



«АККРЕДИТЕУ ЖӘНЕ РЕЙТИНГТИҢ
ТӘУЕЛСІЗ АГЕНТТІГІ» КЕМ

НУ «НЕЗАВИСИМОЕ АГЕНТСТВО
АККРЕДИТАЦИИ И РЕЙТИНГА»

INDEPENDENT AGENCY FOR
ACCREDITATION AND RATING

REPORT

on the findings of the External Evaluation Commission
for compliance with institutional accreditation standards

6B01501 Informatics and organization of digital education

8D06101 Clever systems

6B01503 Computer physics

**INTERNATIONAL INFORMATION
TECHNOLOGY UNIVERSITY**

in the period from 19 to 21 October 2020

INDEPENDENT AGENCY FOR ACCREDITATION AND RATING
External Expert Commission

***Addressed to
Accreditation
Council of IAAR***



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2020

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(I) LIST OF SYMBOLS AND ABBREVIATIONS

JSC - Joint Stock Company;
 BD - Basic disciplines;
 VSL - Virtual Scientific Library;
 IRD - Internal regulatory documents;
 EO - Educational organization;
 SAC - State Attestation Commission;
 SCES - State Compulsory Education Standard;
 DAA - Department of Academic Affairs;
 DET - Distance educational technologies;
 EQF - European Qualifications Framework;
 FA - Final examination;
 ITP - Individual teacher plan;
 ICT - Information and Communication Technologies;
 ISC - Individual student curriculum;
 Department of IS - Department of Information Systems;
 KC - Key competencies;
 CED - Catalog of elective disciplines;
 MES RK - Ministry of Education and Science of the Republic of Kazakhstan;
 MEP - Modular educational program;
 IITU - International Information Technology University;
 SRW - Student research work;
 RW - Research work;
 NCE - National Chamber of Entrepreneurs;
 NQF - National Qualifications Framework;
 GC - General competences;
 EP - Educational program;
 CD - Compulsory disciplines;
 GEM - General education module;
 GED - General education disciplines;
 PD - Profile disciplines;
 PM - Professional module;
 PS - Professional standard;
 TS - Teacher staff;
 MT - Midterm;
 RIEL - Republican Interuniversity Electronic Library;
 WC - Working curriculum;
 SM - Special module;
 QMS - Quality Management System;
 IWST - Independent work of students with a teacher;
 CC - Current control;
 FIT - Faculty of Information Technology;
 EMW - Educational and methodical work;
 TA - Teaching aid;
 EMCD - Educational-methodical complex of disciplines;
 EMCS - Educational and methodical complex of the specialty;
 GPA - Grade Point Average;
 SWOT - Strength, Weakness, Opportunity, Threat;
 ECTS - European Credit Transfer and Accumulation System.

INTRODUCTION

In accordance with Decree No.88-20-OD of 12 October 2020 of The Independent Agency for Accreditation and Rating, from October 5 to 7 2020, the External Expert Commission conducted an online assessment of the compliance of educational programs “6B01501 Informatics and organization of digital education”, “8D06101 Clever systems», “6B01503 Computer physics” of International Information Technology University with the standards of primary specialized accreditation of the IAAR (dated May 25, 2018, No 68-18/1-OD, first edition).

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

The structure of the EEC:

