«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 on the assessment of compliance with the requirements of the standards of specialized accreditation of joint degree programs 6B07123 Systems Engineering (joint degree program, double degree with the University of Applied Sciences Anhalt), 7M07106 Instrumentation Engineering (joint degree program with Tomsk Polytechnic University);
NJSC "Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev"
during the period from March 11-13, 2024

INDEPENDENT AGENCY FOR ACCREDITATION AND RATING (IAAR)
External expert commission

Addressed to
Accreditation
IAAR Council

АККРЕДИТТЕУ ЖӘНЕ РЕЙТИНГТІҢ ТӘУЕЛСІЗ АГЕНТТІГІ
НЕЗАВИСИМОЕ АГЕНТСТВО АККРЕДИТАЦИИ И РЕЙТИНГА
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during the period from March 11-13, 2024

Almaty **"13" March 2024**

CONTENTS

(I) LIST OF SYMBOLS AND ABBREVIATIONS

NJSC	Non-profit joint stock company
AUPET	NJSC "Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev"
RK	The Republic of Kazakhstan
IAAR	INDEPENDENT AGENCY FOR ACCREDITATION AND RATING
EEC	External expert commission
AC	Academic committee
AMS	Administrative and management staff
BD	Basic disciplines
SD	Specialised disciplines
SCES	State compulsory education standard
ICT	Information and communication technologies
IS	Information Systems
ISP	Individual study plan
CT	Comprehensive testing
CBLT	Credit-based learning technology
MSHERK	Ministry of Science and Higher Education of the Republic of Kazakhstan
MEP	Modular degree programmes
RDW	Research and development work
SRW	Student research work
CC	Compulsory component
GED	General education disciplines
EP	Degree program
Academic staff	Academic staff
RK	The Republic of Kazakhstan
LO	Learning outcomes
WC	Working curriculum
SIW	Student's independent work

(II) INTRODUCTION

In accordance with Order No. 32-24- (main activity) dated January 31, 2024, of the General Director of the NU "Independent Accreditation and Rating Agency", from March 11 to March 13, 2024, an external expert commission assessed the conformity of degree programs: 6B07123 Systems engineering (joint degree program, double degree with the Anhalt University of Applied Sciences), 7M07106 Instrumentation (joint degree program with Tomsk Polytechnic University). They were developed and implemented by AUPET Almaty in compliance with the standards and guidelines for specialized accreditation of higher and (or) postgraduate education.

The report of the external expert commission contains an assessment of degree programs 6B07123 Systems Engineering (joint degree program, double degree with the Anhalt University of Applied Sciences), 7M07106 Instrumentation (joint degree program with Tomsk Polytechnic University) according to the criteria of standards and IAAR guidelines and recommendations of the external expert commission for further improvement of degree programs and their profile parameters.

Composition of the IAAR External Expert Committee:

Chairman of the IAAR External Expert Committee - Popovs Anatolijs PhD, Professor, Institute of Solid State Physics, University of Latvia (Riga, Latvia)

IAAR Expert - Markovsky Vadim Pavlovich PhD, Professor, Toraigyrov University (Pavlodar, Republic of Kazakhstan);

IAAR Expert, Employer - Gulmira Zeinulovna Jagiparova Head of Commercial Block, CT Cloud lab (Almaty, Republic of Kazakhstan)

IAAR Expert, Student - Adelina Adelevna Rakisheva, 2nd year PhD student, D. Serikbayev East Kazakhstan Technical University (Ust-Kamenogorsk, Republic of Kazakhstan)

IAAR Expert - Alexandra Potapenko, PhD student, Toraigyrov University (Pavlodar, Republic of Kazakhstan);

IAAR Expert, Employer - Burumbaev Azamat Serikovich Chamber of Entrepreneurs "Atameken" of Aktobe region (Aktobe);

IAAR Expert, - Darmen Gabitov, 1st year Master's student, Nazarbayev University (Astana, Republic of Kazakhstan)

IAAR Expert – Askar Bagdatovich Kasymov, PhD, Acting Associate Professor, Shakarim University (Semey, Republic of Kazakhstan)

IAAR expert, student – Mukhamedzhan Alisher Sabyrzhan uly, 3rd year student, L.N. Gumilyov ENU (Astana, Kazakhstan),

IAAR expert – Laura Ilyasovna Baitelesova, Candidate of Chemical Sciences, Associate Professor, West Kazakhstan Innovation and Technology University (Uralsk, Republic of Kazakhstan)

IAAR expert – Fartunova Maria Atanasova, Associate Professor, PhD, St. John of Rilski University of Mining and Geology (Sofia, Bulgaria)

IAAR expert, student - Oserbatov Raul Batbairuly, 4th year student at East Kazakhstan Technical University named after Serikbayev (Ust-Kamenogorsk, Republic of Kazakhstan).

IAAR expert – Nazgul Bolatovna Kalieva, PhD, Associate Professor, Al-Farabi Kazakh National University (Almaty, Republic of Kazakhstan)

IAAR expert, student – Gulnaz Zhairbaeva, 1st year doctoral student, Gumilyov Eurasian National University (Astana, Republic of Kazakhstan)

IAAR Expert – Turtkaraeva Gulnar Bayanovna, Candidate of Pedagogical Sciences, Kokshetau University named after Valikhanov, IAAR Expert I category;

IAAR expert - Tamyarov Andrey Valerievich, Candidate of Technical Sciences, Associate Professor Federal State Budgetary Educational Institution of Higher Education "Ulyanovsk State Technical University" (Ulyanovsk, Russian Federation), Expert 1st category;

IAAR expert, student – Sisenova Tolganay, 2nd year master's student of the Degree

program “Management” University of Turan (Almaty, Republic of Kazakhstan)

Coordinator of the IAAR external expert commission - Gulfiya Rivkatovna Nazyrova, Candidate of Economic Sciences, project manager for specialized and institutional accreditation of the IAAR

(III) REPRESENTATION OF THE EDUCATIONAL ORGANIZATION

Almaty University of Power Engineering and Teleommunications was founded on January 10, 1997 on the basis of the Almaty Energy Institute (AEI), which existed from 1975 to 1997. It is the first non-state technical university with the status of a non-profit organization. Students are taught in Kazakh and Russian languages. In 2013, training began in English in two specialties: “Radio Engineering, Electronics and Telecommunications” and “Electrical Engineering”. In 1989, the Almaty Energy Institute was the first in Kazakhstan and one of the few in the Soviet Union to be certified by the commission of the State Inspectorate of State Education of the USSR. The high level of training of specialists at AEI was officially recognized at the union level, and this is an undoubted success of the team of students, teachers and management of the institute. In May 1997, the “Educational and Scientific Complex of Energy and Telecommunications” was transformed into the Almaty Institute of Power Engineering and Communications with the status of a non-profit joint-stock company. Gumarbek Zhusupbekovich Daukeyev was elected rector of the new institute. Since July 2010, the Almaty Institute of Energy and Communications received the status of a university with the right to train students in master's and PhD programs and a new name - the non-profit joint-stock company "Almaty University of Power Engineering and Telecommunications" (AUPET).

Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev is one of the leading technical universities in Central Asia. It trains personnel in the fields of energy, telecommunications, IT technologies and information security, space engineering, robotics and artificial intelligence. The university trains specialists in college, bachelor's, master's and PhD programs.

Personnel training at AUPET named after Gumarbek Daukeyev is carried out in accordance with the perpetual State license for educational activities No. KZ80LAA00018161 dated 05/05/2020.

The university has passed institutional and specialized accreditation by the Independent Agency for Accreditation and Rating (IAAR)

IAAR is the leading international accreditation agency for quality assurance in education (founded in 2011

IAAR is included in the European Quality Assurance Register EQAR and is a full member of the European Association for Quality Assurance in Higher Education ENQA.

(IAAR Profile /IAAR в EQAR https://www.eqar.eu/register/agencies/agency/?id=30*)*

The activities of the IAAR comply with the quality assurance standards of the European Higher Education Area ESG and the World Federation for Medical Education WFME.

Rating of AUPET named after Gumarbek Daukeyev and degree programs

According to the Independent Kazakhstan Agency for Quality Assurance in Education, a National (General) ranking of the best universities in Kazakhstan in 2017 was compiled. It was formed based on an analysis of academic statistical indicators, expert assessments and a survey of employers.

The methodology for calculating the institutional rating is based on three components: the first component (questionnaire No. 1) is an assessment of the quality of the university’s academic resources, which accounts for 70% of the total number of points; the second component (questionnaire No. 2) is an expert assessment of the quality of activities of universities (15%); the third component (questionnaire No. 3) is an assessment of the activities of universities based on a sociological survey of employers and government bodies (15%).

4 institutes are part of the university:

Institute of Automation and Information Technologies

- Department of Automation and Control
- Department of IT Engineering
- Department of Cyber Security

Institute of Energy and Green Technologies

• Department of Heat Power Engineering
• Department of Electrical Engineering
• Department of Renewable and Alternative Energy Sources
• Department of Ecology and Management in Engineering
Institute of Telecommunications and Space Engineering
• Department of Space Engineering
• Department of Telecommunication Engineering
• Department of Electronic Engineering
Institute of Natural and Human Sciences
• Department of Math
• Department of Physics and Electrical Engineering
• Department of Social Sciences
• Department of Languages

The university has a high-quality educational and methodological and powerful material and technical base.

The student population of accredited Degree Programs as of March 11, 2024 is:

• 6B07123 Systems Engineering (joint degree program, double degree with the Anhalt University of Applied Sciences)

• 7M07106 Instrumentation (joint degree program with Tomsk Polytechnic University) – 4 students

(IV) DESCRIPTION OF PREVIOUS ACCREDITATION PROCEDURE

Accreditation under Degree program 6B07123 Systems Engineering (joint degree program, double degree with the Anhalt University of Applied Sciences), 7M07106 Instrument Engineering (joint degree program with Tomsk Polytechnic University) is being conducted for the first time.

(V) DESCRIPTION OF THE VISIT OF THE HIGH EXPERT COMMISSIONS

The work of the Higher Expert Commission was carried out on the basis of the approved Program of the visit of the expert commission for specialized accreditation of degree programs at NJSC AUPET in the period from March 11 to March 13, 2024.

In order to coordinate the work of the High Expert Commission, an orientation meeting was held on February 25, 2024. Results of the meeting: powers were distributed among the members of the commission, the schedule of the visit was clarified, and agreement was reached on the choice of examination methods.

Meetings with the Rector, vice-rectors for areas of activity, heads of structural divisions, heads of departments and heads of Degree Programs, Academic staff of Degree Programs, students of Degree Programs, graduates of Degree Programs, with stakeholders (employers and representatives of practice bases). In total, 83 representatives of the university and its partners took part in the meetings (Table 1). The goal was to obtain objective information about the quality of the degree programs of the cluster and the entire infrastructure of the university, to clarify the content of the self-assessment report

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Table 1 - Information about employees and students who took part in meetings with the External Expert Commission of the IAAR:

Category of participants	Quantity
Chairman of the Board-Rector	1
Vice-rectors	3
Heads of structural divisions	8
Heads of departments, heads of Degree Programs	15
Academic staff*	6
Students	16
Graduates*	11
Employers*	8
Total	**68**

During a combined excursion (online and offline), members of the External Expert Commission got acquainted with the state of the material and technical base, visited the structural divisions of the university, teaching, laboratory and research facilities. Experts inspected departments and centers, libraries, dormitories, a first-aid post, a gym, a canteen, practice bases, and main classrooms for accredited Degree Programs.

The mechanisms for implementing the university's policy and the specification of individual data were clarified at an online meeting of the IAAR External Expert Commission with the nuclear power engineering plant target groups. Members of the External Expert Commission attended the lesson, the number of students was 15 people.

According to the approved schedule, the lesson was held in an equipped classroom. The teacher explained the purpose of the practical lesson and the issues to be studied. Next, the students made a presentation of the completed task. The auditorium is equipped with a projector and a PC.

(VI) COMPLIANCE WITH SPECIALIZED ACCREDITATION STANDARDS

6.1. Standard "Right to Participation (Eligibility)"

- ✓ *Educational organizations planning to implement a joint degree program must be recognized by the relevant authorities of the country in which they are located.*
- ✓ *Participation in the implementation of a joint degree program and the awarding of a joint academic degree must comply with national regulations.*
- ✓ *The awarded academic degree(s) must comply with the national qualification system of the countries in which the Educational Organizations are located.*
- ✓ *A joint degree program must be developed and subject to implementation with the involvement of all partner educational organizations.*
- ✓ *The conditions for the development and implementation of a joint degree program must be clearly stated in the cooperation agreement between partner educational organizations.*
- ✓ *The following information must be stated in the cooperation document:*
- ✓ *information about the assigned academic degree (qualification, degrees) for mastering (completion) of a joint degree program;*
  coordination and responsibility of the involved educational partner organizations in relation to management and financial organization (including financing, sharing of costs and income, etc.);
- ✓ *rules for admission and selection of students;*
- ✓ *mobility of students and teachers;*
- ✓ *rules for conducting examinations, methods for assessing student results, recognition of ECTS credits and procedures for awarding joint academic degrees.*

Evidence-based part

1.1. Status

Non - profit JSC "Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev" is one of the largest multidisciplinary higher educational institutions in Kazakhstan. The training of highly qualified specialists for various sectors of the energy sector of Kazakhstan, the implementation of scientific research and the training on their basis of highly qualified personnel is provided at this university.

Non - profit JSC "Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev" operates on the basis of a state license for the right to conduct educational activities, series KZ80LAA00018161. The license issuance date is 05/05/2020, without limitation of validity period.

1.2. Joint development and implementation

Non-profit JSC "Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev" implements a joint Degree Program and a double-degree Degree Program in collaboration with partner organizations:

1. 7M07106 Instrumentation (joint degree program with Tomsk Polytechnic University);

2. 6B07123 Systems engineering (joint degree program, double degree with the Anhalt University of Applied Sciences).

