of FET&SU and plans of II&E departments, plans of EP development, which specify the planned measurable indicators, their implementation and adjustment are reflected in the reports, which are approved by the interested structural units of the university in accordance with the adopted procedure.

Also, the Department of Academic Affairs, the Council of Employers, whose activities and composition are regulated by internal regulatory documents, are involved in the management of EP. Collegial bodies include university teachers, students' representatives, employers, which, as the minutes of the department meetings show, are directly involved in the development and management of EP.

In the submitted documents (expert conclusions, protocols of "TII" and "Energy" departments' meetings and FET&SU Council, approved and coordinated development plans of SP 7M07110 Automation and Management and 7M07112 Electroenergetics) there are materials that each SP passes external expertise by employers, internal assessment - when discussing SP at the department meetings, at the FET&SU Council meetings, KarIU Council. Presented documents show that the development plan and the EP itself are signed by the representatives of teaching staff, students and employers. For example, V.E. Shipilov, Head of Technological Automatics and Automated Electric Drive Service of Central State Centralized Control Center of JSC "ArselorMittal Temirtau", Nadezhda Sergeevna Kolonchina, master student of AiU-20np and others.

The uniqueness and individuality of OP development plan, as well as the educational programs themselves are provided by the involvement of business community in their design in

the expert councils, the use of elective disciplines, unique laboratory equipment and the presence of practice facilities at the unique enterprises of JSC "ArcelorMittal Temirtau", LLC "Kazakhmys Corporation", JSC "TEMC".

The main business processes to implement the OP are regulated by the following regulatory documents: "Document Management. Basic provisions", "Management of the process of educational activity", "Management of educational process", "Management of processes of scientific activity", etc. (<https://ttu.edu.kz/abuniv/qms/>). Allocation of responsibility for business processes within the framework of EP management is clearly described in job descriptions, regulations on the department and the Regulation "Rules of competitive recruitment of teaching staff and scientific workers of Karaganda Industrial University (https://drive.google.com/file/d/1TsByknMJo7U7Id9evkMITizf9K_8CsCv/view).

Coordination of development and management of EPs is regulated by the document "Regulations on the development of modular EPs (QMS P 4-25-1-2021)". The head of the department creates a working group of teaching staff, students and employers. Decisions are taken at the meetings of the department.

The operational plan of FET&SU reflects the possible risks, the occurrence of which is monitored through operational control, control of the implementation of operational plans and making decisions on their adjustment, making changes in the plans for the following years.

Openness and accessibility of the EP management for teaching staff, students and other stakeholders is provided by the placement of information on the university website, the possibility of addressing to the blog of the rector, through e-mail messages to the rector, vice-rectors, dean, heads of departments. The Faculty website has a link for access to the virtual dean's office and virtual department.

A survey of undergraduates during the VEC visit showed that the vast majority of students are fully or partially satisfied with the accessibility of leadership and services:

- Relationship with the Dean's Office (school, department, chair) - 100%;
- The level of accessibility of the Dean's Office (school, faculty, department) - 100%;
- The level of accessibility and responsiveness of the management (school, school, faculty, department) - 100% (7.7% - partially);
- Availability of academic advising - 100% (7.7% - partially);
- Availability of counseling on personal problems - 92.3% (7.7% - could not answer).

When interviewed, it was found that the heads of EP represented by the heads of the departments of II Kunaev V.A. and EE Lelikova O.N. were trained in educational management program. Copies of certificates of the management, EP, deans and heads of departments were also presented.

Analytical part

Based on the analysis of the quality assurance policy published on the website of the university, we can conclude that this document reflects the relationship between research, teaching and learning, and is available to all comers.

The study of the presented regulatory documents allows us to note the presence of a fairly high culture of quality assurance in the university, supported by a system of internal standards and monitoring mechanism. The available normative documentation of the quality assurance system covers all areas of the university activities. At the end of the second year of study the EP management plans to analyze the results and make the necessary adjustments to the development plan of EP 7M07110 Automation and Management and 7M07112 Electroenergetics.

The results of the survey of students and employers, their questionnaires, the study of development plans of EP, reports, minutes of the meeting of the departments "TII" and "Energy" confirms the transparency of EP development, indicates the successful functioning of the mechanism of design, approval, monitoring and making adjustments to the EP development

plans, their compliance with the expectations of students and employers, state programs of Kazakhstan and MES RK in the field of education.

The existing mechanism for the development plan of EP allows stakeholders from among the faculty, students and employers to participate in its creation, ensuring its individuality through the use of elective courses, updating the material and technical base, laboratory equipment.

Despite the above, it should be noted that during the interview the management of EP 7M07110 Automation and Management and 7M07112 Electroenergetics had difficulties in formulating the uniqueness and advantages of accredited EPs, compared to similar EPs in the region and the republic, so it is recommended to clearly define these advantages and place on the university website until the end of 2021-2022 academic year to attract potential trainees.

Responsible for business processes within EP and distribution of staff responsibilities are defined by the provisions on structural units, job descriptions. The results of interviews and questionnaires of deans, heads of departments, teaching staff showed a good understanding of their responsibilities and the ability to perform them. However, there is a lack of orientation in the division of responsibilities within the OP and those responsible for business processes at the university level, so it is recommended to the university management to fix in the regulatory documents the division of responsibilities within the OP and those responsible for business processes until July 2022.

Feedback from employers, satisfaction of students and graduates, determined on the basis of surveys and questionnaires, allow us to conclude about the successful functioning of quality assurance in the management of EP.

The ability to manage risks is clearly demonstrated by the management of the university and EP during the transition to DOT in a pandemic environment. The results of attendance of classes, satisfaction of students according to the questionnaire data are the confirmation of this. At the same time, innovative ICTs and DOT, including e-courses on MOODLE platform, online lectures and laboratory classes, are widely used in the organization of training on EP.

However, as the results of interviews with the organizers of EP showed insufficiently informative system of control and accounting of the implementation of innovation in the educational process, so the university administration is recommended to develop and approve in the regulatory documents the innovation management mechanism (planning, monitoring, accounting, control and stimulating the development and use) in the framework of EP until the beginning of 2022/23 academic year.

Indicative indicator "enrollment of students" OP increased in 2021 compared to 2020 for 2 years since the opening of programs.

Based on the study of the submitted documents and the results of interviews it should be noted the activities of the EP management to ensure the participation of representatives of stakeholders in the collegial management bodies of the educational program, as well as their representativeness in decision-making on the management of the educational program. They include university teachers, students' representatives, employers, who, as the minutes of the department meetings show, are directly involved in the development and management of EP.

When studying the documents of the Faculty Council, compositions of working groups of EP developers, protocols of department meetings, the presence in them of representatives of teaching staff, students and employers, who are directly involved in the approval of necessary during the management of EP development plans, QEDs, RUPs, etc. is noted. Transparency is ensured by placing these documents on the website of the university, faculty and departments.

Openness and accessibility for RP stakeholders is achieved by using the university website, their participation in the work of collegial bodies. About 100% of survey participants are

satisfied with the level of accessibility of management according to the survey. Аналитическая часть

According to the submitted documents, it was found that the heads of EPs were trained in educational management.

Strengths/best practices in OP 7M07110 Automation and Control and 7M07112 Electroenergetics:

At the university as a whole and at the level of EP management the activities that ensure the fulfillment of the requirements of the standard are set at an appropriate level. However, it is not possible to highlight any particular strengths.

Recommendations for 7M07110 Automation and Control and 7M07112 Electroenergetics:

1. *To justify the uniqueness and advantages of accredited EPs compared to similar EPs in the region and the republic and to place on the website of the university by the end of the academic year 2021/22.*
2. *To the university management to fix in the normative documents the delimitation of duties within EP and those responsible for business processes by July 2022.*
3. *University management to develop and approve in the regulatory documents the mechanism for innovation management (planning, monitoring, accounting, controlling and stimulating the development and use) within the OP by the beginning of academic year 2022/23.*

Conclusions of the EEC on the criteria:

According to the standard "Management of the educational program" educational programs 7M07110 Automation and Management and 7M07112 Electroenergetics have 12 satisfactory positions and 3 suggest improvement.

6.2. Information Management and Reporting Standard

✓The PA must demonstrate that it has a system for collecting, analyzing, and managing information through the use of current information and communications technology and software tools, and that it uses a variety of methods to collect and analyze information in the context of the PA

✓OO leadership must demonstrate that a mechanism is in place to systematically use processed, relevant information to improve the internal quality assurance system

✓OO leadership must demonstrate evidence-based decision making

✓EP should provide a system of regular reporting, reflecting all levels of the structure, including evaluation of the effectiveness and efficiency of units and departments, research

✓EP should establish the frequency, forms and methods of evaluation of EP management, activities of collegial bodies and structural divisions, senior management, implementation of research projects

✓PA should demonstrate the definition of procedures and ensuring the protection of information, including the identification of those responsible for the reliability and timeliness of the analysis of information and data delivery

✓An important factor is the presence of mechanisms to involve students, employees and teaching staff in the process of collecting and analyzing information, as well as decision-making based on it

✓EP management must demonstrate the existence of a mechanism for communication with students, employees and other stakeholders, as well as mechanisms for conflict resolution

✓the PA should demonstrate the existence of mechanisms to measure the degree of satisfaction of the needs of teaching staff, personnel and students within the framework of EP

✓Custody must provide for an evaluation of the effectiveness and efficiency of activities, including in relation to EP

✓The information supposed to be collected and analyzed within the bounds of EP, should take into account

- - key performance indicators
- - the dynamics of the contingent of students in terms of forms and types
- - level of academic performance, achievements of undergraduates and graduation

- - student satisfaction with realization of EP and quality of education at HEI
- ✓ - Availability of educational resources and support systems for students

Evidence

The information management processes in KARIU are regulated by the following documents: QMS StO II.7-04.02-2021 Internal Information, QMS StO II.7-05.01-2021 Document Management. General provisions, QMS StO II.10-01.01-2022 Data analysis, QMS improvement (<https://tttu.edu.kz/abuniv/qms/>).

The official site of KARIU was put into operation in 2008 (<https://tttu.edu.kz/>). The site is the main open source of information about the university. The information posted on the site, as shown by its study, is regularly updated and has versions in three languages: Kazakh, Russian and English. Navigation on the site is quite clear and up-to-date.

The university also has accounts on social networks Instagram (https://instagram.com/kariu_kz?utm_medium=copy_link), Facebook (<<https://m.facebook.com/profile.php?id=100022651051239>>), Odnoklassniki (<<https://ok.ru/profile/579438130734/statuses/151079088888622>>) and the TikTok service (https://www.tiktok.com/@kariu_kz).

From the interviews with the management of the OP found that the responsibility for the content, accuracy, relevance, literary style, timeliness of posting and correctness of information is the responsibility of the heads of the structural units. Correction of the information submitted for placement on the site is carried out by an employee of the press center. Ensuring the relevance of the information posted on the University website is the function of the Department of Digital Transformation. A unified document on information management was not presented, so the management of the EP is recommended to describe the mechanism for managing the information to ensure its quality and reliability, in the QMS documents of the relevant department.

Information systems used at the university are based on the use of internal corporate information network, which has access to the global network Internet. The connection is supported by fiber optic line of scientific and educational computer network users association of Kazakhstan Kazrena. (<https://drive.google.com/file/d/1otnPysrpfRKEkio6ZSaY00CgLeH7onj/view?usp=sharing>).

Communication between teachers and students, providing the latter with learning content, information exchange and reporting in the learning process as a whole is provided by AIS "Platonus" and the learning portal based on "Moodle". Selective review of web courses on the platform "Moodle" showed that there is no single clear approach to the structure of the course and its completion, the courses differ both in structure and degree of filling.

The Department of Digital Transformation ensures the integration of university information systems, participates in the development, development and support of the operation of software, information and technical means of distance technologies; provides identification of students through the authentication system for the final control of knowledge.

KARIU uses corporate e-mail in the domain <https://tttu.edu.kz/> (info@tttu.edu.kz).

Monitoring of the learning process is carried out by the management of the EP and each teacher using a certified AIS Platonus, which also automatically generates a large number of reports, both internal and to the MES RK, as well as the platform Moodle.

The information provided is processed by the EP management and presented in reports by semesters, academic years and calendar years. Operational adjustments are reflected in the minutes of the department meetings. The reliability of the reports is ensured by the current system of their approval and agreement.