1. Chairman of the IAAR Commission - Tamyarova Maya Vladislavovna, Candidate of Technical Science, Deputy Dean for Educational and Remote Work of the Faculty of Aircraft Construction, Associate Professor of the Department of Measurement and Computer Systems of the Ulyanovsk State Technical University (Ulyanovsk, Russia);
2. Foreign expert of IAAR - Grakovski Alexander, Professor, Dean of the Faculty of Informatics and Electronics, Institute of Transport and Communications (Riga, Latvia);
3. Foreign expert of IAAR - Veaceslav Nastasenco, Assoc. Prof., PhD, Technical University of Moldova (Chisinau, Moldova);
4. Foreign expert of IAAR - Ognyan Borisov Manolov, PhD. (c.t.sc.) on Cybernetics and Informatics, European Polytechnic University (Pernik, Bulgaria);
5. Foreign expert of IAAR - Gostin Alexey Mikhailovich, Candidate of Technical Sciences, Associate Professor, Ryazan State Radio Engineering University named after V. F. Utkin (Ryazan, Russia);
6. IAAR expert - Ismailova Aisulu Abzhapparovna, PhD in Information Systems, S. Seifullin Kazakh Agrotechnical University (Nur-Sultan);
7. IAAR expert - Sultanova Zamzagul Khamitovna, Candidate of Economics, Acting Assistant Professor, West Kazakhstan Agrarian and Technical University named after Zhangir Khan (Uralsk);
8. IAAR expert - Gulmira Shaitmaganbetovna Ashirbekova, Candidate of Philological Sciences, L. Gumilyov Eurasian National University (Nur-Sultan);
9. IAAR employer - Yuri Pilipenko, Chairman of the Board of Directors, International Association of Manufacturers of Goods and Services "EXPOBEST" (Almaty);
10. Employer of IAAR - Mikhail G. Rezov, Chief Specialist of the Department for support of the electronic document management system, JSC "National Information Technologies" (Nur-Sultan);
11. IAAR student - Mauina Gulalem Myrzalievna, 3rd year doctoral student of EP "Information Systems", S. Seifullin Kazakh Agrotechnical University (Nur-Sultan);
12. IAAR student - Tolebay Aidos Bakhtiyaruly, 1st year student of EP "Cyber Security", Astana IT University (Nur-Sultan);
13. IAAR student - Svetlana Sergeevna Bobkova, 4th year student of EP "Finance", A. Baitursynov Kostanay Regional University (Kostanay);
14. Observer from the Agency - Kanapyanov Timur Yerbolatovich, PhD, Head of International projects, and Public Relations of the IAAR (Nur-Sultan).

(II) REPRESENTATION OF THE EDUCATIONAL ORGANIZATION

International Information Technology University (IITU) is a leading educational institution in the Central Asian region in the field of educating highly qualified, internationally recognized IT specialists. The University was established in 2009 on behalf of the First President of the Republic of Kazakhstan Nursultan Nazarbayev (State license AB 0064060 dated 29.05.2009). The University was established in close cooperation with Carnegie Mellon (USA).

The mission of IITU is to generate knowledge and train personnel of the digital age, to form the intellectual and scientific and technical potential of the country in the field of ICT through the integration of education, breakthrough innovative technologies and scientific research.

The University provides educational services of higher and postgraduate education in accordance with the Classifier of training areas with higher and postgraduate education, approved by the Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 13, 2018 No. 569 and the state mandatory standards of higher and postgraduate education of the Republic of Kazakhstan, approved by the order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 604.

Training is carried out on a three-level model "bachelor-master-Doctor PhD" in accordance with the Law of the Republic of Kazakhstan "On Education", the Bologna Declaration and other international documents in the field of education.

The strategic priorities of the university are aimed at achieving international recognition. First, the university positions itself as a Digital University, which involves the training of specialists of the digital era, the development of digital education systems, the development and provision of digital services for stakeholders with the formation of a digital footprint, as well as entering the position of a leading digital University, i.e., entering the ranking of world universities.

One of the goals of IITU is to achieve the level of a research university, the objectives of which are:

- formation of innovation and research infrastructure;
- formation of a system of conveyor training of initiative projects of teaching staff for participation in competitions;
- creation of a mechanism for involving 80% of teaching staff in research activities;
- formation of an innovative symbiosis with leading IT companies;
- generation of new knowledge and dissemination of scientific results;
- commercialization of the results of innovative and scientific achievements.

The University has developed [the Development Strategy of IITU JSC for 2020-2025](#), approved by the decision of the Board of Directors of IITU JSC dated January 15, 2020 (Protocol No. 5). In its activities, the University relies on [Policies in the field of quality](#) 2019-2020. Procedures and is responsible for the processes in the field of quality assurance are defined in a [Documented procedure "Internal audit"](#).

On March 5, 2019, "International Information Technology University" JSC received the decision of the accreditation Commission ASIIN (Germany) on institutional accreditation and was accredited until September 30, 2023.

At the end of 2019, according to the rating compiled by "Atameken" NCE, the EP of the Department of RET IITU takes the 3rd place among the universities of the republic with 3.59 points.

302 teachers conduct training at the university. The share of teachers with academic degrees and titles from the number of full-time teachers is 54.75% at the time of the reporting period. The average age of university teaching staff with academic degrees and titles in 2019-2020 is 38.5 years.

In the 2014-2015 academic year, the university graduated 519 students, including 415 bachelors, 91 undergraduates and 13 correspondence students. In the 2019-2020 academic year,

the number of graduates became 829, increased almost 2 times, namely 650 bachelors, 149 undergraduates, 11 doctoral students and 19 correspondence students.