For both Degree Programs, the level of education is master's degree - 120 ECTS (duration of study is 4 semesters).

1.3. Cooperation Agreement

During the development of Degree Programs, the necessary memorandums and agreements on cooperation, as well as on their joint implementation, were concluded.

When developing joint and double-diploma Degree Programs, all National regulations for their creation were taken into account; the academic degrees awarded correspond to the national qualification system of partner countries.

As part of accredited Degree Programs, students receive two diplomas:

- Non - profit JSC "Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev"

- partner university.

The following documents will be issued based on the results of successful completion of

the Degree Program:

- from the partner university: master's degree in the relevant field;
- from APET: Master of Agricultural Sciences Degree Program and Diploma Supplement.

Analytical part

Based on a thorough analysis carried out during its visit, the External Expert Commission notes that the accredited Degree Programs meet the requirements of modern education. The university has a development plan for these accredited Degree Programs 2021 - 2025.

Based on the materials and documents studied, the members of the External Expert Commission conclude that the partner universities are recognized by the relevant authorities of the country in which they are located. They fully comply with national regulations.

Based on the results of training in Degree Programs, graduates are assigned the appropriate qualifications established by the legislation of all partner universities.

At the same time, members of the External Expert Commission note the insignificant contribution to the development of Degree Programs of partner universities. For example, Tomsk University only provided methodological support for the educational process

Members of the External Expert Commission note the framework nature of the agreement on the implementation of Degree Programs. This does not allow us to fully evaluate the contribution of each partner university in their development and implementation. Namely: specific methods of management and financing were not considered, there is no information on recruitment specifically for Degree Programs. Also, in terms of academic mobility, the obligations of partners in the implementation of Degree Programs were not highlighted.

Members of the External Expert Commission note that cooperation agreements contain information that allows synchronizing the rules for conducting examinations, methods for assessing the achieved results of students, recognition of ECTS credits and procedures for awarding joint academic degrees.

Strengths/best practices for Degree Programs 6B07123 Systems Engineering , 7M07106 Instrumentation Engineering:

No strengths have been identified for this standard.

***Recommendations for Degree Programs* 6B07123 Systems Engineering, 7M07106 Instrumentation Engineering:**

1. Develop a plan for the participation of partner universities in the implementation of Degree Programs, highlighting specific disciplines, modules, etc. implemented with the involvement of resources from partner universities, including the use of remote technologies (Deadline: 09/01/2024)

2. Adjust the agreement on the implementation of Degree Programs with a clear allocation of rights and responsibilities between partner universities regarding the management of Degree Programs and their financing (Deadline: 01/01/2025)

Adjust the agreement on the implementation of Degree Programs, highlighting the responsibilities for the recruitment of applicants by partner universities and the mechanism of interaction during the admissions company (Deadline: 01/01/2025)

3. Determine the numerical values of indicators that stimulate the academic mobility of students and Academic staff during the implementation of Degree Programs (Deadline: 01/01/205)

Conclusions of the External Expert Commission on the criteria:

According to the standard "Eligibility for Participation (Eligibility)" according to Degree Programs 6B07123 Systems Engineering and 7M07106 Instrumentation Engineering, 10 criteria are disclosed, of which 6 have a strong position and 4 have a satisfactory position.

6.2. Standard "Learning Outcomes"

- ✓ *The joint degree program must be developed in accordance with established objectives, including intended learning outcomes.*
- ✓ *The qualification obtained as a result of the development of a joint degree program must be clearly defined, explained and correspond to a certain level of the national qualifications framework in higher education and, therefore, the framework of qualifications in the European Higher Education Area (EQ-ENEA).*
- ✓ *The disciplines of the joint degree program must ensure the achievement of the planned learning outcomes, including knowledge, skills and competencies in the relevant field(s) of education.*
- ✓ *The joint degree program must ensure that each student achieves the planned learning outcomes.*
- ✓ *The joint degree program, where relevant, must take into account the minimum harmonized conditions of study specified in European Union Directive 2005/36/EC or the corresponding general training framework established in accordance with the Directive.*

Evidence-based part

2.1. The level of education

The academic degrees awarded correspond to the national qualification system of the partner countries. As a result of mastering degree program 6B07123 Systems Engineering (joint degree program, double-diploma with the Anhalt University of Applied Sciences), 7M07106 Instrumentation (joint degree program with Tomsk Polytechnic University), level 7 (master's degree) of the national qualification framework in higher education is achieved, which also corresponds to 7 -level of the framework of qualifications in the European Higher Education Area (FQ-EHEA).

Learning outcomes are determined on the basis of the Dublin descriptors of the corresponding level of education of the master's degree and are expressed through competencies. Learning outcomes are the basis for choosing methods and technologies that are used in the teaching process. Learning outcomes are the basis for choosing methods and technologies that are used in the teaching process.

2.2. Disciplines

Harmonization in the content of degree program 6B07123 Systems Engineering (joint degree program, double-degree with the Anhalt University of Applied Sciences) and 7M07106 Instrumentation (joint degree program with Tomsk Polytechnic University) was identified on the basis of a comparative analysis of elective disciplines of the cycle "Basic disciplines" and "Profile disciplines" with the Anhalt University of Applied Sciences, Tomsk Polytechnic University.

Collaborative work on the development of a double-diploma degree program was carried out with partner universities. Each of the disciplines in the “Basic Disciplines” and “Profile Disciplines” cycles of the “Agrobiotechnology” degree program was studied by professors from two universities. Joint development was carried out online, through discussion on Internet sites, in order to achieve the learning outcomes of the degree program (syllabuses, curricula). The logic of the academic relationship of disciplines is determined by a system of pre- and post-requisites.

When developing joint degree programs, modules and lists of disciplines were discussed with partner universities, and all requirements of the State Compulsory Education Standard of the Republic of Kazakhstan (https://adilet.zan.kz/rus/docs/V2200028916) were taken into account. The equivalence of degree programs with partner universities is at least 50%, which makes it possible to implement a program of internal academic mobility of students. The difference in the work plan for the degree program is justified by its peculiarity.

2.3. Achievement

The learning results of accredited joint degree programs are formed in accordance with competencies formed on the basis of the State Compulsory Education Standard (Order of the Ministry of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No. 2), the National Qualifications Framework, professional standards, taking into account the forecast

of future needs domestic and foreign markets.

The necessary integrity of degree programs is ensured through an integrated approach in the formation of the entire list of disciplines, their internal interconnection and logical sequence in teaching. The achievements of the planned learning outcomes (knowledge, skills and competencies) are arranged in a logical sequence, which makes it possible to assess their provision from general to clinical psychology.

The disciplines in the curriculum are combined into modules and presented in the modules they form competencies and skills in a single direction. The content of the academic disciplines presented in the modules is disclosed in the passport of the degree programs from which the learning outcomes are derived.

Degree programs 6B07123 Systems Engineering (joint degree programs, double degree with the Anhalt University of Applied Sciences), 7M07106 Instrumentation (joint degree program with Tomsk Polytechnic University) are developed in accordance with state compulsory education standards.

2.4. Regulated professions

Employment opportunities, possible career directions. Upon completion of degree program 6B07123 Systems Engineering:

1) Systems engineer-researcher;
2) Researcher at a research laboratory

Upon completion of the double-diploma degree program 7M07106 Instrumentation

1) Instrument technician
2) Instrument engineer
3) Researcher at research institutions in instrument engineering areas
4) Instrument engineer

Analytical part

Members of the external expert commission note that degree programs are developed in accordance with established goals, including intended learning outcomes, competencies, ECTS, etc.

Degree programs contain a detailed description of the qualifications obtained as a result of mastering joint degree programs and correspond to a certain level of the national qualifications framework in higher education and, therefore, the framework of qualifications in the European Higher Education Area (FQ-EHEA)

According to the external expert commission, all degree program disciplines ensure the achievement of planned learning outcomes, including knowledge, skills and competencies in the field of instrumentation and systems engineering and allow one to evaluate and organize a personalized approach to mastering degree programs.

Degree programs take into account the minimum harmonized training conditions specified in European Union Directive 2005/36/EC or the relevant general training framework established in accordance with the Directive.

Strengths/best practices for Degree Programs 6B07123 Systems Engineering, 7M07106 Instrumentation

- Strengths according to this standard have not been identified

Recommendations for Degree Programs **6B07123 Systems Engineering, 7M07106 Instrumentation**

- Recommendations for this standard have not been developed.

Conclusions of the External Expert Commission on the criteria:

According to the standard “Learning Outcomes” for degree program 6B07123 Systems Engineering, 7M07106 Instrumentation, 5 criteria are disclosed, 5 of which have a satisfactory

position.

6.3. Standard "Development and approval of the program"

- ✓ *The structure and content of the joint degree program must be determined and developed based on a student-centered approach to learning and ensure the achievement of planned results.*
- ✓ *A collaborative degree program should be developed with the participation of students and other stakeholders.*
- ✓ *The European Credit Transfer System (ECTS) must be applied correctly and the distribution of credits must be clear.*
- ✓ *A joint degree program ensures coverage of the required volume of workload. The undergraduate program is at least 180-240 ECTS credits. The joint master's program is at least 90-120 ECTS credits and should not be less than 60 ECTS credits at the second level of the cycle (credit ranges according to FQ-ENEA). The range of credits is not specified for the PhD degree program.*
- ✓ *The joint degree program has mechanisms to control the workload and the average time to complete the program.*

Evidence-based part

3.1 Joint degree program

The Commission notes that the structure and content of the joint degree program 6B07123 Systems Engineering (joint degree program, double-degree with the Anhalt University of Applied Sciences) and 7M07106 Instrumentation (joint degree program with Tomsk Polytechnic University) are developed on the basis of a student-centered approach to learning. They ensure the achievement of learning outcomes.

Development and management of degree programs Electrical power engineering, instrument engineering is carried out on the basis of the National Qualification Framework (Approved by the protocol of March 16, 2016 by the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations); State compulsory education standard of the Republic of Kazakhstan No. 604 dated 10.31.2018 (order of the Ministry of Education and Science of the Republic of Kazakhstan of the Republic of Kazakhstan No. 182 dated 05.05.2020), State compulsory education standard, order of the Ministry of Science and Higher Education No. 2 dated 07.20.2022, Standard Degree programs, order of the Ministry of Education and Science of the Republic of Kazakhstan No. 79 dated September 23, 2022; and Dublin descriptors, aligned with the European Qualifications Framework, using Occupational Standards.

Accredited degree programs occupy a significant market share, since AUPET is a leader in training personnel for the energy sector of the economy in the Republic of Kazakhstan.

The uniqueness of accredited degree programs is the strengthening of basic knowledge using an interdisciplinary approach for mastering professional disciplines in the field of training. A distinctive feature of degree programs: a joint degree program with the Anhalt University of Applied Sciences and Tomsk Polytechnic University. In addition, the graduate is trained on basic production issues: the introduction of systematic, modern approaches to organizing the energy sector of the Republic of Kazakhstan, the introduction of energy-saving and high-tech approaches to the development of systems and devices, integrated approaches to the development of energy systems, the use of modern progressive instrument-making technologies and a systematic approach to design.

Accredited degree programs offer an integrative approach to the formation of key professional and social competencies necessary for a graduate to carry out research, organizational and management activities using modern and innovative research methods and for the graduate's successful adaptation to the labor market.

The individuality of accredited degree programs is a wide range of theoretical and practical knowledge in the professional field, skills in independently developing and putting forward

various options for solving professional problems using theoretical and practical knowledge, acquiring the competencies of independent management and control over the processes of scientific and production activities within the framework of strategy, policy and goals of the organization, discussion of the problem, argumentation of conclusions and competent handling of information. Graduates of these degree programs will be able to receive two diplomas from the above-mentioned partner universities.

Degree programs are focused on developing basic and professional competencies related to research and practical activities, taking into account the requirements of employers and partner universities, as well as the needs and interests of undergraduates.

The list and content of disciplines in the compulsory component of degree programs correspond to the State Compulsory Education Standard. To ensure equal opportunity, regardless of the language of instruction, degree programs, curricula, catalogs of elective disciplines are developed in the state, Russian and English languages and are identical in structure and content.

3.2 Credits

When developing joint and double-degree degree programs, all National regulations were taken into account. The academic degrees awarded correspond to the national qualification system of the partner countries and the European Credit Transfer System (ECTS), accordingly, the credits are distributed clearly. Taking into account the recommended ratio of credit distribution in ECTS, SOPs for cycles of general education, basic and major disciplines were developed.

3.3 Study load

Planning of the teaching load of teaching staff at the university is carried out on the basis of time standards for determining the volume of educational work of the university teaching staff, approved by the Member of the Board - Vice-Rector for Academic Affairs. The distribution of the teaching load is carried out taking into account the qualifications of teachers and taking into account the regulatory documents of the Ministry of Science and Higher Education of Kazakhstan. Planning of the teaching load begins with the formation of the student population, the formation of elective disciplines, the assignment of disciplines to departments, the approval of working curricula, and the schedule of the educational process.

The uniqueness and individuality of degree programs lies in the in-depth study of fundamental disciplines - mathematics, physics, circuit engineering, IT and multidisciplinarity. It combines natural sciences, socio-political, economic sciences and is aimed at training specialists of a new format, competitive in the global space, and in demand in the labor market.

The number of ECTS credits for each discipline and the duration of the module and discipline, indicating the distribution of hours by type of lesson - lecture, seminar, practical lesson, etc., exams and assessment methods are reflected in the Working Curriculum.

Analytical part

The structure and content of degree programs are defined and developed on the basis of a student-centered approach to learning. To ensure the achievement of the planned results, the necessary regulatory documents have been developed. The planned activities are being carried out. To develop and coordinate degree programs, all interested stakeholders: students, graduates, employers, teachers are invited. The presented minutes of the meeting of the relevant collegial governing bodies indicate this. Accredited degree programs are developed and implemented on the basis of the European Credit Transfer System (ECTS). The management of degree programs has demonstrated the correct understanding and application of this system and the correct distribution of credits. This ensures that the required volume of workload is covered. The joint master's program is 120 ECTS credits and at least 60 ECTS credits at the second level of the cycle (credit ranges according to FQ-EHEA).