Collegial bodies: methodical sections of the department, methodical commissions of the faculty, Faculty Council, Scientific and Methodical Council, Scientific and Technical Council, the University Academic Council conduct internal audits and expertise.

Documented information security management measures to ensure stakeholder trust, as well as the storage, use and protection of personal data of students and university employees are defined in the Regulation on Information Security, the Regulation on DCT and in the Regulation on Public Information (<https://ttu.edu.kz/abuniv/qms/polozheniyaprovisions-erezheler/>).

Students and teaching staff participate in the collection of information through questionnaires, as well as through participation in collegial bodies, and pps and in accordance with their duties in the department. The processes of collecting and analyzing information are regulated by QMS P 27-2-2022 "Regulations on conducting a survey to monitor the quality of educational, educational and research processes in the university".

The degree of satisfaction of teaching staff, students is determined during sociological monitoring and is one of the most important requirements of ST RK ISO 9001-2016 (ISO 9001:2015). In the university monitoring is organized and conducted by the sector of accreditation, ratings and QMS together with the department of educational work and youth policy in accordance with the requirements of the QMS standard StO II.7-01.03-2021 "Management of monitoring processes and changes in the QMS". The performance of the SP of the university and EP is assessed in the annual reports on the implementation of operational plans, when considering important issues in the collegial bodies.

Satisfaction with the level of feedback from the management and the system of conflict resolution on the results of the questionnaire during the EEC expressed 91.8% of the teaching staff, the level of involvement in management and strategic decision-making - 90.0%.

To resolve conflicts and communicate with students, employees, and other stakeholders, EP management adheres to regulatory documents that outline the procedure for filing requests and complaints on various issues of academic discipline and academic performance, in particular the Regulations on Handling Student Grievances (<https://ttu.edu.kz/abuniv/qms/polozheniyaprovisions-erezheler/>).

Students at the time of enrollment, and teachers at the time of employment, sign consent to the collection, processing of personal data.

Information support for students and faculty is also provided by the KARIU library, which has access to databases of international information resources such as Web of Science, Scopus, Wiley Online Library, as well as being a member of the Republican Interuniversity Electronic Library (RIEL). The results of the survey showed that 95.6% of the teaching staff and 100% of the students expressed their satisfaction with access to scientific information.

Analytical part

Analysis of data on the structural units of the university and the information and communication resources used, the commission concludes that the university has an information management system, which through the use of modern ICT, educational portals, sites and platforms allows the systematic and successful collection, storage and analysis of information, to ensure its reliability.

From the minutes of the meetings, plans and reports of the department it was found that the analysis of information and decisions taken are aimed at improving the EP. The reporting system used in the university provides sufficient periodicity, monitoring and control of the adequacy and reliability of the results reflected in them, allows them to assess and evaluate the activities of all structural units and collegial bodies.

The university uses a widespread document management system and an automated information system that ensures the protection of information, the timeliness of data retrieval and processing.

The university uses the mechanisms of communication with students and employees common in most universities, involving them in the process of collecting and analyzing information, decision-making through participation in collegial bodies and questioning.

Analysis of questionnaire data conducted during the work of the commission confirmed the satisfaction of the teaching staff with the level of feedback from management and the system of conflict resolution and the level of involvement in management and strategic decision-making.

The presented samples of standard applications of applicants and samples of employment contracts with employees allow us to conclude that students and faculty document their consent to the processing of personal data.

Based on the analysis of the content of operational plans and annual reports of departments it was found that the structure and content of measured indicators, which include the dynamics of the student population in terms of forms and types; level of progress, achievements of undergraduates and dropouts; student satisfaction with the implementation of the EP and the quality of education in the university; availability of educational resources and support systems for students; employment and career development of graduates, meet the standard.

The library fund, the availability of external electronic libraries, databases Web of Science, Scopus provide access to scientific information to the teaching staff, as evidenced by the data survey.

Given the fact that the Commission was not presented a unified normative document on information management, it is recommended to the management of the OP to describe the mechanism of information management, ensuring its quality and reliability, in the QMS documents of the relevant departments.

Based on the analysis of the content of web courses on the educational platform it was found that there is no unified approach to their content and control the degree of completion. therefore, the commission recommends that the management of the EP provide on a systematic basis filling web courses on the portal moodle with educational and methodological content in accordance with the requirements established in the university and provide access to it to students until the beginning of 2022/23 academic year.

Strengths/best practices in OP 7M07110 Automation and Control and 7M07112 Electroenergetics:

At the university as a whole and at the level of EP management the activities that ensure the fulfillment of the requirements of the standard are set at the proper level. It is not possible to highlight any particular strengths.

Recommendations for 7M07110 Automation and Control and 7M07112 Electroenergetics:

1. ***To the management of the EP to describe the mechanism for managing information to ensure its quality and reliability in the QMS regulation of the relevant department by the beginning of the 2022/23 academic year.***

2. ***Management of the EP to ensure the systematic content of web courses on the portal moodle educational and methodological content in accordance with the requirements established in the university and provide access to it for students before the beginning of the 2022/23 academic year.***

VEC's conclusions on the criteria:

According to the standard "Information Management and Reporting" educational programs 7M07110 Automation and Management and 7M07112 Electroenergetics have 14 satisfactory positions and 2 suggest improvement.

6.3 Standard "Development and approval of the educational program"

- ✓ The PA must define and document procedures for developing PAs and their approval at the institutional level
- ✓ The management of the EP must ensure that the content of the EP is consistent with the established objectives, including the intended learning outcomes
 - ✓ Management of EP must demonstrate that there are mechanisms to review the content and structure of the EP, taking into account changes in the labor market, employers' requirements and social demands of society
 - ✓ EP management must ensure the availability of developed models of graduates, describing the learning outcomes and personal qualities
 - ✓ Management of the OP must demonstrate an external examination of the content of the OP and the planned results of its implementation
 - ✓ The qualification awarded upon completion of the OP must be clearly defined and meet the defined level of the NSC and QF-EHEA
- ✓ Management of the EP should determine the impact of disciplines and professional practices on the formation of learning outcomes
- ✓ An important factor is the possibility of preparing students for professional certification
- ✓ Management of the EP must provide evidence of the participation of students, faculty and other stakeholders in the development of the EP, to ensure its quality
 - ✓ The management of the EP should ensure that the content of academic disciplines and planned results correspond to the level of training (bachelor's, master's, doctoral degree)
 - ✓ The structure of the EP should provide for various activities to ensure that students achieve the planned learning outcomes
- ✓ An important factor is the correspondence of the content of SP and learning outcomes of SPs implemented by organizations of higher and (or) postgraduate education in the EHEA

Evidence

In order to regulate the development and quality assessment of EPs, the university has defined and documented the procedures for the development of EPs in the Regulations on the development of MOP QMS P 4-25-1-2021. It prescribes the structure, procedures for the development and approval of EPs.

The following normative documents are used in the development of the curriculum: QMS StO II.8-02.02-2021 Management of the learning activity process, QMS StOII.8-03.01-2021 Design and development of educational services, QMSK KP 01-2021 Study process, QMSK KP 02-2021 Educational and methodical process, QMSK P 4-49a-2021 Regulations on development of the graduate model, QMSK P 4-55-2022 Regulations on postgraduate education, QMSK P 4-49-2021 Regulations on additional educational program QMS P 4-28-2021 Regulations on the organization and conduction of professional internships and determination of organizations as internship bases, QMS P 4-54-2022 Regulations on the organization and conduction of pedagogical internships for master and doctoral students, QMS P 4-34-2021 Regulations: organization of current and boundary control, intermediate attestation and evaluation of students' knowledge, SMC P 4-35-2022 Regulations on the organization and conduct of final attestation.

Based on the analysis of economic demands and the demand for EP, the goals of EP are defined. The development of EP begins with the creation of a graduate model, includes the correlation of the model with the expected learning outcomes and the design of methods and means of assessment of learning outcomes in the context of disciplines.

The correlation between the learning outcomes and the disciplines of the EP is reflected in the map of competencies of Passport EP 7M07110 Automation and Control and 7M07112 Electroenergetics. Each competence is provided by a particular module of the studied disciplines and practices.

Graduate models and educational programs for PG 7M07110 Automation and Control and 7M07112 Electroenergetics were developed according to the approved at the university Regulations on the development of MEP QMS P 4-25-1-2021 and approved after collegial discussion at the department meetings AI and EE, protocol № 12 dated 11 February 2020, Faculty Council Minutes № 3 dated 17.02.2020, Faculty Council (Minutes № 4/1) and approved

by its Chairman Sivyakova G.A. 24/03 2020

When developing graduate models, we took into account their compliance with the requirements of the qualifications assigned upon completion of the educational program, reflected in the National Qualifications Framework (Order of the MES of RK dated 25.11.2015 № 656), National Qualifications Framework (Minutes of March 16, 2016 of the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations,) National Qualifications Framework 2016 (atameken.kz) in accordance with the level of education.

Familiarity with the content of PG 7M07110 Automation and Control and 7M07112 Electroenergetics demonstrates their modular structure and compliance with the European Credit Transfer and Accumulation System (ECTS).

EP 7M07110 Automation and management contains modules in accordance with the expected learning outcomes of the competencies: socio-political knowledge module; automation systems software module; research module in automation and management; automation and robotics systems engineering module; practice module and final attestation.

The full cycle of training contains 120 ECTS academic credits for the scientific and pedagogical direction and 90 - for the profile direction.

EP 7M07112 Electroenergetics includes a module of socio-political knowledge; module software of Electroenergetics systems; module of scientific research in Electroenergetics; module of engineering of Electroenergetics systems; practice module and final attestation.

The full cycle of training contains 120 ECTS academic credits for the scientific and pedagogical direction and 90 - for the profile direction.

According to the submitted copy of the conclusion the external expert evaluation of the accredited EP was carried out by Doctor of Technical Sciences, Professor of Krivoy Rog National University Tytyuk V.K.

Based on the orders on the composition of the working groups, we can conclude that in the development of OP participated representatives of faculty, students and employers. For example, the working groups for the development of SP included Vasilets V.E., 4th year student of EE-16 group, Golyshev A.G., 4th year student of AiU-16 group, employers: Shishilov V.E. - Head of Process Automation and Automated Electric Drive Service of TSSF JSC "Arcelor-Mittal Temirtau", Sirenko V.M, Deputy Chief Power Engineer of JSC "Karcement", O.G. Sergeeva, IT Manager of the main data processing center of JSC "ArcelorMittal Temirtau".

Stakeholder suggestions and the results of the questionnaire, as shown by the minutes of the department meetings and the results of the interviews, are taken into account in the content of the OP.

For example, on the recommendation of the experts of JSC "ArcelorMittal Temirtau" from the Chief Power Engineer Department "Karcement" the disciplines Industrial programming languages, Fuzzy logic in control tasks, Automation systems engineering, Industrial robots management, MES-systems, Modern methods and means of development of automation and control systems are introduced in OP 7M07110 - A&E. The disciplines Mechatronic Systems and Robotics, Unconventional and Renewable Energy, Modern Methods and Means of Development of Energy Systems are introduced in OP 7M07112 - EE.

Disciplines on the state program "Digital Kazakhstan" are also included.

Accredited EPs are listed in the ESUVO registry:

- AiU - http://esuvo.Platonus.kz/#/register/education_program/application/21102,
- EE - http://esuvo.Platonus.kz/#/register/education_program/application/21101.

The EEC survey showed that an overwhelming number of the teaching staff is well informed and appreciates the activities of the university in the development of the program. The following results were obtained, which reflect full or partial satisfaction:

– Correspondence of the content of the educational program to scientific and professional interests and needs - 100%

– Attention paid by the management of the educational institution to the content of the educational program - 100%

– Orientation of educational programs/ curricula towards the formation of students' abilities and skills to analyze the situation and make predictions - 100%

– The extent to which the educational program in terms of content and quality of implementation meets the expectations of the labor market and employers - 100%.

The survey also determined a high degree of student satisfaction with the OP and awareness of its results:

- The quality of the educational program as a whole - 100%

–The quality of educational programs in the OP - 100%;

–Informational support and clarification before entering the university of the rules of admission and the strategy of the educational program (specialty) - 100%;

–Informing requirements in order to successfully graduate from this educational program - 100%.

In the academic years 2020/2021 students of the departments received free training in introductory courses CISCO to obtain an industrial certificate.