Information in the context of educational programs of the cluster:

The graduate department for the "6B01503 Computer physics" EP is the Department of "Radio Engineering, Electronics and Telecommunications" of IITU (RET). The mission of the Department of RET is the formation of intellectual and scientific and technical potential for the development of radio electronics and telecommunications industries.

The Department of Information Systems of IITU (IS) is the issuing department for the EP "6B01501 Informatics and organization of digital education" and "8D06101 Clever systems". The mission of the Department of IS: constantly expanding the boundaries of scientific and educational activities, to prepare the most innovative personnel in the field of information systems.

Table 1 - Formed contingent of students in the context of accredited specialties

Academic year	Form of education	Total students	Grant students	Students on a paid basis
"6B01503 Computer physics"				
2019-2023	full-time/distance	14	14	
2020-2024	full-time/distance	20	20	
"6B01501 Informatics and organization of digital education"				
2018-2022	full-time/distance	21	20	1
2019-2023	full-time/distance	20	19	1
2020-2024	full-time/distance	22	22	
"8D06101 Clever systems"				
2019-2022	full-time/distance	11	11	

Table 2 - Number of students expelled (by grants/paid)

Academic year	"6B01503 Computer physics"	"6B01501 Informatics and organization of digital education"	"8D06101 Clever systems"
2019-2023	2 / 0	5 / 1	

Table 3 - Qualitative and quantitative structure of TS in the context of EP

EP	Average age	Total AP	Number of regular TS	Number of regular TS with academic degree	% of degree
"6B01503 Computer physics"	33	6	6	4	67
"6B01501 Informatics and organization of digital education"	35	20	19	9	45%
"8D06101 Clever systems"	60	6	6	6	100%

Table 4 – TS EP with practical experience

EP	Number of TS with experience in production,	Number of involved in conducting classes

	business etc.	
"6B01501 Informatics and organization of digital education"	10	-
"8D06101 Clever systems"	1	1
"6B01503 Computer physics"	-	-

Table 5 – Academic mobility by cluster

External and internal academic mobility	2017-2018 ac.y.			2018-2019 ac.y.			2019-2020 ac.y.		
	ext	int	total	ext	int	total	ext	int	total
Number of invited teachers for mobility programs							1		1
Number of teachers in mobility programs									
Number of students enrolled in mobility programs									
Number of teachers undergoing foreign internships							2		2
Number of doctoral students undergoing a foreign scientific internship							2		2

Table 6 - Research projects for 3 years by accredited EP cluster

EP	Name of the scientific project	Years of implementation	Budget, mil.KZT	Sources of financing
"6B01503 Computer physics"	№0115PK01145 "Use of information technologies based on the framework .net xna for the development of a virtual physical laboratory using 3D computer modeling elements"	2015-2017	29	MES of the RK, grant financing
	№AP05132736 – "Modeling of degradation phenomena in the soil and creation of an autonomous non-destructive testing device with real-time software"	2018-2020	30	MES of the RK, grant financing
	№AP05135692 – "Development of virtual electronic laboratories with elements of augmented and virtual reality technologies for the study of physics in secondary educational institutions"	2018-2020	30	MES of the RK, grant financing
	№AP05132952OT-19 "Cluster, multicluster, and nucleon degrees of freedom in light atomic nuclei"	2018-2020	10	MES of the RK, grant financing
	№AP05132897-OT-19 «Preparation of nanostructured composite materials based on titanium dioxide	2018-2020	7 (in year)	MES of the RK, grant financing

	films and metal nanoparticles and investigation of their structure and electronic properties»			
"6B01501 Informatics and organization of digital education"	№AP05134071 "Development of methodology, architectural and software solutions for the transformation of business processes and their automation based on cloud technologies BPaaS (on the example of administrative processes of public administration)"	2018-2020	54	MES of the RK, grant financing
"8D06101 Clever systems"	№AP05134597 – "Software and hardware complex for analysis and monitoring of climatic and environmental changes in the environment"	2018-2020	30	MES of the RK, grant financing
	№AP05132050 – "Development of "advanced" tools that contribute to the qualitative and effective analysis of unstructured data"	2018-2020	45	MES of the RK, grant financing
	BR05236517 "Platform for digital transformation of business processes of the national economy"	2018-2020	207	MES of the RK, program-specific financing

(III) DESCRIPTION OF THE PREVIOUS ACCREDITATION PROCEDURE

"6B01501 Informatics and organization of digital education", "8D06101 Clever systems", "6B01503 Computer physics" Educational programs are accredited in the IAAR for the first time.