Degree programs have mechanisms to control the workload and the average time to complete the program

Strengths/best practices for Degree Programs 6B07123 Systems Engineering, 7M07106 Instrumentation

- Strengths according to this standard have not been identified

Recommendations for Degree Programs **6B07123 Systems Engineering, 7M07106 Instrumentation**

- recommendations on this criterion have not been developed;

Conclusions of the External Expert Commission on the criteria:

According to the standard "Development and approval of a program" for degree programs 6B07123 Systems Engineering, 7M07106 Instrumentation, 5 criteria are disclosed, and according to all 5 criteria they have a satisfactory position.

6.4. Standard "Admission, academic performance, recognition and certification of students"

- ✓ *Partner educational institutions must have predefined, published and consistently applied admissions policies and related applicant requirements.*
- ✓ *Selection procedures must correspond to the level of joint degree programs and regulate all periods of the "life cycle" of education, i.e. admission academic achievement, recognition and certification.*
- ✓ *Recognition of qualifications and periods of study (including recognition of prior learning) should be applied in accordance with the Lisbon Recognition Convention and supporting instruments.*

Evidence-based part

4.1. Admission of students

The commission notes that the university has a published student population policy. It consists of admitting to the number of students persons who are most prepared for studying at a university, who have consciously chosen a specialty, who have scored the required number of points according to the results of the Unified National Testing and Comprehensive Testing of applicants (graduates of general secondary schools, colleges) on the basis of a state order (grant), grant from the local budget and on a paid basis, as well as specialists with diplomas for obtaining a second higher education based on an interview.

The rules for admission and selection of students are reflected in the Agreement on the implementation of a joint master's degree program between AUPET and partner universities.

All conditions for admission and implementation of degree programs are presented in the Agreement.

Requirements for applicants to double-diploma master's degree programs entering the Republic of Kazakhstan - comply with the requirements of the legislation of the Republic of Kazakhstan, entering TSU - comply with the requirements of the legislation of the Russian Federation for applicants to the master's program, this is a bachelor's / specialist's diploma, an academic transcript, a certificate confirming the level of language training and a recommendation from a teacher.

4.2. Confession

Recognition of educational qualifications, periods of study and previous education is an integral part of ensuring students' success in the learning process. When entering a master's program for accredited degree programs, previous education and study of prerequisites are taken into account. If there is insufficient knowledge of the prerequisites, which is possible when entering from another direction of degree programs, for example, from economics, a master's student has the opportunity to master the prerequisites in accordance with the established standards. Prerequisites are acquired on a paid basis in accordance with the AUPET Regulations.

All actions of the university comply with the Lisbon Convention on the Recognition of Educational Documents, and Order of the Minister of Science and Higher Education of the Republic of Kazakhstan No. 268 dated June 12, 2023 "On approval of the Rules for the recognition of educational documents."

Analytical part

Partner universities have posted information about admission to the laws of the respective countries on the websites of their organizations. There are defined, published and consistently applied admission rules and corresponding requirements for applicants

Members of the External Expert Commission note that the selection procedures correspond to the degree programs and discipline, regulating all periods of the "life cycle" of education, i.e. admission, academic performance, recognition and certification.

In accordance with established agreements between partner universities, an algorithm for the recognition of qualifications and periods of study (including recognition of prior learning) in accordance with the Lisbon Recognition Convention has been developed.

Strengths/best practices for Degree Programs 6B07123 Systems Engineering, 7M07106 Instrumentation Engineering

- Strengths according to this standard have not been identified

***Recommendations for Degree Programs* 6B07123 Systems engineering, 7M07106 Instrumentation Engineering**

- recommendations on this criterion have not been developed;

Conclusions of the External Expert Commission on the criteria:

According to the standard "Learning Outcomes" for dergee program 6B07123 Systems Engineering, 7M07106 Instrumentation Engineering, all 3 criteria have a satisfactory position.

6.5. Standard "Student-centered learning, teaching and assessment"

- ✓ *The joint degree program should be designed in accordance with the planned learning outcomes.*
- ✓ *The approaches to learning and teaching used must be adequate to achieve the intended learning outcomes.*
- ✓ *A joint degree program must take into account the diversity of students, respect their needs, including the potentially different cultural characteristics of students*
- ✓ *The rules for conducting examinations and assessing achieved learning outcomes must correspond to the intended learning outcomes*
- ✓ *Examinations and assessment of student results must be conducted by partner educational organizations in accordance with established rules.*

Evidence-based part

5.1 Learning and teaching

At the university, respect and attention to different groups of students and their needs are demonstrated by creating conditions for them to choose an individual educational path. This is: the ability to choose the language of instruction, elective disciplines, teachers; formation of an individual curriculum for each student; organization of an additional (summer) semester for repeated or additional study of disciplines; possibility of learning via distance learning technologies. Both experienced specialists and students take part in the development and formation of joint degree prodramas. They can provide wishes at their level.

Partner educational organizations do not discriminate against persons with disabilities or groups based on race, nationality, ethnicity, religion, social status, marital status, physical ability, age, or other subjective criteria.

The university has created all the conditions for obtaining comprehensive knowledge for people with disabilities. If necessary, a flexible learning path is provided to them.

The student has the right to study certain disciplines in other higher education institutions.

Students have the opportunity to receive and transmit educational materials using electronic means of communication (https://edu2.AUPET.kz/).

5.2 Student assessment

The University ensures consistency, transparency and objectivity in the learning outcomes assessment mechanism for each degree program, including appeals. Lists of examiners and

examination commissions are formed by the head of the department from among teachers who have qualifications corresponding to the profile of a given academic discipline and who have not conducted training sessions in this group (stream). The defense of practice reports is accepted by a commission appointed by the head of the department. The reliability of the knowledge assessment is determined by the fact that based on the testing results, the computer itself automatically displays the final assessment and enters it into the Platonus AIS system.

The External Expert Commission got acquainted with the Regulations on the ongoing monitoring of academic performance, intermediate and final certification of students at AUPET. The appeal mechanism is spelled out in detail, with deadlines.

The management of degree programs ensures that assessments are accurate and appropriate. The objectivity of assessing students' knowledge, transparency and adequacy of tools and mechanisms for their assessment are ensured by regulatory documents on the organization of credit education technology at AUPET and the functionality of the AIS "Platonus". The management of degree programs ensures the objectivity of assessing students' knowledge during the examination session (interim certification). For the period of the examination session, by order of the Chairman of the Board, an appeal commission from among teachers is created. A student who disagrees with the result of the final control submits an appeal no later than the next working day after the exam.

For all types of knowledge assessment, there is a procedure for appeal, midterm controls and extension of the examination session if there are good reasons. The University ensures that there is a procedure for considering student complaints at the level of the department, academic staff, advisers, graduating departments, first vice-rector, rector within the framework of the “Regulations on the procedure for considering student complaints.”

A student who disagrees with the result of the final control submits an appeal no later than the next working day after the exam. The examiner/teacher signs the student's personal statement. The appeal is carried out orally by a subject appeal commission according to its composition. An appeal is carried out only on the issues being appealed (incorrect question, two or more correct answers, no correct answer, etc.).

Analytical part

Members of the External Expert Commission note that accredited degree programs are developed in accordance with a student-centered approach and are focused on achieving results. This is Evidence-based partd by the results of a survey of students and teaching staff. In addition, students emphasized honesty and objectivity in the applied approaches to learning and assessment of learning outcomes during ongoing monitoring and intermediate certification. In addition, regulatory documents fully reflect and disclose the rules for conducting

Despite the identification of Kazakh-speaking and Russian-speaking groups of students, members of the External Expert Commission note the insufficient implementation of multilingualism, which impedes the full implementation of the principles of degree programs.

Strengths/best practices for Degree Programs 6B07123 Systems Engineering, 7M07106 Instrumentation

- Strengths according to this standard have not been identified

Recommendations for Degree Programs **6B07123 Systems Engineering, 7M07106 Instrumentation**

Consider the possibility of introducing an additional program for mastering the languages of the countries in which partner universities are located, in order to overcome the language barrier and full-scale implementation of the degree program (Deadline: 09/01/2025)

Conclusions of the External Expert Commission on the criteria:

According to the standard “Student-centered learning, teaching and assessment of

academic performance" according to degree program 6B07123 Systems Engineering, 7M07106 Instrumentation, all 5 criteria are disclosed, according to 4 criteria they have a satisfactory position and 1 suggests improvement.

6.6. Standard "Support for Students"

- ✓ *Partner educational organizations must ensure the functioning of appropriate student support services that contribute to the achievement of planned learning outcomes.*
- ✓ *Student support services should support the achievement of intended learning outcomes.*
- ✓ *Student support services should take into account possible specific mobility problems of students.*
- ✓ *Support services should, when allocating, planning and providing educational resources, take into account the needs of different groups of students (mobility students, adults, working people, distance learners, and students with disabilities) and take into account the principles of a student-centered approach to learning and teaching.*

Evidence-based part

Partner universities ensure the functioning of appropriate student support services that contribute to the achievement of planned learning outcomes. In this case, possible specific problems of mobile students should be taken into account. In addition, student support services, when distributing, planning and providing educational resources, take into account the needs of different groups of students (mobile students, adults, working people, distance learners, and students with disabilities).

Social support for students is a priority area of the AUPET development plan.

Financial assistance is regularly allocated from the Student Fund and the University Development Fund for material support of students left without parental care. It should be noted that students in this category live in student dormitories for free, use Internet services, and eat free in the university canteens.

Support of educational, accounting and support systems.

Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev has an official website located on a web server at http://www.AUPET.kz . This site is freely available both from the university's unified information network and from the Internet. On this site and on the satellite site http://info.AUPET.kz , all types of information are kept up to date by constantly updating content in three languages (Russian/Kazakh/English).

Keeping various educational, scientific, and methodological information up to date on the website allows citizens to receive complete, reliable, socially significant information about the services provided and areas of educational activity or services to applicants wishing to enroll in a technical university named after Gumarbek Daukeyev.

Video surveillance system

A video surveillance system was introduced in buildings A, B, D, as well as in all dormitories. The total number of cameras including internal cameras is 111 pieces. 50 external and internal cameras were installed in dormitories No. 1, No. 2, No. 3.

Telephone communications.

A total of 11 automatic telephone exchanges are used in the AUPES named after Gumarbek Daukeyev. Some of them are used for educational purposes.

A total of 256 internal telephone numbers, 12 incoming trunk lines and 340 telephone sets are in use.

The described university resources (computer classes, servers, Internet access, software, etc.) fully provide the opportunity for independent educational and research work. The activities of the department fully meet the needs of the implementation of degree programs.

Preparatory work for filming video lectures for further use in online courses is being carried out.

The university library is an important link in the educational space of the educational institution. Its tasks are to accumulate and provide various information resources aimed at supporting the educational process.

6 library and information service points - subscription, three specialized reading rooms, a room of electronic resources "Mediatheka" and a reading room for extracurricular activities in hostel No. 1 work for students in the library.

Library. 5 library and information service points - subscription, three specialized reading rooms, and the "Media Library" electronic resource room are open for students in the library.

The total area of the Library premises is 1078.9 m2. There are 226 seats there. The library has 31 computers connected to the Internet, four scanners, two MFPs and two printers, a projector, and equipment for working with barcodes.

The AUPET Library operates on the basis of the Law on Education, the Regulations on the Library and is guided in the formation of the library collection by the “Qualification requirements for educational activities”, as well as the Rules for the formation, use and preservation of the collection of libraries of state educational organizations.

The total library collection of the library is 452,675 items, incl. in Kazakh language 163060 copies in foreign languages 6659 copies.

At partner universities, supporting foreign students is a prerogative, since the universities are aimed at accepting foreign students. On the official website of the university, there are sections “Admissions”, then “Admission of foreign citizens”.

Analytical part

All partner universities have student support services that facilitate the achievement of planned learning outcomes, dean's offices, departments, departments, guided by the country's regulatory documents, as well as local acts of the university.

The work of such services is aimed at educational and organizational work to achieve learning outcomes.

In addition, student support services take into account possible specific problems of mobile students in their work.

At the same time, members of the External Expert Commission note that during the interview and as a result of the analysis of the submitted documents, it can be concluded that there is insufficient information support between the management of the university and the management of the degree program. This reduces the effectiveness of interaction and support for students.

Strengths/best practices for Degree Programs 6B07123 Systems Engineering, 7M07106 Instrumentation

- Strengths according to this standard have not been identified

***Recommendations for Degree Programs* 6B07123 Systems Engineering, 7M07106 Instrumentation**

- Develop a procedure for interaction between structural divisions of partner universities and the management of degree programs. Which will provide operational support to the needs of various groups of students in terms of mastering degree programs (Deadline: 09/01/2025)

Conclusions of the External Expert Commission on the criteria:

According to the “Student Support” standard for degree programs 6B07123 Systems Engineering, 7M07106 Instrumentation, out of 4 criteria, 3 have a satisfactory position and 1 – suggesting improvement.