Preparatory work on the implementation of two-degree programs is underway. In November 2021, two online meetings were held to develop joint programs with Krivoy Rog National University (Ukraine) and Navoi State Mining Institute (Uzbekistan).

Director of the Institute of electromechanics, electrical supply and control systems Kremenchug National University Black A.P. within the framework of academic mobility teaches students and graduate students of the departments "TII" and "Power Engineering" since September 2021.

Analytical part

Based on the analysis of the submitted regulatory documents, KARIU EEC notes that the university has created and applies a documented procedure for the development, evaluation and approval of the EP, which ensures compliance with the necessary requirements of the standard and the achievement of the planned level of quality.

EP regulates the goals, results, content, conditions and technologies of the educational process, evaluation of the quality of graduates' training in the master's programs "Automation and Management" and "Electroenergetics" and ensures the quality of students' training. Implementation of EP is aimed at the formation of key competencies of future specialists and meeting the needs of the labor market. EP provide an opportunity to build an individual educational trajectory, taking into account the personal needs and capabilities of students.

Based on the analysis of the content of the OP, CED and RUP established that the structure of OP consists of modules, the set of which is determined by a set and content of competencies stated in the models of graduates by level of training and based on the European system of transfer and accumulation of credits (ECTS).

The modules of academic disciplines contained in the program, their content, as well as the content of practice corresponds to the expectations and declared competencies. The presented models of graduates of SP 7M07110 Automation and Control and 7M07112 Electroenergetics sufficiently disclose the learning outcomes and personal qualities, which graduates should obtain at the end of the programs. The awarded qualifications correspond to the seventh level of NSC, QF-EHEA.

Based on the submitted documents, we can conclude that the programs underwent external review, and in their development took into account the proposals of the teaching staff, students and employers who were involved in their development.

The uniqueness of the EP is provided by the set of elective disciplines, due to the stated requirements of the representatives of employers and students. Students along with the basic program have the opportunity of free additional training at CISCO courses.

Strengths/best practices in OP 7M07110 Automation and Control and 7M07112 Electroenergetics:

At the university as a whole and at the level of EP management the activities that ensure the fulfillment of the requirements of the standard are set at the proper level. It is not possible to highlight any particular strengths.

Recommendations for 7M07110 Automation and Control and 7M07112 Electroenergetics:

No recommendations for this standard

VEC's conclusions on the criteria:

According to the standard "Information Management and Reporting" educational programs 7M07110 Automation and Management and 7M07112 Electroenergetics have 12 satisfactory positions.

6.4. Standard "Continuous Monitoring and Periodic Evaluation of Educational Programs"

- ✓ The PA must define mechanisms for monitoring and periodic assessment of the OP to ensure the achievement of the goal and meet the needs of students, society, and to show the focus of the mechanisms for continuous improvement of the OP
- ✓ Monitoring and periodic evaluation of the OP should include:
 - ✓ The content of the program in the light of the latest achievements of science in a particular discipline to ensure the relevance of the taught discipline
 - ✓ changes in the needs of society and the professional environment
 - ✓ the workload, grades and graduation rates of students
 - ✓ the effectiveness of evaluation procedures for students
 - ✓ Expectations, needs, and satisfaction of the students with the EP training
 - ✓ educational environment and support services, and their compliance with the goals of the OP
- ✓ The management of the OP must demonstrate a systematic approach to monitoring and periodic assessment of the quality of the OP
- ✓ PA, PA management must determine a mechanism for informing all stakeholders of any actions planned or taken with respect to the PA
- ✓ All changes made to the OP must be published

Evidence

The procedure for monitoring and periodic assessment of EP, as well as the mechanisms for formation and revision of the Development Plan of EP at the university are carried out on the basis of internal documents of QMS. The performance criteria of EP are the enrollment of undergraduates, progress and employment. The indicators that reflect the success of the educational process and the development of EP are approved in the annual plans of departments and faculty based on the strategic plan of KARIU. In the Regulation on the development of MEPs there is a mechanism for reviewing the content and structure of EP.

Monitoring the implementation of EP and their periodic assessment of the achievement of learning objectives, compliance with the needs of students, employers and society is carried out at different levels: department, faculty, university. External and internal audits are used to assess the implementation of the plan of EP, the results are considered on the Board of Directors, Council of Directors, GMC, STC, meetings of the department. Based on the results of monitoring and evaluation, decisions are made aimed at continuous improvement of EP. If necessary, decisions are made or plans are developed to improve the quality of education and improve the educational activities.

In order to assess the satisfaction with the obtained and acquired by students competencies and qualifications the procedure of monitoring the achievement of learning objectives is carried out annually through questionnaires and surveys of students and employers, the results are reflected in the reports of departments, which are agreed with the structural units and approved. Monitoring the satisfaction of the needs of undergraduates and society is carried out and analyzed by university departments: DAP, Admissions Committee, Internal Audit Service, dean's offices, graduate departments.

The content of EP and disciplines is based on the latest achievements of science and technology. New laboratories are introduced on the basis of purchased new modern equipment and software. For example, the laboratory of 3D engineering, computer center SOTSBI, etc. The content of special disciplines takes into account the current provisions of the program Digital Kazakhstan and the implementation of the direction Industry 4.0

When developing the EP, the requests of enterprises related to the study and research in the field of automation and control and power engineering are taken into account: JSC "ArcelorMittal Temirtau", "Karcement", LLP "Imstalkom Temirtau", LLP "RFZPROM ENGINEERING", which are the main consumers of graduates in the accredited EP.

The study of RUP has shown that the development of EP takes into account the norms of academic load of students in the context of the academic year, semesters, weeks. In the master's degree scientific and pedagogical direction of the volume of cycle BD is 35 academic credits in the total volume of EP. Of these, 20 academic credits allocated to the GC, the amount of cycle PD is 49 academic credits. Final certification is not less than 12 academic credits in the total amount of master's degree program scientific and pedagogical direction and is conducted in the form of writing and defending a master's thesis (project).

There has been a slight increase in the number of students for 2 years from 3 to 9, so there is no problem with the load of classrooms at this stage.

Monitoring the progress of students in the program is carried out by analyzing the progress in the disciplines, the passage of practices and protection of master's works. The progress of the learner is traced from the 1st year to the end of training. After each session, the director of DAP analyzes the progress of undergraduates and is presented to the Academic Council. At the end of each semester of training all grades received are summarized in the transcript, where you can see the marks for each course of study. Information about the progress of students is stored in the information system AIS "Platonus" and is available to the learner and for monitoring by the registrar's office, faculty and department management. Each graduate learns all stages of training by obtaining grades for each discipline. The basis for transfer to the next course is the indicator of GPA. The load of students is reflected in the IPRM and monitored by the department, OR and taken into account in the development of RUP. The volume of teaching load and the level of training of Master students of the accredited EP correspond to the requirements of SES RK.

Monitoring of the progress of students is carried out in accordance with the internal documents of the QMS StO II.9-01.01-2021 Control process (preparation and conduct of the examination session). Monitoring of the EP showed a high success rate - 100%.

Monitoring of the internship according to the adopted in the university regulation is carried out by DPI, DAP, MS, heads of EP and supervisors of internships. After delivery of reports the departments analyze the results of practice (for example, the minutes of the meeting of the department of TII №15 from 16.03.2021 (<https://drive.google.com/file/d/1V9o-euQ4ICSyU1jsv2Zjdax8rVOi5ohx/view?usp=sharing>)).

Electronically submitted department plans and reports are posted on the KARIU website.

Monitoring in the form of a questionnaire on satisfaction with the quality of educational needs in relation to the main subjects of the educational process is carried out centrally through a link to the Google survey form (https://docs.google.com/forms/d/e/1FAIpQLSdJwrBD1eLl6aAh9xS8pBbiujHqpO46jeXsj6URDui_vJYD7A/viewform?usp=sf_link).

The AIS Platonus provides for evaluation of the work of the teaching staff by students.

Information on quality assurance of educational services, the degree of satisfaction of undergraduates with the quality of educational services and transparency of university activities (based on the results of sociological surveys) are available in the Reports section.

Analytical part

Analysis of plans, reports, minutes of department meetings, normative documents and materials of the website KARIU allowed to conclude that the university in general successfully uses a documented procedure for monitoring and periodic assessment of EP, aimed at improving the processes of implementation and content of EP.

This mechanism allows for monitoring and reviewing the content of the program to take into account changes in the labor market, the requirements of employers, teaching staff and students. The monitoring assesses the content in the programs of the achievements of science and technology, the needs of society and the environment, as well as teaching load and graduation of students. However, monitoring the use of innovative educational technologies, as noted above, is not always effective.

The university has created and operates academic support services for students: the registrar's office (OR), the service center for students, advisers, Department of Educational Work and Youth Policy, whose activities are aimed at meeting the needs of students.

Stakeholders have access to the results of monitoring and the changes made on the website of the university, the educational portal of KARIU, at meetings and seminars of the departments of TII and E with the participation of teaching staff of the department, as well as in social networks.

Strengths/best practices in OP 7M07110 Automation and Control and 7M07112 Electroenergetics:

At the university as a whole and at the level of EP management the activities that ensure the fulfillment of the requirements of the standard are set at the proper level. It is not possible to highlight any particular strengths.

Recommendations for 7M07110 Automation and Control and 7M07112 Electroenergetics:

1. In order to improve the quality of teaching, *the management of the OP* to annually monitor the applied innovative methods of teaching core disciplines **since September 2022.**

VEC's conclusions on the criteria:

According to the standard "Information Management and Reporting" educational programs 7M07110 Automation and Management and 7M07112 Electroenergetics have 10 satisfactory positions.

6.5 Student Centered Learning, Teaching, and Assessment Standard

- ✓ The EP management must ensure respect and attention to different groups of students and their needs, provide them with flexible learning paths
- ✓ The EP guidelines should provide for the use of various forms and methods of teaching and learning
- ✓ An important factor is the availability of our own research in the field of teaching methodology of academic disciplines of the OP
- ✓ EP management must demonstrate that there are feedback mechanisms in place for the use of different teaching methodologies and assessment of learning outcomes
- ✓ EP leadership must demonstrate mechanisms to support learner autonomy while being guided and assisted by a faculty member
- ✓ EP management must demonstrate that there is a procedure for responding to student complaints

- ✓ The PA must ensure consistency, transparency and objectivity of the mechanism for assessing learning outcomes for each OP, including appeal
- ✓ The PA must ensure that the procedures for assessing the learning outcomes of students in the OP planned results and objectives of the program, the publication of criteria and methods of assessment in advance
- ✓ The GS must define mechanisms to ensure that each graduate achieves the learning outcomes and ensure the completeness of their formation
- ✓ Evaluators must be proficient in modern methods of assessing learning outcomes and receive regular professional development in this area

Evidence

The implementation of student-centered learning principles in the university is carried out in the following directions: creating conditions for different groups of undergraduates in accordance with their needs; providing flexible learning paths; using various forms of teaching; regular feedback; pedagogical methods used for evaluation and correction; supporting learner autonomy, while proper guidance and assistance from the teacher; strengthening of mutual respect of teacher and student; availability of These directions are reflected in various CarIU documents and regulations.

Students in the current program have the opportunity to create individual learning paths, which are formed through the choice of elective courses, which together with the required courses are aimed at forming the necessary professional competencies. Elective courses are chosen by students independently, in accordance with their interests and requests. Selected elective courses are recorded in the AIS Platonus.

Consultations on the selection of elective disciplines are conducted by course advisors, as well as faculty members of the department for the taught disciplines at the end of the academic year. AIS Platonus automatically generates an individual curriculum for a particular student for the academic year and by semesters. Trainees independently choose internship bases from those with which the department has an agreement. You can also choose other bases by concluding on your own initiative a 3-way agreement with the enterprise and the university.

Students have a free choice of instruction in Kazakh, Russian and English.

In the implementation of the educational process in the EP, the needs of students with disabilities and socially disadvantaged students are taken into account.

Thus, KARIU provides inclusive education, the organization of which is carried out in accordance with the university regulations on inclusive education (SMK-P-4-50-2021). The teaching staff are trained accordingly. For example, G.A. Sivyakova, associate professor of the Department of TII, was trained in methods and technology of inclusive education.