(IV) DESCRIPTION OF THE EEC SESSION

The work of the EEC was carried out on the basis of the approved Program of the on-line visit of the expert commission on primary specialized accreditation of educational programs of International Information Technology University in the period from October 19 to 21, 2020.

To coordinate the work of the EEC, on October 18, 2020, an on-line setup meeting was held, during which powers were distributed among the members of the commission, the schedule of the visit was clarified, and agreement was reached on the choice of examination methods.

To obtain objective information about the quality of educational programs and the entire infrastructure of the university, to clarify the content of self-assessment reports, on-line meetings were held with the rector, vice-rectors of the university in areas of activity, heads of structural units, heads of departments, teachers, students, alumni, employers. A total of 86 representatives took part in the meetings (Table 7).

Table 7-Information about employees and students who participated in on-line meetings with the EEC of the IAAR:

Category of participants	Number
Rector	1
Vice-rectors of the university	3
Heads of structural units	16
Deans	2
Heads of departments	6
Teachers	21
Students, graduate students, doctoral students	31
Alumni	0
Employers	6
Total	86

During the on-line tour, the members of the EEC has reviewed the material-technical base, visited the research laboratory of "Big data", Apple training center, laboratory of mechatronics and intelligent systems, innovation center, laboratory "Unicef" (project GlucoMed, Pets), the center for educational technology and smart learning, the laboratory of physics and computer modeling, library (reading hall, e-hall, ALIS KABIS, exhibition), lecture halls and teaching laboratories.

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

According to the program of the visit, there was no attendance to the practice bases in the online format for accredited EP.

Members of the EEC visited the on-line classes:

- In the discipline Mathematical Analysis-1 (Practice), group PCP-2001 (25), 1st year, specialty "6B01503 Computer physics", teacher-Nartova D. S. S. phm. S., associate Professor. The practice was conducted on the Microsoft Teams platform, a teacher's chat with students was organized, tasks were performed online.

- In the discipline of Differential Equations (Lecture), group PCP-1901 (16), 2nd year, specialty "6B01503 Computer physics", teacher-Uteshova R. E., S. phm. S., assistant Professor. The lecture was held on the Microsoft Teams platform online in English using a screen demonstration with a presentation.

- In the discipline Programming 1 (Lecture), group PCS-2001 (13), 1st year, specialty "6B01501 Informatics and organization of digital education", teacher-Kaster N., master, senior

lecturer. A recording of an online lecture on the Microsoft Teams platform in English was demonstrated.