6.7. Standard "Resources"

- ✓ *The teaching staff must be sufficient and adequate (qualifications, professional and international experience) to implement the joint degree program.*
- ✓ *The conditions provided must be sufficient and adequate taking into account the intended learning outcomes.*
- ✓ *Partner educational organizations are responsible for the quality of their employees and providing favorable conditions for their effective work. Therefore, educational organizations, recognizing*

the importance of teaching, should:

- ✓ *develop clear, transparent and objective criteria for hiring employees, appointments, promotions, dismissals and comply with them in their activities;*
- ✓ *provide opportunities for career growth and professional development for teachers;*
- ✓ *encourage scientific activities to strengthen the link between education and scientific research;*
- ✓ *encourage the use of innovative learning methods, teaching and the use of advanced technologies.*
- ✓ *The educational organization must strive to ensure that the educational equipment and software used to ensure that students achieve the planned results of the joint degree program are similar in the relevant industries.*

Evidence-based part

7.1 Academic staff

NAO AUPET conducts educational activities in the field of organizing higher education and postgraduate education in accordance with the certificate of institutional accreditation issued by the Independent Kazakhstan Agency for Quality Assurance in Education. State license Ministry of Education and Science of the Republic of Kazakhstan - KZ80LAA00018161. License issue date: 05/05/202. Levels of study include bachelor's, master's, and PhD programs. The validity period of the certificate is 04/05/2019-04/04/2024. Date of issue of the certificate: 05/05/2020 Registration number IA No. 0035. The certificate of specialized accreditation of degree programs of the cluster was issued by the decision of the Independent Agency for Quality Assurance in Education.

Personnel policy, being one of the strategic priorities of the university's development, is aimed at ensuring qualification requirements for the implementation of degree programs, preserving the professional potential of the teaching staff, creating conditions for increasing professional motivation and career growth of teachers, and creating a favorable moral and psychological climate in the team. The personnel policy of AUPET named after Gumarbek Daukeyev was developed in accordance with the University Development Strategy, the provisions of the personnel policy of NJSC AUPET named after Gumarbek Daukeyev and represents the main directions and approaches of personnel management for the implementation of the mission and declared strategic goals of AUPET named after Gumarbek Daukeyev. The principle of a democratic approach, maintaining parity, creating conditions and an atmosphere of initiative and creativity, stimulating the activities of teaching staff, personal improvement in management - all this meets modern trends in the field of working with human resources and is based on the formation and strengthening of "human capital" in the conditions of transition to society knowledge.

The personnel policy is reflected in the following documents of the university: Development Strategy of Almaty University of Power Engineering and Telecommunications (AUPET) named after Gumarbek Daukeyev https://info.AUPET.kz/info/smk/Strategic_plan_2021_2023_c.pdf dated June 28, 2021, Internal labor regulations of Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev https://info.AUPET.kz/info/smk/Rules_internal_work_rus_c.pdf dated October 25, 2019, protocol No. 7 dated August 24, 2018 (Appendix 7.1), Collective agreement between the employer (AUPET) and the PKR on period from 2017 to 2020 from 01.45.2021,

https://AUPET.edu.kz/admin/web/uploads/personal-documents/1651645168_u4K1X0.pdf

Rules for competitive filling of positions of teaching staff and scientific workers 04/25/2022 (Appendix 7.3), order No. 105. https://AUPET.edu.kz/admin/web/uploads/personal-documents/1651645168_u4K1X0.pdf (Appendix 7.3), Regulations on the election to the position of acting associate professor, acting professor of AUPET, Instructions on the procedure for imposing disciplinary sanctions on employees https://info.AUPET.kz/info/smk/Instruction_DV_RUS_AUPET_c.pdf dated January 5, 2022 (Appendix 7.1), Methodology for determining bonuses to official salaries of AUPET employees https://info.AUPET.kz/info/smk/Metodika_PPS_rus_AUPET.pdf. dated January 21, 2022

(Appendix 7.3).

All Regulations are published on the website of AUPET named after Gumarbek Daukeyev at http://info.AUPET.kz/smk.html and are freely accessible for teaching staff to review.

According to the staffing schedule for the 2023/2024 academic year, 18 teaching staff units were planned, including: head of the department, associate professor PhD - 1, professor, doctor of technical sciences - 1 professors, candidate of technical sciences, candidate of physical and mathematical sciences - 1, PhD professor - 2, associate professors, candidate of technical sciences. – 1, associate professors of AUPET – 1, senior teachers – 4, teachers – 3.2022-2023 academic year are given in (Appendix 7.4).

7.2 Terms and conditions

There is an effective functioning of personnel management mechanisms such as motivation in the university, i.e. there is a provision for setting annual increment to the basic salary, which materially motivates the employee. There is a provision on setting allowances to the teaching staff. There is a provision for the system of material incentives to the teaching staff, departments and faculties by nominations. The activity and development of the teaching staff is monitored on a continuous basis. The management of the teaching activity processes is carried out according to the implementation of the individual work plan of the teacher.

The department of "Electronic Engineering" for the qualitative carrying out of classes on OP has: 8 teaching laboratories.

The laboratory "Instrumentation and automation" B-419, equipped with stands "Pneumatics (Comozzi)" and SIEMENS controllers, for the study of control and control measurement devices and automation of their control in the subjects "Fundamentals of automatic control", a new stand, "Industrial controllers in hydraulic drive systems".

Laboratory "Programmable Logic Controllers and SCADA-systems" B-419a, equipped with SIEMENS stands, industrial controllers SIEMENS S300, S1500, for the study of subjects "Industrial controllers" "Theory of computer-aided design".

Laboratory "Measurement Technology" B-422, equipped with a stand on "Modern means of measurement of physical quantities" and computers with LabView 7.5 software, to conduct classes on subjects "Fundamentals of measurement theory", "Measurement theory", "Measurement of electrical quantities", "Measurement technology", "Probability theory in instrumentation", "Probabilistic-statistical methods in instrumentation", "Fundamentals of modelling devices in LabVIEW".

Laboratory "Microcontrollers and signal microprocessors" B-424, equipped with "Texsas instruments" stands and computers for studying the basics of programming microcontrollers and signal microprocessors.

Laboratory "Microelectronics" B-421, equipped with "DEGEM SYSTEM" stands with a set of boards for practical and laboratory classes, oscilloscopes, multimeters and computers to study the basics of electronics, analogue and digital circuitry, microelectronic elements and systems.

Laboratory "Modeling of devices and systems" B-426, equipped with FPGA stands and computers for work in the subjects "Modeling of devices and systems", "Modeling of robotic systems", "Fundamentals of CAD in instrument making",

Demo versions of the following programs are installed on all E&R computers for laboratory work: ProteusVSM, MathCad, MatLab, DOS-box, SimaticManager (Step7), SimaticWinCCflexible 2008, ICCV7 forAVR, AVRStudio 4, TIAPortalV11, etc.

Laboratory B-427, NIRS - equipped with soldering stations, forced drawing, oscilloscopes, a set of tools, etc. Milling and engraving machine - 1 pc. complete with computers - Designed for the manufacture of electronic circuit boards and other products Laser machines - 2 pcs. equipped 3D printers - 4 pcs. Laboratory B-428 - laboratory "Robotics and Mechatronics" - equipped with a mock-up block of 3D printers - 1 pc. computer.

The Department of **"Renewable and Alternative Energy Sources"** has training

laboratories for the quality of classes on the OP:

- Laboratory **"Lighting and light sources"** "**A 335"** - transferred from 101B, in 335A, mounted, adjusted, all stands are working.

- Laboratory **"Electrical supply of industrial enterprises" "A340",** this laboratory is used as a multimedia class.

In the laboratory **"A536"** 10 booths imitating flats are installed; this room is used for training practices.

- Laboratory **"Renewable Energy Sources";**
- Laboratory **"Energy supply of agriculture";**
- Laboratory **"Electric power supply and lighting technology"** - equipped with special equipment of IEK A company.
- Laboratory of **"Electro-technological industrial installations";**
- Laboratory of **"Electrical Apparatuses";**
- Computer class No. 1 **"A336";**
- Computer class No. 2 **"A333".**

Translated from DeepL.com (free version)

Opening on the basis of research laboratory (TNIL) and the creation of "Scientific and production base for the implementation of design solutions" on the territory of AUPET will accelerate the implementation of pilot projects, improve the work on the adjustment and operation of renewable "green" energy facilities, as well as improve the level of qualification of masters, doctoral students and teachers of the Institute.

Computer and material and technical resources of Almaty University of Power Engineering and Telecommunications named after Gumarbek Daukeyev consist of:

1. - 37 computer classrooms for 456 workplaces;
2. - 3. 3 lecture multimedia classrooms for 250 workplaces;
3. - 2 lecture auditoriums for 220 workplaces. 4;
4. - 3 language laboratories for 84 workplaces;
5. - 7 interactive classrooms for 120 workplaces. 6;
6. - 5 television classrooms for 550 workstations;

Computers of the latest generation and a sufficiently high level of software and information resources, as well as high-quality auxiliary equipment installed in computer classes and multimedia classrooms meet the requirements of each degree programme implemented at AUPET named after Gumarbek Daukeyev.

Access to the university's local computer network, as well as to the World Wide Web, is available in all computer classes and multimedia classrooms in buildings A, B, D. Television audiences are equipped with 26 plasma TVs. 50 projectors were installed at the AUPET named after Gumarbek Daukeyev.

55 computers and 2 projectors were installed in the A-300. The A300 computer class is implemented using a modern open classroom system. It is equipped with modern computers and is an example of the future transformation of classrooms at AUPET named after Gumarbek Daukeyev. An LED screen (5*3 meters) was installed in the assembly hall of building D.

A local computing and information network, which connected local networks installed at departments and institutes into a single whole, was created at the AUPET named after Gumarbek Daukeyev. Each personal computer installed in the premises of the AUPET named after Gumarbek Daukeyev has the ability to access the World Wide Web. The local computer and information network is managed through servers. A total of 1084 workstations operate in local computer networks. Of these, 1050 workstations have Internet access. Local computer networks installed in buildings “A”, “B”, “D” are united into a single network via fiber-optic communication.

The Internet line is used for any external users to access the public servers of the university http://www.AUPET.kz, http://citforum.edunet.kz without restrictions, as well as for official purposes - licensing and activation, the latest updates of all licenses software products.

Analytical part

Members of the External Expert Commission got acquainted with the qualitative and quantitative composition of the teaching staff, the material and technical base that is used for the implementation of accredited degree programs.

Personnel policy at AUPET is carried out in accordance with the main priorities of the university strategy. Personnel selection is carried out on the basis of an analysis of the needs of degree programs, based on the results of which a competition is announced to fill vacant positions. According to the rules of competitive filling of positions of scientific and pedagogical personnel of higher educational institutions, approved by Order of the Ministry of Education and Science of the Republic of Kazakhstan dated January 21, 2008 No. 635, the scientific and pedagogical staff of the department is recruited.

The commission notes that human resources are also highly valued at the partner university, where undergraduates in degree programs will study.

A visual inspection, as well as the results of interviewing teaching staff, showed that the Material and Technical Base of the university is sufficient to ensure the quality of education in accordance with the planned learning outcomes.

At the same time, the commission notes that although the university management is taking measures to motivate teaching staff, it is necessary to implement measures to encourage the activities of scientific and pedagogical personnel in order to strengthen the connection between education and scientific research.

As the results of interviewing students showed, the possibilities of distance learning are poorly used during implementation.

Rich experience in scientific research allows universities to actively introduce the latest achievements of science and technology into the educational process directly in the implementation of degree programs.

Strengths/best practices for degree program 6B07123 Systems Engineering, 7M07106 Instrumentation

- The university management has introduced a procedure for stimulating scientific research and advanced technologies in the educational process.

Recommendations for Degree Programs **6B07123 Systems Engineering, 7M07106 Instrumentation**

Consider the possibility of introducing online learning, computer teaching aids, etc. into the educational process. (Deadline: 09/01/2024)

Conclusions of the Higher Expert Commission on the criteria:

According to the “Resources” standard for degree program 6B07123 Systems Engineering, 7M07106 Instrumentation, out of 7 criteria, 1 has a strong position and 6 has a satisfactory position.

6.8. Standard "Transparency and Documentation"

- ✓ *Appropriate information about the collaborative degree program should be documented and published based on the specific needs of mobile learners.*
- ✓ *Information about the joint degree program should take into account the requirements and procedures for admission, catalog of courses/disciplines, examination and assessment procedures, etc.*
- ✓ *Partner educational organizations must have and implement mechanisms for collecting and analyzing information about their activities, about the activities of the partner within the framework of a joint degree program and use the obtained information in the work of the internal quality assurance system.*
- ✓ *The educational organization must ensure the involvement of students and employees in the collection, analysis of information and planning of subsequent procedures.*
- ✓ *When collecting information, the educational organization should take into account the following:*

- key performance indicators;
- information about the student population;
- level of academic performance, student achievement and dropout;
- student satisfaction with the quality of implementation of the joint degree program;
- availability of educational resources and student support services;
- employment of graduates.

Evidence-based part

The Commission of the Independent Accreditation and Rating Agency confirms that the management of degree programs demonstrates the transparency of documenting and forming all the main processes of activities for the implementation of quality education by posting their content on the university website in information packages. They include educational and methodological complexes of disciplines, a reference guide for first-year students, career guidance materials, etc. The management of degree programs ensures transparency in the formation and development of their development plan. It is based on the internal quality assurance system of AUPET education, provided with the necessary regulatory and legal materials posted on the portal - http://www.AUPET.kz. They are freely available - University Development Program, Internal Quality Assurance System Guidelines, University Academic Policy; methodological instructions for types of activities; Regulations and rules for types of activities, job and functional instructions and other regulatory documents.

The procedure for developing degree programs in all areas is to carry out activities in accordance with intra-university documented procedures as the regulations on the degree program of AUPET. At the same time, the interests of employers are taken into account, who are invited to meetings of the department and express their opinion on the compliance of degree programs with the requirements of the labor market, the inclusion of new disciplines or the exclusion of disciplines that have lost their relevance.

Specialists (partners and employers) are involved in external examination in accordance with the presence of higher and postgraduate education, work experience in the relevant field of at least 10-15 years, knowledge of the specifics of the development of the livestock and forestry industries, and interest in the implementation of modern technologies and innovations. Interested parties have the right to vote when approving the development plan for degree programs on the basis of agreements and memorandums with enterprises available at the department.

One of the forms of joint cooperation with employers in the development, management and implementation of degree programs is the conduct of classes (lectures, practical classes) by leading scientists, specialist representatives of research institutes, limited liability partnerships, reserves, laboratories in the field in accordance with the schedule of classes drawn up annually.