For students with special educational needs, if necessary, can develop an individual curriculum with an individual schedule of attendance. To ensure the accessibility of education for students with special educational needs, as well as during restrictive measures in quarantine conditions, there is an opportunity to use a form of remote access to personal accounts AIS Platonus and Moodle, teachers provide consultations using Internet technologies.

In order to improve the efficiency, development and implementation of innovative methods of teaching at the departments annual plan for TMR is made, with each teacher plans the development of innovative methods. To monitor its implementation, the teaching materials and syllabuses are checked, and the schedule of open classes is drawn up.

Visiting classes during the EEC visit showed that the teachers of the department used slides-presentations and DER in these classes. During the quarantine in 2020 mastered distance learning technologies. Online classes are conducted using the services of Skype, Microsoft Team.

The study of the UMCD showed that during the training sessions of the accredited educational programs are used software packages Mathcad, Matlab Simulink in the disciplines "Simulation tools and technologies", "Modern software environments", "Modeling of electromechanical systems".

To exchange experience according to the information from the website of the University in November 2021 held a methodical week FETiSU, during which Dr. U. Umbetov, professor of the department of "Artificial Intelligence Technology" conducted a master class "Case technology", and a senior lecturer of the department "Energy" Kamarova SN held a master class "Technology of distance learning for technical specialties.

The use and dissemination of experience of modern methods of teaching can be traced in the materials of the meetings and minutes of open classes, minutes of mutual visits, minutes of the MC.

Teachers of the Department of "Energy" undergraduates of accredited EPs participate in the institutional research on "Lifelong Learning at KARIU: Prospects and Directions".

Faculty members publish the results of their own research in the field of teaching methodology of academic disciplines. For example, the article by Kuntush E.V., Bayasilova Z.A. "Organization of studying the discipline "Electrical machines and electric drive" in the distance learning system" was published in the Proceedings of the International Scientific and Methodological Conference "Architectonics of educational space: trends and challenges" - Temirtau: KarIU, 2020, and Sivyakova G.A., Chernyi A.P., Kharchenko E.M. published the work "Pandemic influence on the competence of university teachers" in the national journal "Proceedings of the University" - Karaganda: KarTU, №4(85), 2021

To facilitate the process of mastering the content and achieving the goals of the EP by each graduate, the departments of TII and Energy provide students with information and reference and methodological materials. According to the RUP the distribution of the academic load of students between theory and practice within the framework of the OP meets the requirements of the regulatory documents of MES RK and is provided by the choice of students from the proposed alternatives specified in the programs.

In the educational process of the accredited SPs are used their own educational and methodological developments. Thus, according to the list provided by the library for the period 2014-2020 the teaching staff published 15 textbooks and monographs.

The academic autonomy of undergraduates and their achievement of the appropriate level of professional competence development are achieved through their independent work, which in accordance with the existing standards is provided in the plans of the accredited EPs. To realize the personal and creative potential of undergraduates allow participation in national and international conferences, ongoing research competitions and other events of the university.

Thus, the 2nd year master's students Esimkhanova A., Kolonchina N. and others participated in the international scientific and methodological conference "Architectonics of educational space: trends and challenges" - Temirtau: KarIU, 2020, the results of which were published articles.

Procedures for assessing the level of knowledge of students comply with the provisions of the Academic Policy of the University, as well as regulated by the Regulations on the organization of current and boundary control, interim certification and assessment of students' knowledge SMC P 4-34-2021. Assessment of educational achievements of students at KARIU is based on the point-rating letter system. Transparency of assessment is provided through AIS Platonus. Learning achievements of students are evaluated on a 100-point scale, corresponding to the alphanumeric system adopted in international practice. Each academic discipline ends with an exam, the training uses current and boundary control, uses public defense of the results of practices and graduation works. Students who disagree with the assessment, have the right to appeal. Criteria and methods of assessment in the OP are published on the website.

The KARIU website provides information about class schedules and exams, the AIS "Platonus" about current and interim grades, the established transfer points (GPA), a catalog of elective courses and other necessary information.

The university has a procedure for responding to student complaints, which is regulated by the Regulations on the work with student complaints and is available on the KARIU website.

Questionnaire surveys are used to determine student satisfaction with teaching and assessment methods.

The questionnaire conducted during the EEC visit showed that the students who took part in it were fully or partially (indicated in parentheses) satisfied:

- Availability of academic advising - 100(7.7)%,
- Academic load - 100(7.7)%,
- The requirements of the faculty to the student - 100(0)%,
- The quality of exam materials (tests and exam questions, etc.) is 100(0)%,
- The objectivity and fairness of the teachers is 100(0)%,
- Equal opportunities for mastering the EP and personal development are provided to all students at 100 (7.7)%.

Analytical part

According to the results of the survey of undergraduates during the EEC visit, it was found that the vast majority of them are satisfied with the mechanism to maintain student-centered learning in the university, the opportunities in the choice, the quality of teaching and assessment materials and methods, the relationship with the faculty and management, which indicates the provision of largely equal opportunities for different groups of students. However, despite the success of work in the field of student-centered learning, the university has no unified regulations that regulate and predetermine the success of this direction to a greater extent.

Based on the study of regulatory documents, interviews with teachers and students, visiting online classes we can conclude that the university in the implementation of EP 7M07110 Automation and Management and 7M07112 Electroenergetics along with traditional uses modern distance learning technologies, well mastered by all teachers, innovative technologies using interactive methods and tools, modern laboratory equipment and computer programs. Faculty and university services apply objective criteria and methods of assessing learning outcomes, including distance learning.

The content and structure of the RUP and IPRM allows us to conclude that the mechanism adopted in the university distribution of workload in the presented programs ensures compliance with the regulatory ratio between theory and practice and is aimed at achieving the goals of the program by all graduates, as evidenced by the absence of expulsion students of these programs for unexcused reasons and for failure to learn.

The content of curricula and reports of teaching staff, plans and reports of the department, the number of published textbooks and teaching aids shows that in the implementation of EP own research and implemented in the educational process author's developments and courses. Nevertheless, departments do not have a prospective plan for their own research in the field of innovative teaching and do not conduct research at the expense of grants, participation in conferences and seminars is limited according to the publications of regional and institutional level, despite the existing potential. Perhaps it is necessary to revise the mechanism for stimulating the faculty for achievements in this area.

The assessment procedures described above correspond to the objectives and learning outcomes of the EP. This is confirmed by the feedback of employers, both in the university questionnaire, and by the results of the survey during the EEC visit.

The documented mechanism for assessing learning outcomes shows that the university provides transparency and objectivity, the assessment criteria are known in advance to the participants in the process.

All students of the accredited EPs are satisfied with the feedback forms to determine the degree of student satisfaction with the methods of teaching and assessment of knowledge.

Strengths/best practices in OP 7M07110 Automation and Control and 7M07112 Electroenergetics:

At the university as a whole and at the level of EP management the activities that ensure the fulfillment of the requirements of the standard are set at the proper level. It is not possible to highlight any particular strengths.

Recommendations for 7M07110 Automation and Control and 7M07112 Electroenergetics:

1. *The OP management to form a policy of student-centered learning with an analysis of the main differences from traditional methods and practices of teaching by January 2023.*

2. *The OP management to develop a plan to hold on a regular basis methodological conferences / seminars on modern methods of teaching and assessment of learning outcomes since September 2022.*

3. *The OP management to prepare a plan for the development and implementation in the educational process of their own research faculty in the field of methodology of teaching major disciplines by the beginning of the 2022/23 academic year.*

4. *The management of the university to develop a mechanism to stimulate the activities of the teaching staff to conduct research in the field of methodology of teaching major disciplines by the beginning of the 2022/23 academic year.*

VEC's conclusions on the criteria:

According to the standard "Information Management and Reporting" educational programs 7M07110 Automation and Management and 7M07112 Electroenergetics have 9 satisfactory positions and 1 suggests improvement.

6.6 The Learner Standard

- ✓ The PA must demonstrate the existence of a policy for the formation of the contingent of students in the context of the OP, to ensure the transparency and publication of its procedures governing the life cycle of students (from admission to completion)
- ✓ *The EP management should determine the order of formation of the contingent of students on the basis of:*
 - ✓ minimum requirements for applicants
 - ✓ maximum group size for seminars, workshops, labs, and studios
 - ✓ forecasting the number of state grants
 - ✓ Analysis of available material and technical, information resources, human resources
 - ✓ analysis of potential social conditions for undergraduates, including the provision of places in the dormitory
- ✓ EP administrators must demonstrate a willingness to conduct special adaptation and support programs for newcomers and international students
- ✓ The GS must demonstrate compliance with the Lisbon Recognition Convention, the existence of a mechanism for the recognition of the results of academic mobility of students, as well as the results of additional, formal and informal learning
- ✓ The GS should collaborate with other educational organizations and the national centers of the "European Network of National Academic Recognition and Mobility Information Centers/National Academic Recognition Information Centers" ENIC/NARIC in order to ensure comparable recognition of qualifications
- ✓ The PA should provide opportunities for external and internal mobility of EP students, as well as the willingness to assist them in obtaining external grants for training
- ✓ The EP management must demonstrate a willingness to provide students with internships, to promote the employment of graduates, and to maintain communication with them
- ✓ The GS should provide for the possibility of providing graduates of the EP with documents confirming the qualifications obtained, including the achieved results of learning, as well as the context, content and status of the education received and the certificate of its completion

Evidence

Management of the process of formation of the contingent of students at the university is carried out in accordance with QMS StO II.8-01.01-2021 Management of the process of selection of applicants. The university has a published policy for the formation of the contingent of students in the context of OP. The main resource of information is the University website.

Informing students upon admission about the requirements and specifics of the implementation of the program is carried out through the Admissions Committee, during the Open House days at the department, faculty, university, during meetings on career guidance work with applicants.

Informational support of career guidance activities of the university is supported by the press center of KARIU. All employees and teaching staff of the departments take part in career guidance work, as it was established during interviews with them and employees of JSC "ArcelorMittal Temirtau" the work is carried out among the graduates who are inclined to scientific research and show high academic results, as well as among employees of educational institutions and industrial enterprises.

Enrollment for undergraduates is carried out according to the Standard rules of admission to the educational organizations that implement educational programs of higher and postgraduate education (MES Order № 600 from October 31, 2018), as well as the Rules of admission to KARIU. The University website contains the necessary information: admission rules, programs of admission to the specialties, learning paths, orders on enrollment, as well as on the transfer of students from course to course, from other universities, the order of transfer credits mastered in other universities, expulsions.

The results of the admission of undergraduates in the accredited programs for the academic years 2020-2021 and 2021-2022 are presented in Table 1.

Table 1 - Information on the admission of graduate students

Name of educational program	School year	
	2020-2021	2021 - 2022
7M07110 - "Automation and Control"	2	4
7M07112 - "Electroenergetics"	1	2

Despite some increase in enrollment, enrollment remains low, including educational grants.

The learning process is regulated by the Academic Policy and relevant normative documents, e.g. QMS StO II.8-02.02-2021 Management of the learning activity process, QMS StO II.8-02.03-2021 Management of Educational Process, QMS CP 01-2021 Educational Process, QMS P 4-55-2022 Regulations on Postgraduate Education, QMS P 4-49-2021 Regulations on Additional Educational Programmes, QMS P 4-28-2021 Regulations on the Organization and Conduct of Professional Practicums and Determination of Organizations as Practicum Bases, QMS P 4-54-2022 Regulations on the Organization and Conduct of Educational Practicums for Master Students and Doctoral Students, QMS P 4-34-2021 Provisions: organization of current and boundary control, interim certification and assessment of students' knowledge, SMC P 4-35-2022 Regulations on the organization and conduct of final certification, etc. Regulatory documents are approved and available on the website of the university.

First-year students are provided with a guidebook, which is available on the website of the university. The management of the university and accredited EPs implement special programs of adaptation and support for newly arrived and foreign students, a plan of university activities for the adaptation of foreign students is approved. The adaptation program includes individual assistance and consultations to students, which are carried out by advisers, teaching staff, leading classes in disciplines, heads of departments and the dean. However, the departments do not have their own clearly articulated programs in this area, there is no analysis of the satisfaction of the enrolled students.

In accordance with the Academic Policy of KARIU and the Rules of transfer and recovery of students (SMC P 4-33-2021) the university provides recognition of higher and postgraduate education qualifications, periods of study and prior learning, including recognition of non-formal and informal learning, which are based on ensuring action in accordance with the Lisbon Convention on the Recognition of Qualifications.