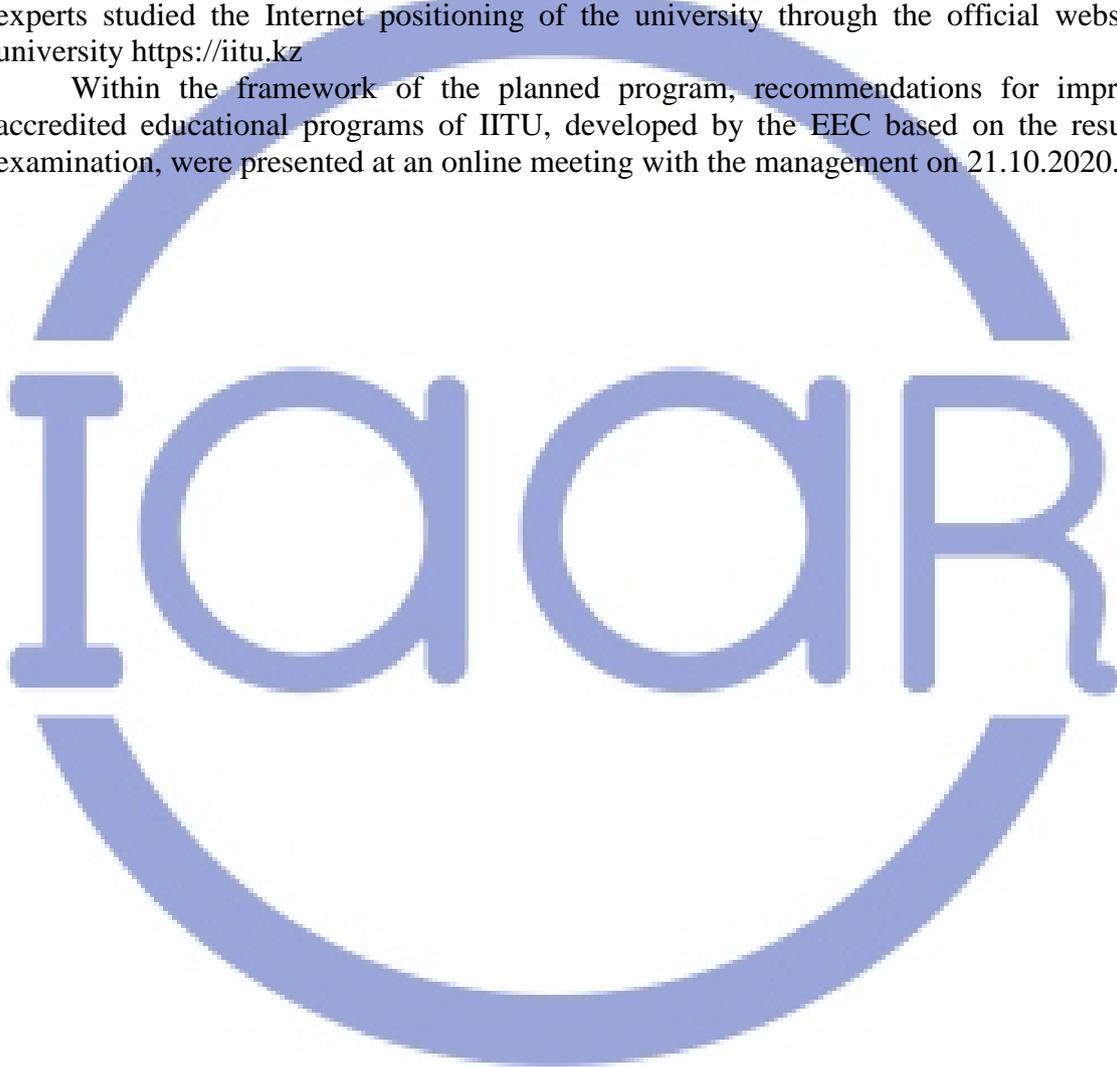
- In the discipline Programming 3 (Lecture), group CS-1902R (12), 2nd year, specialty "6B01501 Informatics and organization of digital education", teacher-Umarov F., master senior-lecturer. The lecture was held on the Microsoft Teams platform online in English using a screen demonstration with a presentation.

In the specialty "8D06101 Clever Systems" online classes were not held due to the lack of recruitment in the 1st year.

In accordance with the accreditation procedure, 64 teachers and 1152 students were surveyed.

In order to confirm the information provided in the Self-assessment Report, external experts requested and analyzed the working documentation of the university. Along with this, the experts studied the Internet positioning of the university through the official website of the university <https://iitu.kz>

Within the framework of the planned program, recommendations for improving the accredited educational programs of IITU, developed by the EEC based on the results of the examination, were presented at an online meeting with the management on 21.10.2020.



(V) COMPLIANCE WITH SPECIALIZED ACCREDITATION STANDARDS**6.1. Standard "Educational Management Program"**

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

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

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

✓ *The administration of the EP demonstrates its willingness to ensure transparency in the development of the EP growth plan based on the analysis of its functioning, the real positioning of the EO and the focus of its activities on meeting the needs of the state, employers, students, and other interested parties. The plan should contain the terms of the beginning of the implementation of the educational program.*

✓ *The administration of the EP demonstrates the existence of mechanisms of formation and regular revision of the development plan of the EP and monitoring its implementation, and evaluating achievement of learning objectives, meeting the needs of students, employers and society, decision-making aimed at continuous improvement of EP.*

✓ *The administration of the EP should involve representatives of groups of interested parties, including employers, students and teaching staff in the formation of the development plan of the EP.*

✓ *The administration of the EP must demonstrate the individuality and uniqueness of the development plan of EP, its consistency with the national priorities and strategy of the organization and (or) post-graduate education.*

✓ *The organization of higher and (or) postgraduate education should demonstrate a clear definition of those responsible for business processes under the EP, an unambiguous distribution of job responsibilities of personnel, and the differentiation of functions of collegial bodies.*

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

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

✓ *The administration of the EP should manage risks, including within the framework of the EP undergoing primary accreditation, as well as demonstrate a system of measures aimed at reducing the degree of risk.*