The university management uses a variety of ways to disseminate information - the official website of the university (http://www.AUPET.kz). Information is provided by AIS sending information to students' email addresses or Whats App messages indicated on the website. The official accounts of KazATIU on social networks post information about news and events, reviews from students, teachers and guests of the university.

Analytical part

An analysis of compliance with the criteria of the "Transparency of Documentation" standard for accredited degree programs of the commission showed that information about all degree programs, as well as others, are quite fully reflected on the university website. The university website is well structured and contains fairly complete information.

The Commission also notes the fact that all relevant information about degree programs is documented and published on the website. Along with the official website, the management of degree programs have their own accounts on major social networks, through which information on introduced or planned changes in degree programs, admissions, and other information is also disseminated.

However, the websites of partner universities contain fragmentary information, namely

about degree programs in honor of its implementation together with AUPET.

Strengths/best practices for Degree Programs 6B07123 Systems Engineering, 7M07106 Instrumentation

- Strengths according to this standard have not been identified

Recommendations for Degree Programs **6B07123 Systems Engineering, 7M07106 Instrumentation**

Coordinate with partner universities the structure and volume of information about the degree program posted on the websites of these universities and post it (Deadline: 09/01/2024)

Conclusions of the External Expert Commission on the criteria:

According to the standard “Transparency and Documentation” for degree program 6B07123 Systems Engineering, 7M07106 Instrumentation, all 10 criteria are disclosed, according to 9 criteria they have a satisfactory position, and according to 1 - suggesting improvement.

6.9. Standard "Quality Assurance"

- ✓ *Partner education organizations should have a published quality assurance policy as part of their strategic management.*
- ✓ *Quality assurance policies are more effective if they reflect the links between learning, teaching, research and take into account the national contexts in which partner educational organizations operate.*
- ✓ *Internal stakeholders should develop and implement these policies through appropriate structures and processes, with the involvement of external stakeholders.*
- ✓ *Partner education organizations should implement joint internal quality assurance processes in accordance with Part One of the ESG.*
- ✓ *The quality assurance policy supports:*
- ✓ *organizing a quality assurance system that provides for joint internal quality assurance processes of partner educational organizations;*
- ✓ *departments, schools, faculties, institutes and other departments, as well as the management of the educational organization, employees and students performing quality assurance responsibilities;*
- ✓ *academic honesty and freedom, as well as intolerance towards manifestations of various types of academic dishonesty;*
- ✓ *processes that provide intolerance of any kind or discrimination against students and teachers;*
- ✓ *participation of external stakeholders in quality assurance.*

Evidence-based part

The university, in accordance with paragraph 34 of the Model Rules for the Operation of Organizations of Higher and Postgraduate Education, operates an Internal Quality Assurance System (IQA), based on European Standards and Guidelines (ESG). An important element of this system is the Quality Policy. It includes strategic goals and directions for the development of the university, principles for ensuring the quality of education. In full accordance with the Guidelines for the Internal Quality Assurance System, the Quality Committee created at the university, according to a special schedule, conducts audits to verify the compliance of the university’s degree programs with the requirements of the Internal Quality Assurance System. Internal auditors from among the members of the Academic Quality Councils operating at the faculties are involved in conducting audits. This includes, in addition to teachers and department staff, representatives of students and employers.

Documents providing policy and quality assurance for students are posted in open information access on the University website http://www.AUPET.kz. This is a guarantee of openness and transparency not only to employees and students, but also to employers and other interested parties.

External stakeholders - employers, representatives of scientific organizations and production, representatives of other universities - are directly involved in ensuring the quality of education. For example, after completing practical training for students in degree programs, the

heads of the department increased the practical training of students. Therefore, a dual training plan with the aim of conducting certain topics of a practical nature on the basis of production was developed.

The university's quality assurance policy supports the interaction between scientific research, teachers and students. As a result of the implementation of the Targeted Financing Program, which involved students and scientists of the university, the discipline “Information Technologies in Plant Growing” was developed. In addition, when organizing practices, much attention is paid to the presence of a scientific approach in production conditions. The organization of practices is carried out on the basis of normative documents approved in accordance with the established procedure.

Interested parties can become familiar with the quality assurance mechanisms at the university on the university website. www.kazatu.kz.

Analytical part

The External Expert Commission confirms that the university has a published quality assurance policy. Documents ensuring the policy and guarantee of student quality are posted in open information access on the University website https://AUPET.kz/. This is a guarantee of openness and transparency not only to employees and students, but also to employers and other interested parties.

The results of interviews, as well as the study and analysis of documents show that both external stakeholders - employers, representatives of scientific organizations and production, representatives of partner universities, and internal ones - teachers and students themselves, take an active part in ensuring the quality of education. For example, based on the results of students’ practical training in degree programs, the heads of the department received a recommendation to increase the practical training of students in cycles of basic disciplines. The degree programs change plan was developed following discussions with stakeholders. The goal is to conduct certain practical topics on the basis of production.

Strengths/best practices for Degree Programs 6B07123 Systems Engineering, 7M07106 Instrumentation

- Strengths according to this standard have not been identified

Recommendations for Degree Programs **6B07123 Systems Engineering, 7M07106 Instrumentation**

- recommendations on this criterion have not been developed;

Conclusions of the External Expert Commission on the criteria:

According to the “Quality Assurance” standard according to degree program 6B07123 Systems Engineering, 7M07106 Instrumentation, all 9 criteria are disclosed, according to all 9 criteria they have a satisfactory position.

Strengths/best practices for Degree Programs 6B07123 Systems Engineering, 7M07106 Instrumentation Engineering

- No strengths have been identified for this standard

Recommendations for Degree Programs **6B07123 Systems Engineering and 7M07106 Instrumentation Engineering**

- no recommendations on this criterion have been developed;

Conclusions of the External Expert Commission on the criteria:

According to the standard "Quality Assurance" for Degree Programs* 6B07123 Systems Engineering and 7M07106 Instrumentation Engineering *all 9 criteria are disclosed, for all 9 criteria they have a satisfactory position.

6.10. Standard "Continuous Monitoring and Periodic Evaluation of the Joint Degree Program"

- ✓ *Partner educational organizations shall monitor and periodically evaluate the joint degree program to achieve its purpose and to confirm its relevance to the needs of learners and society.*
- ✓ *The results of these processes should lead the educational organizations to continually improve the joint educational program.*
- ✓ *All stakeholders should be informed of any actions planned or taken in relation to the jointeducation program.*
- ✓ *The joint education program should be regularly evaluated and revised with the involvement oflearners and other stakeholders.*

Evidence-based part

Monitoring and evaluation of the degree programs is carried out at the graduating departments, wherean annual report on the implementation of the degree programs is prepared, where self-assessment and analysisof the success of the degree programs development strategy on quantitative and qualitative indicators is carriedout, the report is based on the analysis of the main problems identified as a result of monitoring ofthe scientific and educational process and evaluation of external and internal factors. The maincriterion of success in the implementation of the degree programs is the percentage of employment of graduateson this degree programs and employers' feedback on the university graduates and their academic performance.

In the rating of Higher Education Institutes of RK for 2020-21, 2021-2022, conducted by the Independent Agencyfor Accreditation and Rating, which determines the National Rating of demand for highereducation institutions of RK by directions and levels of training of specialists awarded first and second places

https://atameken.kz/ru/university_ratings

The university has implemented the following mechanisms for collecting, storing andanalyzing information on the implementation of degree programs:

- a system for monitoring the implementation of plans for the development of degree programs;
- different forms of self-assessment;
- self-evaluation of programs in the course of preparation for state certification of the Ministry of Education and Science of the Republic of Kazakhstan;
- self-evaluation of degree programs in the course of preparation for institutional and program accreditation;
- self-assessment of degree programs for compliance with the criteria of rating agencies; annually reviewed programs participate in the rating of the Center of the Bologna Process and Academic Mobility of the Ministry of Education and Science of the Republic of Kazakhstan;
- annual self-assessment of the processes ensuring the implementation of degree programs;
- design, development and active application of information systems in the management of degree programs.

A contract was concluded with the closed joint-stock company "Antiplagiat" (license agreement No. 259).

Antiplagiarism provides the Degree Programs with the following monitoring capabilities: checking of bachelor's theses; checking of master's thesis; checking of doctoral students' theses;

checking of articles by young scientists, as well as academic staff members; checking of methodological guidelines, manuals and textbooks.

All types of Master's theses are subject to plagiarism check. The recommended admissionand defense of master's thesis assumes: the originality of Master's theses is more than 50%.

Master's students undergo anti-plagiarism in the JSC “National Center for State Scientific and Technical Expertise”. There are examples of some conducted examinations in the appendices.According to the results of 2022-2023, certain results of all examinations with Anti-Plagiarism are achieved (certificates of the examination results are presented in Appendix 4.2).

"PLATONUS" provides degree programs with opportunities to monitor: the characteristics of the contingent; criteria characterizing the educational activities necessary for the management of degree programs; the ones of educational process: the formation of statements, recording the results of control rating and intermediate (attestations, examinations, coursework and course projects), aswell as the final control of students (defense of master's theses); the formation of curricula and modular degree programs; various kinds of resources for the implementation of degree programs; planning and implementation of classroom and extracurricular teaching loads.

Access to the electronic journal is available to each teacher in his/her disciplines and to students in all disciplines studied. Thus, the principle of transparency and access to information about the results of control is achieved. The effectiveness of the procedures for evaluating the student is Evidence-based partd by the statistical analysis of students' performance, attestation of graduate students by criteria, which reflects 97% of performance.

The defense of graduate works at the University is carried out in accordance with the normative documents developed and approved by the Ministry of Education and Science of the Republic of Kazakhstan.

The following are among the most frequently noted merits of dissertation work noted by Academic committees:

- the topics of dissertation works are relevant and meet the modern trends of science;
- disclosure of scientific novelty and relevance;
- application of the latest computer programs and programming technologies, use of modern instrumental systems;
- mastery of elements of network technologies and Internet technologies.

Stable enrollment of students, labor market analysis testify to the compliance of degree programs with the requests of applicants, and stable employment of graduates of the cluster specialties testifies to the compliance of their competence with the requirements of qualification.

According to degree programs annual students' scientific research, masters’ scientific research, and doctoral students' scientific research are conducted, in which our students are awarded for their successes and their supervisors are our doctoral students, who receive letters of appreciation:

- Letters of thanks for active participation in the Republican Championship of robotics among universities of RK "Robocon 2021" as scientific supervisors - senior lecturers of degree programs 6B07109 - "Instrumentation" were awarded - doctoral student Ayazbay Abu-Alim, Zhetenbayev Nurrsultan,Nurgyzat Erkebulan and students Eshen Dinmuhammed group PSK-19-4 and Musabaev Azamat PSK-19-1. Seidegaliev Toregali - KTT-19-2 Hackathon (ENU) 2nd place. Appendix 4.3;
- Letters of thanks for active participation in "X International scientific and technical conference dedicated to the memory of the first rector of Almaty University of Power Engineering and Telecommunications Gumarbek Daukeyev" degree program 7M07101-"Electric Power Engineering" – Master.
- Team "Solar Soul" on the work done for the period "1.10-31.10.2022" within the intellectual team competition "Student Energy Challenge" on degree program 7M07101-

"Electric Power Engineering" - master student Baidullina Akzhaina Erlankyzy, Smailova Asel Kairatkyzy won 1.2million tenge.

Analytical part

EEC notes that the results of the questionnaire on issues related to ensuring the quality of the educational process among students, accredited degree programs are statistically processed, discussed at the meetings of departments, Academic staff Council. Also these results are takeninto account in the further planning of educational activities in order to ensure the quality of education.

The monitoring of standard operating procedures by partner universities was not fully reflected in the course of EEC work, for example, there is no information on monitoring by Tomsk University, and no recommendations on improvement of standard operating procedures by partner universities were presented.

The AUPET website has full information on standard operating procedures, but the websites of partner universities provide fragmentary information.

Strengths/best practices for Degree Programs 6B07123 Systems Engineering, 7M07106 Instrumentation Engineering

- No strengths have been identified for this standard

***Recommendations for Degree Programs* 6B07123 Systems Engineering, 7M07106 Instrumentation Engineering**

- recommendations on this criterion have not been developed;

Conclusions of the External Expert Commission on the criteria:

***According to the standard "Continuous Monitoring and Periodic Evaluation of the Joint Degree Program " for Degree Programs* 6B07123 Systems Engineering, 7M07106 Instrumentation Engineering, *all 4 criteria are disclosed, of which 2 have a satisfactory position and 2 suggest improvements*.**

6.11. Standard "Periodic External Quality Assurance Procedures"

✓ *Education partner organizations must undergo external quality assurance procedures in accordance with European Standards and Guidelines (ESG) on a regular basis.*

✓ *The educational organization should ensure that the progress made since the last external quality assurance procedure is taken into account in preparation for the next procedure.*

Evidence-based pat

Accredited SOPs undergo initial accreditation. Standard operating procedure management plans to regularly participate in external quality assurance procedures that take into account the requirements of the legislation within which they operate.

Partner universities are included in many world rankings.

In order to provide highly qualified graduates in the modern labor market, with specialization in the field of instrumentation and systems engineering, accredited standard operating procedures are in high demand at enterprises of various forms of ownership: in state research and production associations, small and medium-sized businesses, including foreign companies . Graduates have a universal set of knowledge, since their area of interest includes almost all areas of modern engineering, and the knowledge gained allows them to solve diverse professional problems at a high professional level.

Analytical part

AUPET regularly undergoes external, national and international quality assessment

procedures, however, not all partner universities (Tomsk University) fully participate in external quality assurance procedures in accordance with European Standards and Guidelines (ESG).

AUPET is accredited according to standard operating procedures for the first time.