. At KIMEP there is a mechanism for the recognition of the results of academic mobility

of students, as well as the results of additional, formal and informal learning, fixed and published in the academic policy of the university. The mechanism of recognition of the results of learning, mastered during the academic mobility is prescribed in the Regulations of academic mobility (SMC P 4-24-2021).

The university concludes memorandums of cooperation with the leading universities of Kazakhstan, near and far abroad (<https://ttu.edu.kz/parcontracts/>). Informing students about external and internal mobility programs is carried out through the official website. However, the accredited programs do not yet have double degree programs, not accepted by the academic mobility program of students from other universities.

KARIU cooperates with various educational and industrial organizations.

The organization and conduct of internships is carried out in accordance with the approved Procedure, the academic calendar and working curricula.

The choice of organization for practical training (industrial, pre-diploma for bachelors and research for undergraduates) is based on the concluded bilateral or trilateral agreements on cooperation with organizations and enterprises.

To analyze the assessment of student satisfaction with the organization of practical training, monitoring is carried out annually by questioning students.

As noted above, master's students conduct research and participate in scientific conferences and seminars and publish in scientific journals.

Information about extracurricular activities takes place through the stands, website, university newspaper "Student Bulletin".

To meet the needs of students in the development outside the basic program at the university operates a sports club "Temir", there is a sports complex, including large and small game rooms, wrestling rooms, gym, tennis room. Every year the traditional Festival of Health is held within the framework of "Freshers' Week" event. The University Alumni Association has been working at KARIU on a permanent basis for more than 20 years.

In accordance with QMS P 3-01-2021 Regulations on the educational grant of the university, the university scholarship and benefits for tuition at NAO "Karaganda Industrial University" students are provided with an educational grant of the university or benefits for tuition.

Analytical part

Having studied and analyzed the regulatory documents of KARIU, the EEC notes that the policies and procedures of the EIU for the formation of the student body are documented and aimed at its preservation and growth, support for students at all stages of education. All materials are published and available to participants of the process, providing its transparency. During the analysis of the contingent of students of the accredited EPs the Commission observes a tendency towards some increase. However, the contingent remains low, so there is a need to develop and implement an action plan to increase enrollment in the accredited EPs, taking into account the projection of state grants.

The university is working on the organization of support for first-year undergraduates, as well as foreign students, including those arriving under the programs of academic mobility. Nevertheless, there is no clear program of support at the departments of TII and Energy, there is no monitoring of satisfaction. The creation and implementation of such a program could contribute to the growth of enrollment.

In accordance with the Lisbon Convention the university has developed and approved regulations and procedures for credit transfer, nostrification, the recognition of non-formal learning outcomes. The university cooperates with a number of foreign educational organizations

on academic recognition and mobility in order to ensure comparable recognition of qualifications. There is and uses the mechanism of recognition of the results of academic mobility.

However, the extensive use of academic mobility, including the lack of dual degree programs, suggests the need to create and implement an action plan to improve the effectiveness of such activities, which will also help to increase enrollment in accredited EPs.

Based on the analysis of the materials presented by the EP management and the materials from the university website, the results of the interview, the EEC notes that at KARIU created conditions for self-education and development outside the curriculum and mechanisms to stimulate educational and extracurricular activities.

KARIU successfully operates a mechanism for monitoring the employment and professional activities of graduates. The university and the EP management provide students with internships and contribute to the employment of graduates. Particularly noteworthy is the close and productive relationship with industrial enterprises, especially JSC "ArcelorMittal Temirtau", which fully allows the internship on the accredited EP, employment of graduates, dual training, practical training and research. The company employs a large number of graduates, many of them in high positions, who participate in both internship and training sessions, joint research, reviewing graduate works. This allows the VEC to classify this position of the university as a strong one.

Strengths/best practices in OP 7M07110 Automation and Control and 7M07112 Electroenergetics:

The management of EP has established close ties with the bases of practice at the city-forming enterprise "ArcelorMittal Temirtau", which fully provides students of these EP with internships, promotes employment and career growth of graduates, maintains ties with them. It should be noted that there are university graduates working in managerial positions in a number of departments. There are also training laboratories on automation and power engineering, and joint projects are implemented to improve the management of technological processes.

The above facts allow us to consider this paragraph of the standard (EP management must demonstrate a willingness to provide students with internships, to promote the employment of graduates, to maintain communication with them) as a strong point of EP management.

Recommendations for 7M07110 Automation and Control and 7M07112 Electroenergetics:

1. *Management of the OP* to develop an action plan to further develop academic mobility of students, expanding the geography of partner universities, both within the country and abroad, **by January 2023.**

2. *EP management* to develop measures to increase the number of students, taking into account the forecast for the allocated grants, as well as to attract foreign undergraduates **by the beginning of the academic year 2022/23.**

3. *EP management* to develop a special adaptation and support program for newcomers and international students **by the end of the 2021/22 academic year.**

VEC's conclusions on the criteria:

According to the standard "Information Management and Reporting" educational programs 7M07110 Automation and Management and 7M07112 Electroenergetics have 1 strong, 8 satisfactory positions and 3 suggest improvement.

6.7 The "Faculty" Standard

- ✓ PA should have an objective and transparent personnel policy, including in the context of OP, including recruitment, professional development and staff development, ensuring professional competence of all staff
- ✓ The PA must demonstrate that the staff capacity of the teaching staff is appropriate to the specifics of the program
- ✓ The management of the OP must demonstrate a sense of responsibility for their employees and ensure a favorable working environment for them
- ✓ EP leadership must demonstrate a change in the role of the instructor in relation to the transition to student-centered learning
- ✓ The GS should determine the contribution of the teaching staff to the implementation of the GS development strategy, and other strategic documents
- ✓ The GS must provide opportunities for career and professional development of the teaching staff
- ✓ The EP management must demonstrate a willingness to involve practitioners from the relevant industries in teaching
- ✓ The GS must demonstrate motivation for professional and personal development of teachers of EP, including encouragement for the integration of scientific activities and education, the use of innovative teaching methods
- ✓ An important factor is the willingness to develop academic mobility within the OP, attracting the best foreign and domestic teachers

Evidence

Personnel policy is reflected in the Development Strategy of KARIU for 2021-2025, as well as in the following documents: Regulation on personnel policy; Regulation on the qualification characteristics of scientific and pedagogical staff, QMS P 4-20-2022, the rules of labor regulations.

Recruitment, registration of their employment, relocation and dismissal, the preparation of documents for approval in positions is the responsibility of Human Resources Management Service, which is guided by the Labor Code of the Republic of Kazakhstan.

The staff is completed in accordance with QMS P 4-20-2020 "Regulations on the qualification characteristics of positions of scientific and pedagogical staff of KARIU" and QMS P 4-19-2020 "Rules of competition for positions of teaching staff and scientific workers.

Hiring is accompanied by the conclusion of an employment contract, developed in accordance with the current labor legislation. The job descriptions set out the rights and responsibilities of the teaching staff in accordance with the requirements of the QMS KARIU.

In its activities on recruitment, appointment, dismissal, removal from teaching activities KARIU is guided by the Law of RK "On Education" from 27.07.2007 № 319-III, the Law of RK "On Science" № 407-IV from 18.02.2011, the Law of RK "On Countering Corruption" № 410-V from 18.11.2015, The Labor Code of RK № 414-V LRK from 23.11.2015, the Charter of NAO KARIU, the Regulations on the qualification characteristics of scientific and pedagogical positions of KARIU (SMC P4-20-2020), the Rules for competitive filling of positions of teaching and research staff of KARIU (SMC P4-19-2020).

The competence model of university teaching staff is defined by the Regulations on the qualification characteristics of positions of scientific and pedagogical staff of KARIU, QMS P 4-20-2020, which also reflects the differences between the requirements for teaching staff, occupying positions of different levels of qualification

Information about the structural composition of the departments "Technology of Artificial Intelligence" and "Energy" is given in the information about the organization, and the quantitative and qualitative composition of teachers implementing the program is presented in Table 2.

According to the data presented, the Faculty Personnel Guide and the schedule of classes, given in the self-report, the training of undergraduates on the EP 7M07110-AIU in 2020-2021 academic year was carried out in the second semester 9 teachers (Table 2), including full-time 8 people (88,8%), with a degree 8 (88,8%), in 2021-2022 academic year 10, including full-time 9 (90.0%), with a degree 7 (70.0%).

Table 2 - Quantitative and Qualitative Composition of Teachers, Implementing SP

Name of EP	7M07112-EE	7M07110-AiU	7M07112-EE	7M07110-AiU
Study years.	2020/2021		2021-2022	
Total number of faculty members implementing the program	8	9	11	10
With a degree	7	8	8	7
% of residency	87,5	88,8	72,7	70

The staff involved in the implementation of EP 7M07112-EE in 2020-2021 academic year carried out in the second semester 8 teachers, including full-time 7 people (87.5%), with a degree 7 (87.5%); in 2021-2022 academic year 11, including full-time 10 (90.9%), with a degree 8 (72.7%).

The basic education of teachers corresponds to the profile of the disciplines in the EP.

For example, Associate Professor PhD in "Information Systems" Saparkhojaev N.P. teaches the discipline "Network Technologies", PhD professor of "Informatics, Computer Science and Management" Umbetov U.U. teaches the disciplines "MES-systems" and "Project Management".

The level of competence of EP teachers is determined by the results of the survey among EP students. Thus, the results of the last survey in October 2020 showed that the assessment of student satisfaction with the quality of education in the bachelor's program is 81.25%, in the master's program - 92%.

The department has a professional development plan for faculty.

Currently, there are 3 faculty members of accredited EPs enrolled in doctoral programs, with two more defending their doctoral dissertations in 2019 and 2021.

So, in 2021, according to the submitted certificates, in Toraygyrov University on "Electrical equipment, energy support and automation of energy processes" advanced training courses in the amount of 72 hours teachers Kuntush E.V., Bayasilova Z.A, Druzhinin V.M. In the St. Petersburg Center for Further and Professional Education LANE on the program "Master to create tests in LMS Moodle" took advanced training courses in the amount of 72 hours and received a certificate Druzhinin V.M. and Kuntush E.V. Umbetov U.U. received a certificate for 72 hours courses "Galymnur" on the program "MES-systems" and "Visual programming".

The possibility and equal accessibility of career growth can be traced on the example of the head of the Department of TII Kunaev V.A., who went the way from a student of KarIU, whose Bachelor's degree was completed in 2012, Master's degree in 2014, PhD in 2018. Worked as an engineer since 2014, teacher and senior lecturer from 2018 to 2020, in 2020 he was appointed head of the department.

During the implementation of EP, the specialists-practitioners of the relevant branches of the economy are involved in teaching. During the accreditation period for the EP 7M07112 EE on a permanent basis is taught by V.M. Druzhinin, for 7M07110-AiU - by E.V. Spichak, having experience in industrial activity.

KARIU rules of labor regulations provide for the provision of favorable working conditions for faculty and staff in compliance with the sanitary norms and requirements, providing the necessary technical equipment, access to the library fund and free Internet, as well as addressing social issues of the faculty - discount for employees and their children for training, financial assistance in difficult life situations, etc. The system of incentives for professional and personal development of teachers and staff includes the announcement of gratitude, awarding certificates, bonuses, nomination for the competition "Best Teacher".

To motivate and stimulate employees, formation of the personnel reserve of the university, evaluation of the results of the employees' activities the Regulations on the rating assessment of the activities of teaching staff and employees of NLC KARIU and competitions "Best Department", "Best Faculty", "Best Unit", the link to which on the website does not work. Winners are awarded certificates or cash prizes. There is also a Regulation on the procedure for the contest "Best Teacher of the Month" KARIU JMC P 4-40-2020. However, this document lacks clear measurable evaluation criteria, and nowhere is the procedure for stimulating the use of innovative educational technologies by the teaching staff spelled out.

Since March 2020, in connection with the COVID-19 pandemic, the university switched to a distance learning format using computer and telecommunication technologies. Video conferences on Microsoft Teams and ZOOM platforms are used for conducting online classes in accordance with the approved schedule. Faculty members use LMS Moodle, and AIS Platonus, electronic corporate mail, which forms e-portfolio of the faculty.