✓ *The administration of the EP should ensure the participation of representatives of employers, teaching staff, students, and other interested parties as part of the collegial bodies of educational program management and their representativeness when making decisions on the management of the educational program.*

✓ *The EO should demonstrate innovation management within the framework of the EP, including the analysis and implementation of innovative proposals.*

✓ *The administration of the EP should demonstrate evidence of readiness for openness and accessibility for students, teaching staff, employers, and other interested parties.*

✓ *The administration of the EP should be trained in educational management programs.*

Evidence part

The University has developed a Quality Policy for 2019-2020, published on the official website. The content of the policy reflects the strategic directions of activity, the main goals and objectives, values, and principles of the University. As a strong point, we can note the declared and consistently implemented by the university management task of transforming IITU into a digital university, which is confirmed by the presence of an IT-trained teaching staff, modern digital infrastructure, and ongoing research projects in the field of digitalization.

The university has implemented a quality management system, which successfully operates; distributed responsibility for individual processes in accordance with CT RK ISO 9001-2016 with periodic audit. The electronic document management system EDMS Documentolog, "Campus" AIS and Microsoft Teams is used to manage the EP and describe business processes, which ensures transparency of the EP management and its effectiveness.

The organization has passed the international institutional accreditation of the Accreditation Agency for Study Programs of Engineering, Information Science, Natural Sciences and Mathematics (ASIIN, Germany) for a period of 5 years, which is certainly the best practice.

The intra-university quality assurance system is regulated by 20 approved standards. In addition to standards, the quality assurance system is supported by 55 internal regulatory documents. All external and internal regulatory documents, including decisions of collegial bodies, are posted on the university's website (<https://iitu.kz>) and are available to all users of the corporate network.

In the course of accreditation, the experts of the EEC were presented with plans for the development of the EP by the graduating departments of the EP cluster. The analysis of the development plans of EP showed that their content complies with the requirements approved by the order of Minister of education and science of the Republic of Kazakhstan dated October 31, 2018 No. 604, Standard rules of activity of the organizations of education, realizing educational programs of higher and (or) post-graduate education, approved by order of MES of RK dated 30 October 2018 No. 595 to the educational environment.

The curriculum of the EP is designed for 2 years and is aimed at meeting the needs of the state and interested parties. The cluster of the EP and curricula are discussed at meetings of the graduating departments with the participation of EP teaching staff, students, and employers. Employers are represented by representatives of secondary schools and research institutions of the Republic of Kazakhstan, such as Almaty RPMS, IICT, IETP of KazNU.Al-Farabi, NNLOT at KazNU. Al-Farabi, RPMSI named after O. A. Zhautykov.

As a result of conversations with the management of the EP during the online visit, as well as studying the content of the EP, syllabuses and CED, the EEC experts confirmed the uniqueness of the EP "6B01501 Informatics and organization of digital education" and "6B01503 Computer physics" and an innovative approach to designing the content of the EP, which consists in combining traditional subject competencies of physics and Informatics with competencies in the field of modern digital technologies, data analysis, use of cloud systems and artificial intelligence, as well as in-depth language training of graduates, which can be considered best practice.

The administration of the EP, including the rector, is open and accessible to students and teachers, including through the means of online communication used in the university, which is confirmed by the results of online questionnaires of students, conversations of EEC members during online meetings with teaching staff and students.

Analytical part

As a result of the analysis of the submitted documents by the EEC experts, it was found that, despite the current QMS, the university does not have the established and prescribed in local regulatory documents regulations for the formation and regular review of the development plan of the EP with the involvement of students and employers.

Agreement and plan of the EP development with the collective management bodies, which include representatives of students, has not been documented (in particular, there are no matching signatures collegial management bodies on EP and EP plan development), although the University has several collective management bodies, including students and employers, for instance, the Committee of academic quality. Members of the EEC note that according to the table posted on the official website of the IITU (<https://iitu.kz/ru/articles/about-university/ucenyj-sovet>), the Academic Council does not include a student representative.

When analyzing the content of the QMS documents, as well because of interviewing the management of the EP, the experts concluded that there is no risk management mechanism in the IITU, both within the EP and in the university. Decisions about the development and change of the content of the EP by the EP management are often made intuitively, without appropriate risk planning and consideration of adverse factors. As a result of the analysis of the submitted documents on professional development (Appendix No. 5 to the report), the EEC experts concluded that it is necessary to train the EP management in the basics of risk management.