Strengths/best practices for Degree Programs 6B07123 Systems Engineering, 7M07106 Instrumentation Engineering

- No strengths have been identified for this standard

***Recommendations for Degree Programs* 6B07123 Systems Engineering, 7M07106 Instrumentation Engineering**

Conduct negotiations with partner universities about their participation in external international quality assurance procedures (Deadline: 01.01.2025)

Conclusions of the External Expert Commission on the criteria:

According to the standard "Periodic External Quality Assurance Procedures" for Degree Programs 6B07123 Systems Engineering,* 7M07106 Instrumentation Engineering, 2 *criteria are disclosed, of which 1 has a satisfactory position and 1 suggests improvements.

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

Strengths/best practices for Degree Programs 6B07123 Systems Engineering, 7M07106 Instrumentation Engineering

Standard "Right to Participation (Eligibility)"
No strengths have been identified for this standard

Standard "Learning Outcomes"
- No strengths have been identified for this standard

Standard "Program Development and Approval"
- No strengths have been identified for this standard

Standard "Admission, Performance, Recognition and Certification of Students"
- No strengths have been identified for this standard

Standard "Student-Centered Learning, Teaching and Assessment of Learning"
- No strengths have been identified for this standard

Standard "Support for Students"
- No strengths have been identified for this standard

Standard "Resources"
- The university management has introduced the procedure of stimulating scientific research and advanced technologies in the educational process.

Standard "Transparency and Documentation"
- No strengths have been identified for this standard

Standard "Quality Assurance"
- No strengths have been identified for this standard

Standard "Continuous Monitoring and Periodic Evaluation of the Joint Degree Program"
- No strengths have been identified for this standard

Standard "Periodic External Quality Assurance Procedures"
- No strengths have been identified for this standard

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

Recommendations for Degree Programs **6B07123 Systems Engineering, 7M07106 Instrumentation Engineering**

Standard "Right to Participation (Eligibility)"

Develop a plan of participation of partner universities in the implementation of standard operating procedures,with the allocation of specific disciplines, modules, etc. implemented with the involvement ofresources of partner universities, including the use of distance technologies (Deadline: 01.09.2024).

Adjust the agreement on the implementation of the standard operating procedures with a clear allocation of rights and obligations between partner universities in terms of standard operating procedure management and financing (Deadline: 01.01.2025)

Adjust the agreement on the implementation of the standard operating procedures with the allocation of responsibilities for the recruitment of applicants by partner universities and the mechanism of interaction during the admission campaign (Deadline: 01.01.2025)

Determine the numerical values of indicators stimulating academic mobility of students and academic staff during the implementation of standard operating procedures (Deadline: 01.01.2025)

Standard “Learning Outcomes”

- No recommendations have been made for this standard.

Standard "Program Development and Approval"

- No recommendations on this criterion have been developed;

Standard "Admission, Performance, Recognition and Certification of Students"

- No recommendations on this criterion have been developed;

Standard “Student-Centered Learning, Teaching, and Assessment of Learning”

Consider the possibility of introducing an additional program of mastering languages ofthe countries where partner universities are located in order to overcome the language barrier andfully implement the standard operating procedures (Deadline: 01.09.2025)

Standard "Support for Students"

Develop a procedure of interaction between the structural units of partner universitiesand the management of the degree programs. This will ensure prompt support of the needs of different groups of students in terms of mastering standard operating procedures (Deadline: 01.09.2025)

Standard "Resources"

Consider the possibility of introducing on-line learning, computer-based learning tools,etc. into the educational process of standard operating procedure implementation. (Deadline: 01.09.2024)

Standard “Transparency and Documentation”

To coordinate with partner universities the structure and volume of information on standard operating procedures to be placed on the websites of these higher education institutions and to place it (Deadline: 01.09.2024)

Standard "Quality Assurance"

- No recommendations on this criterion have been developed;

Standard "Continuous Monitoring and Periodic Evaluation of the Joint Degree Program"

- No recommendations on this criterion have been developed;

Standard "Periodic External Quality Assurance Procedures"

Negotiate with partner universities on their participation in external international quality assurance procedures (Deadline: 01.01.2025)

(IX) RECOMMENDATION TO THE ACCREDITATION COUNCIL

Annex 1: EVALUATION TABLE "Conclusion of the External Expert Committee"

34 6

No. n/a	Evaluation criteria	Position of the educational organization			
		Strong	Satisfactory	Assumes improvement	Unsatisfactory
Standard "Right to Participation. Eligibility."					
1.	Educational organizations planning to implement a joint degree program must be recognized by the relevant authorities of the country in which they are located.		+		
2.	Participation in the implementation of a joint degree program, awarding of a joint academic degree must comply with national regulations		+		
3.	The academic degree(s) awarded should be in line with the national qualification system of the countries in which the educational organizations are located		+		
4.	A joint degree program should be developed and subject to implementation with the involvement of all partner educational organizations			+	
5.	The conditions of development, implementation of a joint degree program should be clearly stated in the agreement on cooperation between partner educational organizations		+		
	The following shall be set forth in the cooperative document:				
6.	information on the academic degree (qualification, degrees) awarded upon mastering (completion) of the joint degree program		+		
7.	coordination and responsibility of the involved partner education organizations with regard to management and financial organization (including funding, cost and revenue sharing, etc.)			+	
8.	rules of admission and selection of students			+	
9.	mobility of students and teachers			+	
10.	rules of examinations, methods of assessment of achieved results of students, recognition of ECTS credits and procedures for awarding joint academic degrees		+		
	Total standard	0	6	4	0
Standard "Learning Outcomes"					
1.	The cooperative degree program must be designed in accordance with established objectives, including intended learning outcomes		+		

2.	The qualifications resulting from the joint degree program should be clearly defined, explained and correspond to a certain level of the national qualifications framework in higher education and therefore to the framework of qualifications in the European Higher Education Area (FQ- EHEA).		+		
3.	The disciplines of the joint degree program should ensure the achievement of planned learning outcomes, including knowledge, skills and competencies of the relevant field(s) of education		+		
4.	The joint degree program should ensure the achievement of planned learning outcomes by each student		+		
5.	The joint degree program, if relevant, shall take into account the minimum agreed learning conditions specified in the European Union Directive 2005/36/ EC or the relevant common learning framework established in accordance with the Directive		+		
	Total standard	0	5	0	0
Standard "Program Development and Approval"					
1.	The structure and content of the joint degree program should be defined and developed on the basis of a student-centered approach in training to ensure the achievement of planned results		+		
2.	The joint degree program should be developed with the participation of students and other stakeholders		+		
3.	The European Credit Transfer System (ECTS) should be applied correctly, and the distribution of credits should be clear		+		
4.	The joint degree program ensures coverage of the required volume of workload. A bachelor's program is at least 180-240 ECTS credits; a joint master's program is at least 90-120 ECTS credits and must not be less than 60 ECTS credits at the second level of the cycle (credit ranges according to FQ-EHEA); no credit range is specified for joint PhD programs		+		
5.	The joint degree program has mechanisms to control the teaching load and the average time to complete the program		+		
	Total standard	0	5	0	0
Standard "Admission, Performance, Recognition and Certification of Students"					
1.	Partner educational organizations must have predetermined, published and consistently applied admission rules and related requirements for applicants		+		
2.	Selection procedures should be appropriate to the level of the joint degree program and discipline governing all periods of the "life cycle" of learning, i.e., admission, performance, recognition, and certification		+		

3.	Recognition of qualifications and periods of study (including recognition of prior learning) should be applied in accordance with the Lisbon Recognition Convention and supporting documents		+		
	Total standard	0	3	0	0
Standard "Student-Centered Learning, Teaching, and Assessment of Learning"					
1.	The joint degree program should be developed in accordance with the planned learning outcomes		+		
2.	The learning and teaching approaches used should be appropriate for their achievement of the intended learning outcomes		+		
3.	The joint degree program should respect and accommodate the diversity of students and their needs, including potentially different cultural backgrounds of students			+	
4.	Examination rules and assessment of the achieved learning outcomes should be in line with the intended learning outcomes		+		
5.	Examinations and assessment of the results achieved by students should be conducted by partner educational organizations in accordance with the established rules		+		
	Total standard	0	4	1	0
Standard "Student Support"					
1.	Partner universities should ensure the functioning of appropriate support services for students, contributing to the achievement of planned learning outcomes		+		
2.	Student support services should support the achievement of planned learning outcomes		+		
3.	Student support services should take into account possible specific problems of mobile students		+		
4.	Support services should consider the needs of different groups of students (mobile students, adults, working adults, distance students, and students with disabilities) and take into account the principles of a student-centered approach in learning and teaching when allocating, planning, and providing educational resources			+	
	Total standard	0	3	1	0
Standard "Resources"					
1.	The teaching staff should be sufficient and adequate (qualifications, professional and international experience) to implement the joint degree program		+		
2.	The facilities provided should be sufficient and appropriate in relation to the intended learning outcomes		+		

	Partner educational organizations are responsible for the quality of their staff and for providing a favorable environment for them to work effectively. Therefore,				
	educational organizations recognizing the importance of teaching should:				
3.	develop clear, transparent and objective criteria for hiring, appointment, promotion and dismissal of employees and adhere to them in their activities		+		
4.	provide opportunities for career growth and professional development of teachers		+		
5.	encourage scientific activities to strengthen the link between education and research	+			
6.	promote innovative learning and teaching methods and the use of advanced technologies		+		
7.	The educational organization should strive to ensure that the educational equipment and software tools used to ensure that students achieve the planned outcomes of the joint degree program are similar in the relevant industries		+		
	Total standard	1	6	0	0
Standard "Transparency and Documentation"					
1.	Relevant information about the joint degree program should be documented and published, taking into account the specific needs of mobile students			+	
2.	Information about the joint degree program should address admission requirements and procedures, course/discipline catalog, examination and grading procedures, etc.		+		
3.	Educational organizations-partners should have and implement mechanisms for collecting and analyzing information on their own activities, on the activities of the partner in the framework of the joint degree program and use the obtained information in the work of the internal quality assurance system.		+		
4.	The educational organization should ensure the involvement of trainees and staff in collecting, analyzing information and planning follow-up procedures		+		
	The educational organization should consider the following when collecting information:				
5.	key performance indicators		+		
6.	student population		+		
7.	level of academic performance, student achievement and dropout rates		+		
8.	satisfaction of students with the quality of implementation of the joint degree program		+		

9.	accessibility of educational resources and student support services		+		
10.	graduate employment		+		
	Total standard	0	9	1	0
Standard "Quality Assurance"					
1.	Partner education organizations should have a published quality assurance policy that is part of their strategic management		+		
2.	Quality assurance policies are more effective when they reflect the link between learning, teaching, research and take into account the national contexts in which partner educational organizations operate.		+		
3.	Internal stakeholders should develop and implement these policies through appropriate structures and processes, involving external stakeholders.		+		
4.	Partner education organizations should apply joint internal quality assurance processes in accordance with Part One of the ESG		+		
	The quality assurance policy supports				
5.	organizing a quality assurance system involving joint internal quality assurance processes of partner educational organizations		+		
6.	to departments, schools, faculties, institutes and other units, as well as the leadership of the educational organization, staff and students with quality assurance responsibilities		+		
7.	academic honesty and freedom, as well as intolerance for manifestations of academic dishonesty of various kinds		+		
8.	processes that provide intolerance of any kind or discrimination against learners and teachers		+		
9.	involvement of external stakeholders in quality assurance		+		
	Total standard	0	9	0	0
Standard "Continuous Monitoring and Periodic Evaluation of the Joint Degree Program"					
1.	Partner educational organizations should monitor and periodically evaluate the joint degree program to ensure that it achieves its purpose and confirms its relevance to the needs of students and society			+	
2.	The results of these processes should lead the educational organizations to continually improve the joint degree program			+	
3.	All stakeholders should be informed of any actions planned or taken in relation to the joint degree program		+		
4.	The joint degree program should be regularly evaluated and revised with the involvement of students and other stakeholders		+		

	Total standard	0	2	2	0
Standard "Periodic External Quality Assurance Procedures"					
1.	Partner education organizations should undergo external quality assurance procedures in accordance with European Standards and Guidelines (ESG) on a regular basis			+	
2.	The educational organization shall endeavour to ensure that the progress made since the last external quality assurance procedure is taken into account in preparing for the next procedure			+	
	Total standard	0	0	2	0
	TOTAL	1	52	11	0

Annex 2. PROGRAM OF THE VISIT TO THE EDUCATIONAL ORGANIZATION

Date of the visit: March 11-13, 2024

Date and time	EEC work with target groups	Position and Surname, First Name, Patronymic of the participants of the focus groups	Communication Form
		March 9, 2024	
15.00-16.00 *Astana time*	EEC pre-meeting	*IAAR external experts*	Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
		March 10, 2024	
On schedule during the day	Arrival of the members of the External Review Panel		
20.00	Dinner	*IAAR external experts*	
		Day 1: March 11, 2024	
08.10-09.00	Transfer from the hotel to the University	*HEI Coordinator - Azhar Yerlanovna Mankhanova (Director of Academic Affairs Department) 87772983128*	
09.00-09.15	Distribution of experts' responsibilities, solution of organizational issues	*IAAR external experts*	Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
09.15-09.45	Interview with the Rector	***Rector - Murat Kanatovich Syzdykov***	Auditorium No. 213 A of the building Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
09.45-10.00	Technical break		