The university has adopted a regulation on academic mobility. Forms of academic mobility of teaching staff are trips to partner universities to deliver lectures, classes and consultations, participation in research work on joint topics, participation in professional development programs, internships during sabbaticals, participation in conferences and seminars. Academic mobility of teaching staff is mainly provided through Erasmus+ exchange programs and memorandums with universities of Kazakhstan and foreign universities. For example, over the past 3 years, research internships in foreign universities, were made by the teaching staff of the accredited EP Kuntush E.V., Volokitin A.V.

The decision to invite a foreign teacher or staff member within the framework of academic mobility programs is made by the university's DNI in agreement with the departments. To teach in the accredited programs for two years involved foreign professors Professor Link Campus University (Rome, Italy) A. Figus (2020-2021 academic year), and Professor V.K. Tytyuk (2021-2022 academic year), Professor of Kremenchug National University named after M. Ostrogradsky A.P. Cherny.

Within the framework of international cooperation in scientific research the textbook "Typical questions for evaluation in electrical engineering disciplines" was published in co-authorship with the professor of KNU named after Ostrogradsky A.P. Chernyj and Candidate of Technical Sciences, associate professor of NAO KARIU - G.A. Sivyakova. V.K. Tytyuk takes part in the research work on "Lifelong Learning at KARIU: perspectives and directions".

During the period 2016-2021 the teaching staff of the departments "TII" and "Energy" carried out 6 funded research on the orders of enterprises and 6 initiative research. The last: "Development of an automated control system of energy supply of office buildings of "TemirtauElectroMontazh" LLP in order to improve energy efficiency", the head of the PhD, Associate Professor G.A. Sivyakova (2017-2020) and "Justification of parameters of the technological line for obtaining road-building materials from industrial waste" (jointly, departments "TII" and "TMT"), PhD, Head of the Department "TMT" K.A. Nogaev, responsible executor PhD, Head of the Department "TII" Kunaev V.A. (2020-2021).

At the moment, faculty members of the Department of Energy are participating in the institutional study "Lifelong Learning at KARIU: Prospects and Directions".

There are 2 projects implemented within the framework of the European Union Framework Program "Horizon 2020" ("Increasing energy efficiency of heat consumption systems of public sector facilities and housing stock of urban utilities based on web-technologies for monitoring their temperature regimes and remote management" and "Research of additive technologies in order to introduce a new educational program "3D-engineering" and create a competence center for additive technologies").

The results of research work of the departments are implemented in the educational process as part of the development of elective courses, teaching aids and tutorials. Faculty members publish the results of their research and work in peer-reviewed journals, which are indexed in scientometric databases. For example, Saparkhodjaev N.P. has a Hirsch index of 3

(Scopus), Sivyakova G.A. - 3 (Scopus), Umbetov U.U. - 1. Total for 2020-2022 more than 30 scientific articles and reports were published in periodicals and collected works. During the fall semester 2021-2022 published - 6 articles in the Proceedings of International conferences, 5 articles in scientific journals included in the database Scopus and KKSON.

According to the results of the EEC survey of the teaching staff 100% of respondents are satisfied with the opportunities for professional and personal growth, of which 52.9% chose the answer "very good", the rest "good".

Analytical part

Based on the study and analysis of the submitted materials the EEC notes that the personnel policy conducted at the university is sufficiently documented and objective, allows to provide the implemented educational programs with qualified teachers in accordance with their specifics. All procedures of the personnel policy of the university are transparent, accessible and meet the requirements of the legislation.

The teaching staff meets the qualification requirements. All teachers of accredited EPs in the major disciplines have advanced training.

The educational process is conducted in accordance with the principles of student-centered learning, as evidenced by the high satisfaction of students as revealed by their questionnaire during the EEC visit.

During the analysis of the data presented and during the interviewing of the teaching staff it was found that the university provides opportunities for career growth and professional development of the teaching staff, including young teachers, who have the opportunity to study in a doctoral program on the profile. The university promotes various forms of professional development of teachers, including those abroad.

Qualified industrial specialists with practical competencies are engaged to teach the EP disciplines.

The university has a system of staff motivation and incentives, built in the form of a rating system, which allows to stimulate teaching and learning, research and other activities of the teaching staff. However, some normative documents do not have measurable criteria and require revision, especially in terms of stimulating the use of innovative educational technologies.

The results of the EEC members' visits to the online classes of teachers confirmed their high professional skills and ability to use ICT and technical training tools. The availability of the university's own educational platform AIS Platonus and LMS Moodle, the organization of training of teaching staff contribute to the widespread use of information and communication technologies and software in the educational process.

The EEC members note that the university and, in particular, the management of EP in its activities carry out cooperation with leading foreign universities and foreign scientists, inviting them to give lectures on the disciplines of the accredited EP. However, in this area of activity modern ICTs are little used, which contribute to greater efficiency in this area of activity.

Faculty members of the departments that provide accredited EPs participate in the implementation of projects commissioned by enterprises and scientific applied initiative projects, the results of which are used in production and in the educational process.

Strengths/best practices in OP 7M07110 Automation and Control and 7M07112 Electroenergetics:

At the university as a whole and at the level of EP management the activities that ensure the fulfillment of the requirements of the standard are set at the proper level. It is not possible to highlight any particular strengths.

Recommendations for 7M07110 Automation and Control and 7M07112 Electroenergetics:

1. *The university management to develop additional mechanisms to motivate the teaching staff to use innovative educational technologies by July 2022.*

VEC's conclusions on the criteria:

According to the standard "Information Management and Reporting" educational programs 7M07110 Automation and Management and 7M07112 Electroenergetics have 8 satisfactory positions and 1 suggests improvement.

6.8 Standard "Educational Resources and Support Systems for Graduate Students

- ✓ The PA must ensure a sufficient number of educational resources and support services for students to achieve the goal of the EP
- ✓ EI must demonstrate sufficient material and technical resources and infrastructure, taking into account the needs of different groups of students in the OP (adults, working, foreign students, as well as students with disabilities)
- ✓ EP management must demonstrate that procedures are in place to support different groups of learners, including information and counseling
 - ✓ *OP management must demonstrate the relevance of information resources to the specifics of the OP, which include:*
 - ✓ technological support for students and faculty (e.g., online learning, modeling, databases, data analysis software)
- ✓ library resources, including a fund of educational, methodical and scientific literature in general education, basic and specialized disciplines in paper and electronic media, periodicals, access to scientific databases
 - ✓ examination of the results of research, graduate theses, dissertations for plagiarism
 - ✓ access to educational Internet resources
 - ✓ functioning of WI-FI on the territory of the educational organization
- ✓ The GS demonstrates planning to provide educational equipment and software, similar to those used in the relevant sectors of the economy

Evidence

The university consists of 3 faculties and the Technical and Economic College, 12 departments and 4 scientific units. The teaching staff of the university is about 300 people, including 12 PhDs, about 70 PhDs and doctoral candidates.

The university has established the necessary structural elements to support graduate students in fulfilling their educational, personal and career needs: DAP, DNIiMS, OR, scientific library, dormitories, canteen and cafeterias, medical center, gyms. The Department of Physical Education and Sports uses a program of therapeutic physical education for undergraduates of the special medical group.

The total area of teaching and laboratory facilities of the departments "Energy" and "TII" is more than 750 m², the department has digital projectors with projection screens (4 pcs) to demonstrate presentations and video materials and interactive whiteboards (2 pcs). The university has 9 multimedia classrooms.

Specialized laboratories of the departments are equipped with laboratory benches and equipment necessary to implement the goals of the EP:

1. Laboratory "Technical means of automation" - room H-101
2. Laboratory "Automated electric drive" - lecture room H-103
3. Laboratory "Traditional and alternative energy" - classroom H-107.

The departments have four computer labs of their own, with 63 computers installed.

The premises comply with current sanitary and epidemiological requirements for the conditions of their operation and meet the requirements of fire safety standards and regulations.

Equipping the laboratories and classrooms of the department is carried out in accordance with the procedures of the QMS StO II.8-04.01-2020 Procurement Management.

The departments use laboratory and research booths. For example, to study the Internet of Things (IoT, Internet of Things) and the Industrial Internet of Things (IIoT, Industrial Internet of Things), to study power supply systems for civil buildings, an interactive stand "Power Supply of a Smart House. Master's students study technologies of "big data" (big data), artificial intelligence, systems with phisiologic, etc.

Interactive simulator "Circuit Diagram of Wind Power Plant" and solar power plant with solar panels "Jinko", training simulators for programming industrial controllers based on equipment of FESTO and SIEMENS companies, for studying the course "Networking Technologies" - training simulators "IT-Ølem".

On the basis of the Department of "Energy" a training center of the university was established to conduct courses for retraining and advanced training of personnel engaged in energy auditing, energy saving and energy efficiency expertise.

Computers are provided with access to the Internet and the local network of the University. The software includes in addition to the standard 7 specialized professional software packages: Matlab (The MathWorks); Compass-3D (Ascon); software complex "Modeling in technical devices"; Electronics Workbench (Interactive Image Technologies); Packet Tracer (CISCO); MULTISIM (NI); TIA Portale (Siemens); TRACE MODE (AdAstra Research Group).

Production bases for professional practice of undergraduates are large corporations JSC "ArcelorMittal Temirtau", LLP KazPromAvtomatika, JSC "Kazchrome", the regional enterprise LLP "Temirtau electrometallurgical plant".

The university library is located in the main building of the university. The total area is 1,219 square meters. The library has a subscription, a reading room with 44 seats, a periodicals room and a book repository, as well as a computerized reading room with computers included in the local network with Internet access. There is an opportunity to use the electronic resources of RMEB, international information resources such as Scopus, Web of Science (Thomson Reuters). The site has access to reviews of scientific articles from periodicals issued by the university library.

The general fund of the library in traditional and electronic media includes scientific, educational and teaching literature. Acquisition of necessary literature is carried out according to the requests of departments and faculties according to the price lists of publishers.

The library has a fund of reference and reference and bibliographic literature, periodicals, including socio-political, scientific and industrial newspapers and magazines, relevant to the profile of the university.

The university library has alphabetical, systematic, alphabetical-service, and electronic catalogs, and uses a specialized library program CABIS.

The total book fund of the library as of 01.01.2022 is 292,598 copies. Of these in the state language - 113,918 copies; in English - 1,265 copies; textbooks in electronic media make up 20.3% of the total fund - 67,423 copies.

Table 3 - Library fund for the program "7M07110-Automation and Control

Indicator name	Number of copies total	Kaz	Russ	English
Total	2191	1346	480	365
Study	2114	1346	403	365
Scientific	77		77	

Table 4 - Library fund for PG "7M07112 - Electroenergetics"

Indicator name	Number of copies total	Kaz	Russ	English
Total	1071	770	271	30
Study	1057	1346	257	30
Scientific	14	14	14	

The provision of digitized educational literature for the "Electroenergetics" program is 88% (there are electronic educational and methodological manuals for 23 of 26 disciplines), "Automation and Control" program - 69% (for 18 of 26 disciplines).

The plagiarism examination of research reports, graduate theses and dissertations is performed using the Russian company Antiplagiarism.VUZ system.

The scientific journal "Bulletin of Karaganda Industrial University" is published in KarIU.

In KARIU operates learning management systems Platonus and Moodle. Students are provided with syllabuses and eLMs on relevant disciplines, teaching aids. Class schedules are posted on the website of the University. There, in the section "Applicant" there is information on the admission procedure, including for foreign nationals, a guidebook is available. The university has two dormitories for 890 people.

Individual educational trajectory is determined by the choice of elective disciplines within the current EP. Selected elective courses are recorded in AIS Platonus and reflected in the IPRM students.

The university has opened Cisco Networking Academy, each student of the Academy is given an individual identifier and password to access the testing server of Cisco Systems Inc. and to work with training materials. Students are awarded the Cisco Networking Academy certificate. There is an interactive computer class "Certified Telephone Networking Equipment - Information Bank" SOTSBI, which allows master students to obtain additional knowledge on networking technologies.

Briefing and admission of students and faculty in the laboratory recorded in the safety logs.

The premises of the university comply with current sanitary and epidemiological requirements for the conditions of their operation.

According to the results of the questioning of undergraduates conducted by the EEC, are satisfied with the existing educational resources of the university - 100%; classrooms, classrooms for large groups - 100%; restrooms for undergraduates - 92.3%; computer classes and Internet resources - 100% and 100%; available research laboratories - 100%; dormitory - 84.6%, the content and information content of the website - 100%; library equipment and sufficient scientific, educational and methodical literature fund - 100.0%, the quality of library resources - 100%, the level of accessibility - 100%.