During the analysis of the content of the submitted documents on the EP "6B01501 Informatics and organization of digital education" and "6B01503 Computer physics", the experts found the absence of requirements for practical training in educational institutions, as well as the absence of planned activities for the implementation of double-degree education with leading Kazakh/foreign pedagogical universities.

As a result of the analysis, in general, the experts were convinced of the consistency of the strategic goals of the university, the adequacy of the mission, vision, strategy to the available resources: financial, information, personnel, which is confirmed by the results of the survey of students:

- 62.6% expressed full satisfaction with the level of accessibility and responsiveness of the university management;
- 91.3% of students expressed full and partial satisfaction with information support and explanation of the admission rules and strategy of the educational program (specialty) before entering the university;
- informing the requirements in order to successfully complete this educational program (specialty) expressed full and partial satisfaction of 87.8% of students;
- 88.7% of students expressed full and partial satisfaction with informing students about courses, educational programs, and the academic degree they received.

Strengths/best practices in the EP "6B01501 Informatics and organization of digital education", "8D06101 Clever system", "6B01503 Computer physics":

- the university has developed a Quality Policy for 2019-2020, published on the official website, reflecting the task of transforming IITU into a digital university;
- EP management transparency is achieved by the presence of a functioning QMS and the effective use of digital technologies, such as EDMS Documentolog, "Campus" AIS and Microsoft Teams, for management decision-making by management;
- the university has implemented and successfully operates a quality management system, distributed responsibility for individual processes in accordance with ST RK ISO 9001-2016 with periodic audit;
- an innovative approach to designing the content of the EP is to combine in the results of training traditional subject competencies of physics and Informatics with competencies in the field of modern digital technologies, data analysis, the use of cloud systems and artificial intelligence, as well as in-depth language training of graduates;
- The administration of the EP, including the rector, is open and accessible to students and teachers, including through online communication tools used in the university.

Recommendations for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever systems", "6B01503 Computer physics":

- to introduce into the regulation on the development and approval of educational programs the regulations for the formation and regular revision of the development plan of the EP with the involvement of students and employers;
- conduct training of the administration of the EP in the field of risk management with obtaining appropriate certificates, implement risk management of the EP;
- by the 2021-2022 academic year, implement the procedure for coordinating the EP and the EP development plan with the collegial management bodies of the EP, including representatives of employers, students, and other interested parties.

Additional recommendations for the EP "6B01501 Informatics and organization of digital education", "8D06101 Clever systems", "6B01503 Computer physics":

- by the 2021-2022 academic year, within the framework of the memorandum of cooperation with KazNPU named after Abai, conclude an additional agreement on the implementation of the EP with leading scientists and teachers of KazNPU named after Abai in the field of pedagogy for the formation of students' pedagogical competencies at a high level;
- by the 2021-2022 academic year, include in the Development Plan of the EP an item on joint/double-degree education with leading foreign/Kazakh pedagogical universities, indicating the terms and responsible persons.

Conclusions of the EEC on the criteria for the EP "6B01501 Informatics and organization of digital education", "8D06101 Clever systems", "6B01503 Computer physics":

According to the standard "Educational program management", 15 criteria are disclosed, of which according to the EP "6B01501 Informatics and organization of digital education", "8D06101 Clever systems", "6B01503 Computer physics" 5 have a strong position, 7-satisfactory, 3-suggest improvement.

6.2. Standard "Information management and reporting"

✓ *EO must demonstrate that it has a system for collecting, analyzing, and managing information based on the use of modern information and communication technologies and software tools and that it uses a variety of methods to collect and analyze information in the context of the EP.*

✓ *EP management must demonstrate the existence of a mechanism for the systematic use of processed, adequate information to improve the internal quality assurance system.*

✓ *EP management must demonstrate decision making based on facts.*

✓ *Within the EP, there should be a regular reporting system that reflects all levels of the structure, including an assessment of the effectiveness and efficiency of the activities of departments and departments, scientific research.*

✓ *EO must establish the frequency, forms, and methods of assessing EP management, activities of collegial bodies and structural units, top management, implementation of scientific projects.*

✓ *EO must demonstrate the determination of the order and ensuring the protection of information, including the identification of persons responsible for the accuracy and timeliness of the analysis of information and the provision of data.*