10.00-10.40	Interviews with vice-rectors	Vice-Rector for Academic Affairs - Aigul Saparbekovna Sarenova, Vice-rector for social and educational work - Yermek Kamalbekuly Kadylbekov, Chief of Staff of the Rector's Office - Zhanat Kuanyshevich Esimzhanov	Auditorium No. 213 A of the building Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
10.40-10.50	Technical break		
10.50-11.30	Interviews with heads of structural subdivisions of educational organizations	Digital officer - Margulan Maksutovich Urazakov, The head of the registrar's office is Vera Vasilievna Neledva, Financial Director - Gulziya Salatovna Rakhmetova, Director of Academic Affairs - Azhar Erlanovna Mankhanova, The head of the Academic Advising Center is Zhuldyz M. Kudaibergen, Director of the Youth Policy Department - Elikbay Kasenkhanuly Kabi, The chief librarian is Natalya Netesova, Responsible Secretary of the Admissions Committee - Kamshat Bimuratovna Almuratova.	Auditorium No. 213 A of the building Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
11.30-11.45	Exchange of views of the members of the external expert committee		Auditorium No. 210 A of the building Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
11.45-12.30	Interviews with Heads of Departments and Heads of main curriculum	CHALLENGES: Department of IT Engineering - Laila Muratbekovna Tukenova, Department of Electrical Power Engineering - Yernar Tanibergenovich Amitov, Department of Renewable and Alternative Energy Sources - Zhandos Sapargalievich Shynybai, Department of Ecology and Management in Engineering - Asel Amangeldievna Abikenova, Department of Space Engineering – Sanat Tolendiuly, Department of Electronic Engineering - Sandugash Kudaibergenovna Orazalieva, DEVELOPERS OF THE DEGRE PROGRAMS:	Auditorium No. 213 A of the building

		OP Entrepreneurship in Engineering - head Laura Syreuovna Nurmuratova, OP Life Safety and Environmental Protection - Elena Mikhailovna Tyshchenko, Electric Power Industry - Mikhail Bashkirov, Electric power systems - Yertugan Kozhagulovich Umbetkulov, Electric power systems - Lyazzat Shynbolatovna Uteshkalieva, Computer science and software; - Utegenova A.U., Renewable Energy Technologies - Soltanaev A., Automated Electromechanical Systems - Almuratova N.K., Modern Innovative Renewable Energy Technologies - Tergemes K.T. Instrumentation - Yusupova S.A.	
12.30-13.00	EEC work	*IAAR external experts*	Auditorium No. 213 A of the building . Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
13.00-14.00	***Lunch***		
14.00-14.15	Exchange of views of the members of the external expert committee		Auditorium No. 213 A of the building Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
14.15-15.00	Interviews with academic staff members of main curriculum	*Annex 1*	Auditorium No. 213 A of the building Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
15.00-15.15	Technical break		
15.00-16.00	Questionnaire survey of academic staff members (in parallel)	*Annex 1*	The link is sent to the academic staff member's e-mail address personally

15.15-16.00	Interviews with students of main curriculum	*Annex 2*	Auditorium No. 213 Building A Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
16.00-17.00	Questioning of students (in parallel)	*Annex 2*	The link is sent to the e-mail address of the trainee personally
16.15-18.00	Visual inspection of the educational organization and material-technical and training-laboratory facilities	*Itinerary* *Annex 3*	
18.00-19.00	EEC work discussion of the results of the first day	*IAAR external experts*	Auditorium No. 210 Building A Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
19.00-20.00	Dinner		
Day 2: March 12, 2024			
08.10-09.00	Transfer from the hotel to the University		
09.00-09.15	EEC work		Auditorium No. 210 Building A Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
09.15-10.50	Attendance at scheduled classes (Appendix: links to classes)	*IAAR external experts* *Annex 4*	
10.50-11.30	Meeting with stakeholders (representatives of practice centers and employers)	*Annex 5*	Auditorium No. 213 Building A Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
11.30-11.40	Technical break		

11.40-13.00	Work with documents *(documents must be uploaded to the cloud in advance)*		Auditorium No. 210 Building A
13.00-14.00	**Lunch**		
14.00-14.15	Technical break		
14.15-15.00	Interviews with graduates of main curriculum	*Annex 6*	Auditorium No. 213 Building A Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
15.00-17.00	Selective visit to the practice bases of the degree programs	*Annex 7*	
17.00-17.15	Technical break		
17.00-18.00	EEC work, discussion of the results of the second day and parameters of the profiles *(recording is in progress)*		Auditorium No. 210 Building A Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
18.30-19.30	Dinner		
Day 3: March 13, 2024			
08.10-09.00	Transfer from the hotel to the University		
09.00-10.00	Work of the EEC Development and discussion of recommendations *(recorded)*	*IAAR external experts*	Auditorium No. 210 Building A Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
10.00-10.20	Technical break		
10.20-12.30	EEC work discussion,	*IAAR external experts*	Auditorium No. 210 Building A

	decision-making by voting (recorded)		Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
12:30-13:00	Final meeting of the EEC with the university administration		Auditorium No. 213 Building A Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
13.00-14.00	Lunch		
14.00-15.00	EEC work, Discussion of quality assessment results	*IAAR external experts*	Auditorium No. 210 Building A Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588
15.00-15.15	Technical break		
15.15-18.00	EEC work, Discussion of quality assessment results	*IAAR external experts*	Auditorium No. 213 Building A Connect to a Zoom conference https://us02web.zoom.us/j/6813032588 Conference ID: 681 303 2588

Appendix 3. RESULTS OF THE QUESTIONNAIRE SURVEY OF TEACHERS

Annex 3

Results of anonymous questionnaire survey of the academic staff

Almaty University of Power Engineering and Telecommunications

1. Total number of questionnaires: 60

2. 3. Position

Professor	7 people.	11.7%
Associate Professor	13 people.	21.7%
Senior Lecturer	29 people.	48.3%
Teacher	9 people.	15%
Head of Department	1 person.	1.7%
Acting Professor	1 person.	1.7%
Acting Assistant Professor	0 people.	0%

4. Academic degree, academic title

Honored Worker of the Republic of Kazakhstan	0 people.	0%
Doctor of Sciences	4 people.	6.7%
Candidate of Sciences	12 people.	20%
Master	36 people.	60%
PhD	8 people.	13.3%
Professor	5 people.	8.3%
Associate Professor	3 people.	5%
No	1 person.	1.7%

5. Length of service

Less than 1 year	2 people.	3.3%
1 year - 5 years	16 people.	26.7%
Over 5 years	42 people.	70%

№	Questions	Very good	All right.	Relatively bad	Bad	It's too bad	No answer
6	To what extent does the content of the degree program meet your academic and professional interests and needs?	34 people. (56.7%)	26 people. (43.3%)	0 people. (0%)	0 people. (0%)	0 people. (0%)	-

7	How do you assess the opportunities provided by the University for the professional development of the academic staff?	22 people. (36.7%)	34 people. (56.7%)	4 people. (6.7%)	0 people. (0%)	0 people. (0%)	-
8	How do you assess the opportunities provided by the University for career development of the academic staff?	17 people. (28.3%)	41 people. (68.3%)	2 people. (3.3%)	0 people. (0%)	0 people. (0%)	-
9	How do you assess the degree of academic freedom of the academic staff?	17 people. (28.3%)	43 people. (71.7%)	0 people. (0%)	0 people. (0%)	0 people. (0%)	-
	The extent to which teachers can utilize their own						
10	• Strategies	25 people. (41.7%)	33 people. (55%)	1 person. (1.7%)	1 person. (1.7%)	0 people. (0%)	-
11	• Methods	26 people. (43.3%)	32 people. (53.3%)	2 people. (3.3%)	0 people. (0%)	0 people. (0%)	-
12	• Innovation in the learning process	21 people. (35%)	37 people. (61.7%)	2 people. (3.3%)	0 people. (0%)	0 people. (0%)	-
13	How do you evaluate the work on the organization of medical care and disease prevention at the university?	12 people. (20%)	41 people. (68.3%)	6 people. (10%)	1 person (1.7%)	0 people (0%)	-
14	How much attention is paid by the institution's management to the content of the degree program?	22 people. (36.7%)	38 people. (63.3%)	0 people. (0%)	0 people (0%)	0 people (0%)	-
15	How do you assess the sufficiency and availability of necessary scientific and educational literature in the library?	17 people. (28.3%)	41 people. (68.3%)	2 people. (3.3%)	0 people (0%)	0 people (0%)	-
16	Evaluate the level of conditions created, taking into account the needs of different groups of students?	11 people. (18.3%)	43 people. (71.7%)	6 people. (10%)	0 people (0%)	0 people (0%)	-
	Assess the accessibility of the manual						
17	• Students	17 people. (28.3%)	43 people. (71.7%)	0 people. (0%)	0 people (0%)	0 people (0%)	-
18	• Teachers	15 people. (25%)	43 people. (71.7%)	2 people. (3.3%)	0 people (0%)	0 people (0%)	-
19	Evaluate the involvement of academic staff members in managerial and strategic decision-making process	9 people. (15%)	43 people. (71.7%)	7 people. (11.7%)	1 person (1.7%)	0 people (0%)	-
20	How are academic staff members encouraged to be innovative?	17 people. (28.3%)	39 people. (65%)	4 people. (6.7%)	0 people (0%)	0 people (0%)	-
21	Assess the level of feedback from academic staff to management	17 people. (28.3%)	40 people. (66.7%)	2 people. (3.3%)	1 person. (1.7%)	0 people. (0%)	-
22	What is the level of stimulation and involvement of young professionals in the educational process?	22 people. (36.7%)	33 people. (55%)	5 people. (8.3%)	0 people. (0%)	0 people (0%)	-
23	Evaluate the opportunities created for professional and personal growth for each academic staff and staff member	20 people. (33.3%)	37 people. (61.7%)	3 people. (5%)	0 people (0%)	0 people (0%)	-
24	Assess the adequacy of recognition of teachers' potential and abilities	14 people. (23.3%)	44 people. (73.3%)	2 people. (3.3%)	0 people (0%)	0 people. (0%)	-
	How the work is delivered						
25	• On academic mobility	14 people. (23.3%)	42 people. (70%)	3 people. (5%)	1 person. (1.7%)	0 people. (0%)	-

26	• On professional development of academic staff members	20 people. (33.3%)	36pc. (60%)	3 persons (5%)	1 person (1.7%)	0 people. (0%)	-
	Evaluate the support of the university and its management						
27	• Research endeavors of academic staff members	18 people. (30%)	38 people. (63.3%)	3 people. (5%)	1 person. (1.7%)	0 people. (0%)	-
28	• Development of new degree programs/curricular disciplines/methods	23 people. (38.3%)	37 people. (61.7%)	0 people (0%)	0 people. (0%)	0 people. (0%)	-
	Assess the level of academic staff members' ability to combine teaching						
29	• With scientific research	17 people. (28.3%)	30 people. (50%)	11 people. (18.3%)	2 people. (3.3%)	0 people (0%)	-
30	• With practical activities	13 people. (21.7%)	37 people. (61.7%)	8 people (13.3%)	2 people. (3.3%)	0 people (0%)	-
31	Assess the extent to which the knowledge of students received at this university corresponds to the realities of the requirements of the modern labor market	21 people. (35 %)	37 people. (61.7%)	2 people. (3.3%)	0 people. (0%)	0 people. (0%)	-
32	How do the management and administration of the university perceive criticism?	11 people. (18.3%)	41 people. (68.3%)	6 people. (10%)	1 person. (1.7%)	1 person. (1.7%)	-
33	Evaluate how well your study load matches your expectations and capabilities	17 people. (28.3%)	37 people. (61.7 %)	5 people. (8.3%)	1 person. (1.7%)	0 people. (0%)	-
34	Evaluate the focus of degree programs/curricula on the formation of students' skills and abilities to analyze the situation and make forecasts	19 people. (31.7%)	39 people. (65%)	2 people. (3.3%)	0 people. (0%)	0 people. (0%)	-
35	Assess the extent to which the degree program meets the expectations of the labor market and employers in terms of content and quality of implementation	19 people. (31.7%)	40 people. (66.7%)	1 person. (1.7%)	0 people. (0%)	people. (0%)	-

36. ***Why do you work at this particular university?***

- ✓ *I am attracted by the values and objectives of this university, focused on the development of an innovative educational environment for all participants of the educational process. I am confident that my contribution to academic activities will help students to successfully achieve their educational and career goals at AUPET.*
- ✓ *Good laboratory facilities in physics and engineering*
- ✓ *I am a graduate of this university*
- ✓ *Level high*
- ✓ *AUPET has a reputation as one of the best universities in the country.*
- ✓ *AUPET is my first step*
- ✓ *The team, one of the foremost technical universities*
- ✓ *Because I graduated here*
- ✓ *Doing so may cause damage to the university, which may result in injury or death.*
- ✓ *The reason for choosing this university is that it allows young professionals to work freely*
- ✓ *Only here there is the direction of Renewable Energy Sources*
- ✓ *I am a graduate of Energo, in the future I want to invest in my Energo*
- ✓ *I am a graduate of AUPET*
- ✓ *Opportunity for professional growth*
- ✓ *I GRADUATED FROM THIS UNIVERSITY, I WANT TO FURTHER DEVELOP MY EDUCATION*
- ✓ *I graduated from this school*
- ✓ *Because I studied at this higher educational institution and developed here*
- ✓ *There's no corruption*
- ✓ *Good team, fair working conditions*
- ✓ *I like the place of study*

- ✓ *A graduate of this educational institution*
- ✓ *Doing so may cause the device to become uncomfortable.*
- ✓ *Because AUPET is one of the leading universities in the country*
- ✓ *In the technical direction, the university*
- ✓ *Due to the fact that he is a graduate of AUPET and has a lot of advantages in the field of electric power engineering*
- ✓ *The AUPET is a major player in the electric power industry and is also a major player in the energy sector.*
- ✓ *AUPET is the leading university in the Republic of Kazakhstan. There is an opportunity to realize your professional and personal aspirations*
- ✓ *There is a match for my profession*
- ✓ *This is one of the best universities, I love working here*
- ✓ *I think I can contribute to the education process by helping students develop and achieve their goals*
- ✓ *Doing so may cause the device to become uncomfortable and may result in fire or electric shock.*
- ✓ *I would say that it is one of the best and unique educational institutions in technical direction*
- ✓ *I like to share knowledge of the energy industry*
- ✓ *AUPET is one of the strongest technical universities in Kazakhstan*
- ✓ *The presence of a department related to my specialty*
- ✓ *A good university*
- ✓ *I like working here*
- ✓ *Because my work is appreciated here*
- ✓ *I am proud to work at AUPET named after Gumarbek Daukeyev*
- ✓ *Stability*
- ✓ *One of the most prestigious universities in the country for training specialists*
- ✓ *I like the composition of the academic staff*
- ✓ *The work of the academic staff is appreciated here, clear organization and control of the educational process.*
- ✓ *I think that it has its own place among universities*
- ✓ *As a graduate and as an employee of the university, I can say that AUPET is one of the best technical universities in Kazakhstan*
- ✓ *consistent with my education and qualifications*
- ✓ *The best technical university*
- ✓ *Discipline, demand, responsibility*
- ✓ *An excellent university, according to reviews from my colleagues from other universities, friends, relatives and graduates, has an engineering direction that matches my education*
- ✓ *This is my hometown school*
- ✓ *it's my home school.*
- ✓ *I am provided with comfortable conditions to realize my potential*
- ✓ *Favorable working conditions*
- ✓ *Because here I can apply my knowledge and skills in teaching students, also have the opportunity to contribute to the educational process.*
- ✓ *To educate the youth*
- ✓ *The only university specialized in the energy sector*
- ✓ *Started my undergraduate studies here and liked the academic staff very much and when I was called to work with them, I gladly accepted*