Analytical part

Having analyzed the submitted normative documents of the university, the results of interviews and questionnaires of the teaching staff and students, the commission concluded that the university and the management of the OP is focused on organizing the necessary educational, informational environment and leisure time for students.

The departments that provide accredited EPs demonstrate high material and technical support of the programs. Lecture halls and training laboratories are equipped with interactive whiteboards, projectors, laptops, PCs connected to the local network and have Internet access,

free Wi-Fi access is provided. Laboratories are equipped with modern equipment of famous brands. Laboratory equipment and software are used for scientific research. The results of scientific work of teaching staff and students are used in the educational process.

The leadership of the university and the OP have demonstrated the ability to seamlessly transition to distance learning, including in the online format.

Also noted is the good equipment and work of the scientific library of KARIU. The library has a significant fund of educational, methodical and scientific literature on general, basic and specialized disciplines in paper and electronic media, periodicals, meeting the needs of students and faculty, there is access to scientific databases.

The work on the digitization of the fund is being carried out, the availability of electronic publications is 88% for the EP EE and 69% for the AiU. User access to information resources of the library is realized through the scientific library website. Modern automated library information system ABIS is used. In the library there are 44 seats for users, Wi-Fi, electronic lounges with Internet access and subscription databases.

Information support of educational and scientific and educational activities with access to full-text electronic resources of educational and scientific importance, which satisfies the needs of students and teaching staff, is carried out at a sufficiently good level. In KARIU operates examination of graduation works, including plagiarism, free access to Internet resources and WI-FI throughout the territory.

The university has created conditions to promote students on an individual learning path, support the special needs of undergraduates and faculty of various groups, including those with disabilities, as well as the infrastructure to ensure safety.

In general, KARIU provides a sufficient number of educational resources, their replenishment and updating, support for students, including those with special needs, including their information. Management of EP provides technological support for students, availability and sufficiency of the literary fund, Internet resources, WI-FI.

Strengths/best practices in OP 7M07110 Automation and Control and 7M07112 Electroenergetics:

At the university as a whole and at the level of EP management the activities that ensure the fulfillment of the requirements of the standard are set at the proper level. It is not possible to highlight any particular strengths.

Recommendations for 7M07110 Automation and Control and 7M07112 Electroenergetics:

No recommendations for this standard

VEC's conclusions on the criteria:

According to the standard "Information Management and Reporting" educational programs 7M07110 Automation and Management and 7M07112 Electroenergetics have 9 satisfactory positions.

[6.9 The Public Information Standard](#)

- ✓ The PA must publish reliable, objective, up-to-date information about the educational program and its specifics, which must include:
- expected learning outcomes of the implemented educational program
 - qualifications and/or qualifications that will be awarded upon completion of the educational program

- teaching and learning approaches, as well as the system (procedures, methods, and forms) of evaluation
- Information about passing grades and learning opportunities available to students
- information on employment opportunities for graduates
- The management of the OP should provide for a variety of ways to disseminate information, including the media, information networks to inform the general public and interested parties
- Public awareness should include support and explanation of national development programs of the country and the system of higher and postgraduate education
- The educational institution must demonstrate the reflection on the web resource of information describing it as a whole and in the context of educational programs
- An important factor is the availability of adequate and objective information about the teaching staff
- An important factor is informing the public about cooperation and interaction with partners in the OP

Evidence

The main official source of information of the university is the website, the work of which is based on the principles of providing relevant and accurate information on all areas of the university. The site operates in three languages: Kazakh, Russian, English. The principles of construction and structure of information materials placed on the official information website of the university are determined by an internal document of the JMC P 4-27-1-2021 "Regulations on the official website".

The site contains information on the following sections: representation of the university in Kazakhstan and abroad; regulatory documents of the university; educational and methodological support; publication of information about the structure of the university and its activities; providing educational and methodological and regulatory information for graduate students, faculty and staff of the university; support for communication with other scientific and educational sites and the educational portal of the university.

In general, the site contains relevant and objective information.

The target audiences of the site are applicants, students, undergraduates, doctoral students, the scientific community, faculty, staff, governing bodies, the media, the business community, and the general public.

The website section "Development Plans, Activity Reports" contains plans and reports of the university, structural divisions, which contain objective information about KARIU, including reports on the audit of financial activities.

Informing the general public is also carried out using the official accounts of KarIU in social networks, in the media, Wikipedia. The frequency of informing the public is determined by the "Regulation on Informing the Public" of the JMC P-4-27-20.

Up-to-date information about EPs includes the implemented EPs, with an indication of the expected learning outcomes; the section "Education" provides information about the implemented EPs and the awarded qualification at the end of the EP, information about teaching, training, knowledge assessment system, information about passing grades and learning opportunities provided to students, information about the employment opportunities for graduates.

Tools for informing the public are also the Republican magazine "Bulletin of Karaganda State Industrial University", printed materials (brochures, booklets, newsletters, etc.); reports; posters, stands; letters; feature articles in the media; press releases in the media; advertising in the media; surveys; "Open Door" days; tours; seminars, conferences; exhibitions, fairs, exhibitions; media interviews, radio or television; presentations; personal contacts with interested parties, etc.

The website of KARIU highlights the National Program "Rukhani Zhangyru", the anti-corruption strategy of the Republic of Kazakhstan for 2015-2025, presents legislative acts on combating corruption, etc. There are information blocks: "Rector's Blog", "News", "Conferences", "Mission of the University". Information about international cooperation of the university in the field of science and education with the leading universities of Kazakhstan, CIS countries and the world, with which cooperation agreements have been signed, is presented. A separate section is devoted to QMS issues.

For career guidance the university carries out publications in regional and city newspapers "Evening Newspaper", "Industrial Karaganda", "Egemen Kazakhstan", "Ortalyk Kazakstan", "Kazakhstanskaya Pravda". Articles about KARIU are published. For example, the newspaper "Kazakhstanskaya Pravda" published an article dated June 2, 2021 "A new stage in the development of universities.

The results of the external evaluation are published on the website: in the sections on [programs that have undergone specialized accreditation](#) and the results [of institutional accreditation](#).

Analytical part

According to the results of the analysis of the structure and content of the website, pages in social networks, university newspaper, report materials of the departments of "Energy" and "AiU" KARIU, the EEC notes that the university demonstrates a policy of objectivity, transparency, openness, relevance in the field of informing the public and participants in the educational process.

At all levels of information dissemination there is an explanation of national development programs of the country and the system of higher and postgraduate education. Information about the grading system, passing grades, training and methodological materials is available on educational platforms.

The management of EP and SP uses the media and social networks to disseminate information. On the page of the departments that provide the accredited EP, the official website contains all the necessary information for the participants of the educational process on EP 7M07110 Automation and Management and 7M07112 Electroenergetics: information about qualifications, learning outcomes, information about employment, full information about the teaching staff.

The University website publishes information about the activities of the university, including financial statements. The university and the management of accredited educational programs take part in national rankings, information about which is also posted on the KARIU website.

Strengths/best practices in OP 7M07110 Automation and Control and 7M07112 Electroenergetics:

At the university as a whole and at the level of EP management the activities that ensure the fulfillment of the requirements of the standard are set at the proper level. It is not possible to highlight any particular strengths.

Recommendations for 7M07110 Automation and Control and 7M07112 Electroenergetics:

No recommendations for this standard

VEC's conclusions on the criteria:

According to the standard "Information Management and Reporting" educational programs 7M07110 Automation and Management and 7M07112 Electroenergetics have 10 satisfactory positions.

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

For OP 7M07110 Automation and Control and 7M07112 Electroenergetics

According to the Educational Program Management standard:

No strengths noted

According to the Information Management and Reporting Standard:

No strengths noted

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

No strengths noted

According to the standard "Continuous monitoring and periodic evaluation of educational programs:

No strengths noted

On the Student-Centered Learning, Teaching, and Assessment Standard:

No strengths noted

According to the Learner Standard:

2. The EP management must demonstrate a willingness to provide students with internships, to promote the employment of graduates, and to maintain communication with them

According to the "Faculty" standard:

No strengths noted

According to the Educational Resources and Support Systems for Graduate Students standard:

No strengths noted

According to the Public Information Standard:

No strengths noted

(VIII) REVIEW OF QUALITY IMPROVEMENT RECOMMENDATIONS FOR EACH STANDARD

For EP 7M07110 Automation and Control and 7M07112 Electroenergetics

According to the Educational Program Management standard:

1. To justify the uniqueness and advantages of accredited *EPs compared* to similar EPs in the region and the republic and place on the university website **by the end of the 2021/22 academic year.**

2. *The management of the university* to fix in the regulatory documents the separation of responsibilities within the OP and those responsible for the business processes **by July 2022.**

3. *University management* to develop and approve in the regulatory documents the mechanism for innovation management (planning, monitoring, accounting, controlling and stimulating the development and use) in the OP **by the beginning of 2022/23 academic year.**

According to the Information Management and Reporting Standard:

1. *To the management of the EP* to describe the mechanism for managing information to ensure its quality and reliability in the QMS regulation of the relevant department **by the beginning of the 2022/23 academic year.**

2. *Management of the EP* to ensure the systematic content of web courses on the portal moodle educational and methodological content in accordance with the requirements established in the university and provide access to it to students until **the beginning of the 2022/23 academic year.**

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

There are no recommendations for this standard.

According to the standard "Continuous monitoring and periodic evaluation of educational programs:

1. In order to improve the quality of teaching, *the management of the OP* to annually monitor the applied innovative methods of teaching core disciplines **since September 2022.**

On the Student-Centered Learning, Teaching, and Assessment Standard:

1. *The OP management* to form a policy of student-centered learning with an analysis of the main differences from the traditional methods and practices of teaching **by January 2023.**

2. *The OP management* to develop a plan to hold on a regular basis methodological conferences / seminars on modern methods of teaching and assessment of learning outcomes **since September 2022.**

3. *The OP management* to prepare a plan for the development and implementation in the educational process of their own research faculty in the field of methodology of teaching major disciplines **by the beginning of the 2022/23 academic year.**

4. *The management of the university* to develop a mechanism to stimulate the activities of the teaching staff to conduct research in the field of methodology of teaching major disciplines **by the beginning of the 2022/23 academic year.**

According to the Learner Standard:

1. *Management of the OP* to develop an action plan to further develop academic mobility of students, expanding the geography of partner universities, both within the country and abroad, **by January 2023.**

2. *OP management* to develop measures to increase the number of students, taking into account the forecast for the allocated grants, as well as to attract foreign undergraduates **by the beginning of the academic year 2022/23.**

3. *OP management* to develop a special adaptation and support program for newcomers and international students **by the end of the 2021/22 academic year.**

According to the "Faculty" standard:

2. *The university management to develop additional mechanisms to motivate the teaching staff to use innovative educational technologies by July 2022.*

According to the Educational Resources and Support Systems for Graduate Students standard:

There are no recommendations for this standard.

According to the Public Information Standard:

There are no recommendations for this standard.

The results of the assessment of the parameters of the specialized OP profile:

Strong position - 1, satisfactory - 92, requiring improvement - 10



**(IX) REVIEW OF RECOMMENDATIONS FOR THE DEVELOPMENT OF THE
EDUCATIONAL ORGANIZATION**



(X) RECOMMENDATION TO THE ACCREDITATION COUNCIL

The members of the EEC came to the unanimous opinion that OP 7M07110 Automation and Control and 7M07112 Electroenergetics are recommended for accreditation for a period of 5 years.