37. How often are master classes and reading topics with practitioners organized as part of your course?

very often	4 people.	6.7%
often	20 people.	33.3%
sometimes	34 people.	56.7%
very rare	1 person.	1.7%
never	1 person.	1.7%

38. How often do external guest lecturers (domestic and foreign) participate in the training process?

very often	5 people.	8.3%
often	16 people.	26.7%
sometimes	32 people.	53.3%
very rare	6 people.	10%
never	1 person.	1.7%

39. How often do you face the following problems in your work: (please give an answer in each line)

	Often	Sometimes.	Never	No answer
Lack of classrooms	6 people. (10%)	30 people. (50%)	24 people. (40%)	-
Unbalanced teaching load by semesters	6 people. (10%)	29 people. (48.3%)	25 people. (41.7%)	-
Inaccessibility of necessary literature in the library	0 people. (0%)	32 people. (53.3%)	28 people. (46.7%)	-
Overcrowding of study groups (too many students in a group)	10 people. (16.7%)	23 people. (38.3%)	27 people. (45%)	-
Uncomfortable schedule	5 people. (8.3%)	24 people. (40%)	31 people. (51.7%)	-
Inadequate conditions for classroom instruction	9 people. (15%)	31 people. (51.7%)	20 people. (33.3%)	-
No Internet access/weak Internet access	13 people. (21.7%)	33 people. (55%)	14 people. (23.3%)	-
Lack of students' interest in learning	3 people. (5%)	34 people. (56.7%)	23 people. (38.3%)	-
Failure to receive information on events in a timely manner	0 people. (0%)	23 people. (38.3%)	37 people. (61.7%)	-
Lack of technical means in classrooms	9 people. (15%)	36 people. (60%)	15 people. (25%)	-
Other problems	- *No* *No problem* *There's no time left to produce an article. Equipping lecture halls,* *lacking projectors. I don't notice any pronounced problems* *NO INTERNET. B218 ELECTRICITY NOT CONNECTED* *There's no* *Inadequate number of sockets in the auditorium. Lack of technical provision of lecture rooms* *No* *Deficit of classroom fund* *1.It is necessary to take into account co-authorship in articles in Scopus journals not only in the order of 1 priority (1 author, 2 co-authors, 3 co-authors, etc.), because it is difficult enough to be 1 author, mostly 1-2 authors go to the defense of dissertations, but to take into account the participation of the teacher. Each such article with the name of our university "AUPET named after G. Daukeyev" is published in major publications abroad, and this is an image.* *No problems No problems* *Shortage of projectors and monitors* *No problems* *No* *Doing so will result in cleaning at 8:00 a.m. when the device is*			

	not in use. *None, except as noted above internet quality* *Problemlar bolgan emes Internet problems* *Only to be honest the amount of cash legal funds in the payroll*

40. There are many different facets and aspects of university life that affect every academic staff and staff member in one way or another. Evaluate how satisfied you are:

Question	Completely satisfied	Partially satisfied	Not satisfied	I can't answer that
The attitude of the university administration towards you	37 people. (61.7%)	21 people. (35%)	0 people. (0%)	2 people. (3.3%)
Relationship with direct management	45 people. (75%)	12 people. (20%)	0 people. (0%)	3 people. (5%)
Relationships with colleagues in the department	55 people. (91.7%)	5 people. (8.3%)	0 people. (0%)	0 people. (0%)
Participation in management decision-making	39 people. (65%)	14 people. (23.3%)	3 people. (5%)	4 people. (6.7%)
Relationships with students	55 people. (91.7%)	5 people. (8.3%)	0 people. (0%)	0 people. (0%)
Your successes and accomplishments are recognized by the administration	41 people. (68.3%)	15 people. (25%)	1 person. (1.7%)	3 people. (5%)
Supporting your suggestions and comments	36 people. (60%)	20 people. (33.3%)	0 people. (0%)	4 people. (6.7%)
Activity of the university administration	39 people. (65%)	3 people. (26.7%)	2 people. (3.3%)	3 people. (5%)
Terms and conditions of labor remuneration	27 people. (45%)	24 people. (40%)	6 people. (10%)	3 people. (5%)
Working conditions, list and quality of services provided at the university	35 people. (58.3%)	20 people. (33.3%)	1 person. (1.7%)	4 people. (6.7%)
Occupational health and safety	44 people. (73.3%)	14 people. (23.3%)	1 person. (1.7%)	1 person. (1.7%)
Management of changes in the university's activities	29 people. (48.3%)	24 people. (40%)	2 people. (3.3%)	5 people. (8.3%)
Provision of a social package: vacation, sanatorium treatment, etc.	22 people. (36.7%)	21 people. (35%)	7 people. (11.7%)	10 people. (16.7%)
Organization and quality of catering at the university	36 people. (60%)	17 people. (28.3%)	4 people. (6.7%)	3 people. (5%)
Organization and quality of medical care	30 people. (50%)	21 people. (35%)	3 people. (5%)	6 people. (10%)

Annex 4. RESULTS OF STUDENT SURVEY

Total number of questionnaires: 13

1. Your degree program?

2. Gender

Male	2 people.	15.4%
Female	11 people.	84.6%

3. Please rate how satisfied you are with the following:

Questions	Completely satisfied	Partially satisfied	Partially unsatisfied	Not satisfied	I'm having trouble reply
1. Relationship with the dean's office	11 people (84.6 %)	1 person (7.7 %)	1 person (7.7%)	0 people (0 %)	0 people (0 %)
2. The level of accessibility of the dean's office	11 people (84.6%)	2 persons (15.4%)	0 people (0 %)	0 people (0 %)	0 people (0 %)
3. Level of accessibility and responsiveness of university management	10 persons (76.9 %)	3 persons (23.1%)	0 people (0 %)	0 people (0 %)	0 people (0 %)
4. Accessibility of academic advising to you	7 people (53.8 %)	6 people (46.2%)	0 people (0 %)	0 people (0 %)	0 people (0 %)
5. Support with training materials during the training process	8 people (61.5 %)	4 people (30.8%)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)
6. Accessibility of counseling for personal problems	9 people (69.2 %)	3 persons (23.1 %)	0 people (0 %)	0 people (0 %)	1 person (7.7 %)
7. The relationship between the student and the instructor	9 people (69.2 %)	4 people (30.8 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
8. Financial and administrative services of the educational institution	8 people (61.5 %)	3 persons (23.1 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)
9. Accessibility of health care services	8 people (61.5 %)	3 persons (23.1 %)	0 people (0 %)	0 people (0 %)	2 persons (15.4 %)
10. Quality of medical care at the university	8 people (61.5 %)	2 persons (15.4 %)	1 person (7.7 %)	0 people (0 %)	2 persons (15.4 %)
11. Level of accessibility of library resources	10 persons (76.9 %)	3 persons (23.1 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
12. Quality of services provided in libraries and reading rooms	11 people (84.6 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
13. Satisfaction with the existing educational resources of the university	9 people (69.2 %)	3 persons (23.1 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)
14. Accessibility of computer labs	9 people (69.2 %)	3 persons (23.1 %)	0 people (0 %)	1 person (7.7 %)	0 people (0 %)
15. Availability and quality of Internet resources	8 people (61.5 %)	5 people (38.5 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
16. Content and information content of the website of educational	11 people (84.6 %)	1 person (7.7 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)
17. Training rooms, classrooms for large groups	8 people (61.5 %)	2 persons (15.4 %)	3 persons (23.1 %)	0 people (0 %)	0 people (0 %)
18. Student restrooms (if available)	6 people (46.2 %)	2 persons (15.4 %)	1 person (7.7 %)	3 persons (23.1 %)	1 person (7.7 %)
19. Clarity of the procedure for taking disciplinary action	9 people (69.2 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)	2 persons (15.4 %)

Questions	Completely satisfied	Partially satisfied	Partially unsatisfied	Not satisfied	I'm having trouble reply
20. The quality of the degree program as a whole	9 people (69.2 %)	4 people (30.8 %)	0 people (0 %)	0people (0 %)	0 people (0 %)
21. Quality of curricula in the OP	12 people (92.3 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
22. Teaching methods in general	11 people (84.6 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
23. Responsiveness to feedback from teachers regarding the learning process	9 people (69.2 %)	4 people (30.8 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
24. The quality of teaching in general	10 persons (76.9 %)	3 persons (23.1 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
25. Academic load/student requirements	9 people (69.2 %)	3 persons (23.1 %)	1 person (7,7 %)	0 people (0 %)	0 people (0 %)
26. Academic staff requirements for the student	11 people (84.6 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
27. Information support and explanation of the rules of admission and the strategy of the degree program (specialty) before entering the university	11 people (84.6 %)	1 person (7.7 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)
28. Informing of the requirements for successful completion of this degree program (specialty)	11 people (84.6 %)	1 person (7.7 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)
29. Quality of exam materials (tests and exam questions, etc.)	9 people (69.2 %)	4 people (30.8 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
30. Objectivity in assessing knowledge, skills and other learning achievements	11 people (84.6 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
31. Available computer labs	11 people (84.6 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
32. Available scientific laboratories	11 people (84.6 %)	1 person (7.7 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)
33. Objectivity and fairness of teachers	11 people (84.6 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)
34. Informing students about courses, degree programs and the academic degree they are receiving	10 persons (76.9 %)	2 persons (15.4 %)	1 person (7,7 %)	0 people (0 %)	0 people (0 %)
35. Providing students with dormitory accommodation	9 persons (69.2 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)	2 persons (15.4 %)

4 Evaluate how much you agree:

Approval	Full consent	I agree	I partially agree	I don't agree	Total disagreement	No answer
1. The course program was clearly presented	10 persons (76.9 %)	1 person (7.7 %)	1 person (7.7 %)	1 person (7.7 %)	0 people (0 %)	-
2. The course content is well structured	8 people (61.5 %)	3 persons (23.1 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)	-
3. Key terms are sufficiently explained	9 people (69.2 %)	3 persons (23.1 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	-
4. The material proposed by the teacher is relevant and reflects the latest achievements of science and practice	9 people (69.2 %)	4 people (30.8 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)	-
5. The teacher uses effective teaching methods	8 people (61.5 %)	4 people (30.8 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	-
6. The teacher has knowledge of the material being taught	10 persons (76.9 %)	2 persons (15.4 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	-
7. The teacher's presentation is clear	8 people	4 people	1 person	0 people	0 people	-

	(61.5 %)	(30.8 %)	(7.7 %)	(0 %)	(0 %)	
8. The teacher presents the material in an interesting way	8 people (61.5 %)	3 persons (23.1 %)	1 person (7.7 %)	1 person (7.7 %)	0 people (0 %)	-
9. Objectivity of assessment of knowledge, skills and other learning achievements	8 people (61.5 %)	3 persons (23.1 %)	1 person (7.7 %)	1 person (7.7 %)	0 people (0 %)	-
10. Timeliness of assessment of students' academic achievements	8 people (61.5 %)	3 persons (23.1 %)	1 person (7.7 %)	1 person (7.7 %)	0 people (0 %)	-
11. The teacher fulfills my personal development and professional formation requirements	7 people (53.8 %)	4 people (30.8 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)	-
12. The instructor stimulates students' activity	7 people (53,8 %)	4 people (30,8 %)	1 person (7,7 %)	1 person (7,7 %)	0 people (0 %)	-
13. The instructor stimulates students' creative thinking	7 people (53.8 %)	4 people (30.8 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	-
14. Appearance and manners of the teacher are adequate	11 people (84.6 %)	1 person (7.7 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	-
15. The instructor displays a positive attitude toward students	9 people (69.2 %)	3 persons (23.1 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	-
16. The system of assessment of learning achievements (seminars, tests, questionnaires, etc.) reflects the course content	8 people (61.5 %)	3 persons (23.1 %)	2 persons (15.4 %)	0 people (0 %)	0 people (0 %)	-
17. The evaluation criteria used by the instructor are clear	9 people (69.2 %)	3 persons (23.1 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	-
18. The instructor objectively evaluates students' achievements	9 people (69.2 %)	3 persons (23.1 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	-
19. The teacher speaks the professional language	8 people (61.5 %)	4 people (30.8 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	-
20. The organization of education provides sufficient opportunity for sports and other leisure activities	11 people (84.6 %)	1 person (7.7 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	-
21. Facilities and equipment for students are safe, comfortable and up-to-date	9 people (69.2 %)	3 persons (23.1 %)	1 person (7.7 %)	0 people (0 %)	0 people (0 %)	-
22. The library is well equipped and has a reasonably good collection of books	9 people (69.2 %)	2 persons (15.4 %)	1 person (7.7 %)	1 person (7.7 %)	0 people (0 %)	-
23. Equal opportunities are provided to all learners	9 persons (69.2 %)	4 people (30.8 %)	0 people (0 %)	0 people (0 %)	0 people (0 %)	-

5. Other problems concerning the quality of teaching: 0 answers