(XI) Appendix 1. Evaluation Table "Conclusion of the External Expert Commission"

For EP 7M07110 Automation and Control and 7M07112 Electroenergetics

No. npon	№ {pos (192, 210)}	Evaluation Criteria	The position of the educational organization			
			Strong	Satisfactory	Assumes improvement	Unsatisfactory
Standard "Educational Program Management"						
1	1.	An institution of higher and/or postgraduate education must have a published quality assurance policy that reflects the relationship between research, teaching, and learning		+		
2	2.	The organization of higher and (or) postgraduate education must demonstrate the development of a culture of quality assurance, including in the context of the OP		+		
3	3.	A commitment to quality assurance should apply to all activities performed by contractors and partners (outsourcing), including joint/double-degree education and academic mobility		+		
4	4.	EP management demonstrates transparency in the development plan for the EP, containing the timing of the beginning of implementation, based on an analysis of its functioning, the real positioning of the EP and the orientation of its activities to meet the needs of the state, employers, students and other stakeholders		+		
5	5.	EP management demonstrates the existence of mechanisms for the formation and regular review of the EP development plan and monitoring its implementation, assessment of the achievement of learning objectives, compliance with the needs of students, employers and society, making decisions aimed at continuous improvement of EP		+		
6	6.	Management of the OP should involve representatives of stakeholder groups, including employers, students and faculty in the formation of the OP development plan		+		
7	7.	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			+	
8	8.	The organization of higher and (or) postgraduate education must demonstrate a clear definition of those responsible for business processes within the EP, an unambiguous distribution of personnel duties, delineation of functions of collegial bodies			+	
9	9.	The management of the EP must provide evidence of the transparency of the educational program management system		+		
10	10.	Management of the OP must demonstrate the existence of an internal quality assurance system for the OP, including its design, management and monitoring, their improvement, decision-making based on facts		+		
11	11.	The management of the OP must implement risk management, including within the OP undergoing initial accreditation, as well as demonstrate a system of measures to reduce the degree of risk.		+		
12	12.	Management of the OP should ensure the participation of representatives of employers, faculty, students and other stakeholders in the collegial management bodies of the educational program, as well as their representativeness in decision-making on the management of the educational program		+		

13	13.	The PA must demonstrate the management of innovation within the OP, including the analysis and implementation of innovative proposals			+	
14	14.	EP management must demonstrate evidence of willingness to be open and accessible to students, faculty, employers, and other stakeholders			+	
15	15.	EP management must be trained in educational management programs			+	
Total by standard					12	3
Information Management and Reporting Standard						
16	1.	The PA must demonstrate that it has a system for collecting, analyzing and managing information through the use of modern information and communication technologies and software, and that it uses a variety of methods to collect and analyze information in the context of the OP			+	
17	2.	OE management must demonstrate a mechanism for the systematic use of processed, relevant information to improve the internal quality assurance system				+
18	3.	Management of the OP must demonstrate fact-based decision-making			+	
19	4.	The EP should provide for a system of regular reporting, reflecting all levels of the structure, including an assessment of the effectiveness and efficiency of the activities of units and departments, scientific research			+	
20	5.	The GS should establish the frequency, forms and methods of evaluation of management of the OP, the activities of collegial bodies and structural divisions, senior management, implementation of research projects			+	
21	6.	The GS must demonstrate the definition of procedures and ensuring the protection of information, including the identification of those responsible for the reliability and timeliness of the analysis of information and the provision of data			+	
22	7.	An important factor is the presence of mechanisms to involve students, employees and faculty in the process of collecting and analyzing information, as well as making decisions based on them			+	
23	8.	EP management must demonstrate that there is a mechanism for communication with students, employees and other stakeholders, as well as mechanisms for conflict resolution			+	
24	9.	The GS must demonstrate the existence of mechanisms to measure the degree of satisfaction of the needs of the faculty, staff and students in the EP			+	
25	10.	The PA should provide for an assessment of the effectiveness and efficiency of activities, including in the context of the OP			+	
		<i>The information to be collected and analyzed in the OP must take into account:</i>				
26	11.	key performance indicators			+	
27	12.	Dynamics of the contingent of students in terms of forms and types			+	
28	13.	grade level, achievements of undergraduates, and expulsion			+	
29	14.	student satisfaction with the implementation of the program and the quality of education at the university			+	
30	15.	accessibility of educational resources and support systems for students				+
31	16.	PA must confirm the implementation of procedures for processing personal data of students, employees and faculty on the basis of their documentary consent			+	
Total by standard					14	2
Standard "Development and approval of the educational program						
32	1.	The PA must define and document procedures for developing PAs and their approval at the institutional level			+	
33	2.	The management of the EP must ensure that the content of the EP is consistent with the established objectives, including the intended learning outcomes			+	

34	3.	Management of EP must demonstrate that there are mechanisms to review the content and structure of the EP, taking into account changes in the labor market, employers' requirements and social demands of society		+		
35	4.	EP management must ensure the availability of developed models of graduates, describing the learning outcomes and personal qualities		+		
36	5.	Management of the OP must demonstrate an external examination of the content of the OP and the planned results of its implementation		+		
37	6.	The qualification awarded upon completion of the OP must be clearly defined and meet the defined level of the NSC and QF-EHEA		+		
38	7.	Management of the EP should determine the impact of disciplines and professional practices on the formation of learning outcomes		+		
39	8.	An important factor is the possibility of preparing students for professional certification		+		
40	9.	The management of the EP must provide evidence of the participation of students, faculty and other stakeholders in the development of EP, ensuring its quality		+		
41	10.	The management of the EP should ensure that the content of academic disciplines and planned results correspond to the level of training (bachelor's, master's, doctoral degree)		+		
42	11.	The structure of the EP should provide for various activities to ensure that students achieve the planned learning outcomes		+		
43	12.	An important factor is the correspondence of the content of SP and learning outcomes of SPs implemented by organizations of higher and (or) postgraduate education in the EHEA		+		
Total by standard				12		
Standard "Continuous Monitoring and Periodic Evaluation of Educational Programs"						
44	1.	The GS must define mechanisms for monitoring and periodic assessment of the OP to ensure the achievement of the goal and meet the needs of students, society, and to show the focus of the mechanisms for continuous improvement of the OP		+		
<i>Monitoring and periodic evaluation of the OP should include:</i>						
45	2.	The content of the program in the light of the latest achievements of science in a particular discipline to ensure the relevance of the taught discipline		+		
46	3.	changes in the needs of society and the professional environment		+		
47	4.	the workload, grades and graduation rates of students		+		
48	5.	the effectiveness of evaluation procedures for students		+		
49	6.	Expectations, needs, and satisfaction of the students with the EP training		+		
50	7.	educational environment and support services, and their compliance with the goals of the OP		+		
51	8.	The management of the OP must demonstrate a systematic approach to monitoring and periodic assessment of the quality of the OP		+		
52	9.	PA, PA management should determine a mechanism for informing all stakeholders of any actions planned or taken with respect to the PA		+		
53	10.	All changes made to the OP must be published		+		
Total by standard				10		
Student-Centered Learning, Teaching, and Assessment Standard						
54	1.	The EP management must ensure respect and attention to different groups of students and their needs, provide them with flexible learning paths		+		
55	2.	The EP guidelines should provide for the use of various forms and methods of teaching and learning		+		
56	3.	An important factor is the availability of our own research in the field of teaching methodology of academic disciplines of the OP			+	

57	4.	EP management must demonstrate that there are feedback mechanisms in place for the use of different teaching methodologies and assessment of learning outcomes		+		
58	5.	EP leadership must demonstrate mechanisms to support learner autonomy while being guided and assisted by a faculty member		+		
59	6.	EP management must demonstrate that there is a procedure for responding to student complaints		+		
60	7.	The PA must ensure consistency, transparency and objectivity of the mechanism for assessing learning outcomes for each OP, including appeal		+		
61	8.	The PA must ensure that the procedures for assessing the learning outcomes of students in the OP planned results and objectives of the program, the publication of criteria and methods of assessment in advance		+		
62	9.	The GS must define mechanisms to ensure that each graduate achieves the learning outcomes and ensure the completeness of their formation		+		
63	10.	Evaluators must be proficient in modern methods of assessing learning outcomes and receive regular professional development in this area		+		
Total by standard				9	1	
The Learner Standard						
64	1.	The PA must demonstrate the existence of a policy for the formation of the contingent of students in the context of the OP, to ensure the transparency and publication of its procedures governing the life cycle of students (from admission to completion)		+		
		<i>The EP management should determine the order of formation of the contingent of students on the basis of:</i>				
65	2.	minimum requirements for applicants		+		
66	3.	maximum group size for seminars, workshops, labs, and studios		+		
67	4.	forecasting the number of state grants			+	
68	5.	Analysis of available material and technical, information resources, human resources		+		
69	6.	analysis of potential social conditions for undergraduates, including the provision of places in the dormitory		+		
70	7.	EP administrators must demonstrate a willingness to conduct special adaptation and support programs for newcomers and international students			+	
71	8.	The GS must demonstrate compliance with the Lisbon Recognition Convention, the existence of a mechanism for the recognition of the results of academic mobility of students, as well as the results of additional, formal and non-formal learning		+		
72	9.	The GS should collaborate with other educational organizations and the national centers of the ENIC/NARIC "European Network of National Academic Recognition and Mobility Information Centers/National Academic Recognition Information Centers" to ensure comparable recognition of qualifications		+		
73	10.	The PA should provide opportunities for external and internal mobility of EP students, as well as the willingness to assist them in obtaining external grants for training			+	
74	11.	The EP management must demonstrate a willingness to provide students with internships, to facilitate the employment of graduates, and to maintain communication with them	+			
75	12.	The GS should provide for the possibility of providing graduates of the EP with documents confirming the qualifications obtained, including the learning outcomes achieved, as well as the context, content and status of the education received and the certificate of its completion		+		
Total by standard			1	8	3	
The "Faculty" standard						
76	1.	PA should have an objective and transparent personnel policy, including in the context of OP, including recruitment, professional development and staff development, ensuring professional competence of all staff		+		

77	2.	The PA must demonstrate that the staff capacity of the teaching staff is appropriate to the specifics of the program		+		
78	3.	The management of the OP must demonstrate a sense of responsibility for their employees and ensure a favorable working environment for them		+		
79	4.	EP leadership must demonstrate a change in the role of the instructor in relation to the transition to student-centered learning		+		
80	5.	The GS should determine the contribution of the teaching staff to the implementation of the GS development strategy, and other strategic documents		+		
81	6.	The GS must provide opportunities for career and professional development of the teaching staff		+		
82	7.	The EP management must demonstrate a willingness to involve practitioners from the relevant industries in teaching		+		
83	8.	The GS must demonstrate motivation for professional and personal development of EP teachers, including encouragement for the integration of research and education, the use of innovative teaching methods			+	
84	9.	An important factor is the willingness to develop academic mobility within the OP, attracting the best foreign and domestic teachers		+		
Total by standard				8	1	
Educational Resources and Support Systems for Graduate Students' Standard						
85	1.	The PA must ensure a sufficient number of educational resources and support services for students to achieve the goal of the EP		+		
86	2.	EI must demonstrate sufficient material and technical resources and infrastructure, taking into account the needs of different groups of students in the OP (adults, working, foreign students, as well as students with disabilities)		+		
87	3.	EP management must demonstrate that procedures are in place to support different groups of learners, including information and counseling		+		
		<i>OP management must demonstrate the relevance of information resources to the specifics of the OP, which include:</i>				
88	4.	technological support for students and faculty (e.g., online learning, modeling, databases, data analysis software)		+		
89	5.	library resources, including a fund of educational, methodical and scientific literature in general education, basic and specialized disciplines in paper and electronic media, periodicals, access to scientific databases		+		
90	6.	examination of the results of research, graduate works, dissertations for plagiarism		+		
91	7.	access to educational Internet resources		+		
92	8.	functioning of WI-FI on the territory of the educational organization		+		
93	9.	The GS demonstrates planning to provide educational equipment and software, similar to those used in the relevant sectors of the economy		+		
Total by standard				9		
The "Public Information" standard						
		<i>The PA must publish reliable, objective, up-to-date information about the educational program and its specifics, which must include:</i>				
94	1.	expected learning outcomes of the implemented educational program		+		
95	2.	qualifications and/or qualifications that will be awarded upon completion of the educational program		+		
96	3.	teaching and learning approaches, as well as the system (procedures, methods, and forms) of evaluation		+		
97	4.	Information about passing grades and learning opportunities available to students		+		
98	5.	information on employment opportunities for graduates		+		

99	6.	The management of the OP should provide for a variety of ways to disseminate information, including the media, information networks to inform the general public and interested parties		+		
100	7.	Public awareness should include support and explanation of national development programs of the country and the system of higher and postgraduate education		+		
101	8.	The educational institution must demonstrate the reflection on the web resource of information describing it as a whole and in the context of educational programs		+		
102	9.	An important factor is the availability of adequate and objective information about the PP PP PP		+		
103	10.	An important factor is informing the public about cooperation and interaction with partners in the OP		+		
Total by standard				10		
TOTAL			1	92	10	