✓ *An important factor is the availability of a mechanism for involving students, employees and teaching staff in the processes of collecting and analyzing information, as well as making decisions based on them.*

✓ *EP management must demonstrate the existence of a communication mechanism with students, employees, and other stakeholders, as well as mechanisms for resolving conflicts.*

- ✓ *EO must demonstrate the existence of a mechanism for measuring the degree of satisfaction of the needs of teaching staff, staff, and students within the EP.*
- ✓ *EO should provide for the assessment of the effectiveness and efficiency of activities, including in the context of EP.*
- ✓ *Information intended for collection and analysis within the EP should consider:*
 - *key performance indicators;*
 - *the dynamics of the contingent of students in the context of forms and types;*
 - *the level of academic performance, student achievement and expulsion;*
 - *satisfaction of students with the implementation of EP and the quality of education at the university;*
 - *availability of educational resources and support systems for students.*
- ✓ *EO must confirm the implementation of personal data processing procedures for students, employees and teaching staff based on their documentary consent.*

Evidence part

In addition to regularly conducting questionnaires of students, employees, meetings with alumni and employers, using training courses in a distance learning environment based on Moodle (<https://dl.iitu.kz>), in IITU uses its own development of AIS for managing the educational process to collect and analyze information "Campus" (<https://campus.iitu.kz>), as well as the corporate platform Microsoft Teams, which allows organizing video lectures, monitoring attendance, tracking the activity and perception of the material by students. This is a good example of the application of digital technologies in education.

The analysis of the documents submitted by the university showed that the IITU for data processing and analysis uses, among other things, information, and analytical licensed software Microsoft Business Intelligence (BI), which allows you to analyze data in various slices and sequences, predict and evaluate the effectiveness of changes. It is good practice to apply analytics to a quality assurance system.

During an online visit to IITU JSC, EEC experts found that the university has a system for collecting and monitoring information on all accredited EPs of the cluster within the QMS with the appointment of responsible persons. Students can receive the necessary information about the educational process at the university, including educational methodological and educational and administrative materials for students and teaching staff.

During the online visit, the experts found that the university has determined the requirements for the protection of information, and those responsible for the accuracy and timeliness of providing information have been appointed. Students, employees and teaching staff write an application addressed to the rector, where they express their consent to the processing of personal data. The experts found that the consent to the processing of personal data is confirmed by the students in the study agreement.

IITU annually takes measures to improve the effectiveness and efficiency of activities based on a comprehensive analysis of educational and research activities. Students, undergraduates, doctoral students, teaching staff, employers are involved in the process of collecting and analyzing information, as well as making decisions based on them. The main method of collecting information is the results of external communication and interviews, questionnaires of all the above stakeholders. The results of the survey are considered when passing the teaching staff of the competition commission.

The package of QMS documents submitted by the university "Regulations on quality control of the educational process", "Code of corporate ethics", "Code of academic honesty" and others contains documented procedures for resolving conflicts between students, teachers, and other employees of the university. The declared procedures for resolving conflicts have been implemented in practice, which is confirmed by the results of questioning and interviewing students during an online visit by experts from the EEC.

Analytical part

The experts found that the lack of dynamics of academic indicators in the reports for accredited EPs is associated with the first enrollment held in 2019.

During the monitoring carried out by the IITU, all key indicators of the functioning of the educational program are monitored: the state of the EMCD and EMCS, modular structuring of plans is carried out, a CED is regularly published, the proposed educational trajectories are developed, the composition of the teaching staff is improved, the state of the material and technical base is improved, the sufficiency and renewability are monitored library and information support.

To identify the professional level of the teaching staff, to determine the average rating of the teaching staff, a survey of students is carried out on the portal <https://dl.iitu.kz>. At the same time, the management of EP information presupposes the presence of appropriate sections on the site with the publication of monitoring results and generated reporting. Experts note that most of the IITU reporting information is private, accessible only to a limited circle of people in intra-university information systems, which limits the possibilities of information exchange and development of EP.

According to the results of the survey, satisfaction with the content and information content of the website of the university in general and the faculty was completely satisfied by 90.2% of students. 92.2% of the teaching staff are fully satisfied with the relationship with the direct management. Full satisfaction of students with the level of accessibility of the dean's office is 61.7%, accessibility and responsiveness of the university administration - 62.6%, accessibility of academic consulting - 57.4%, accessibility of counseling on personal issues - 52.2%. The level of availability of library resources is completely satisfied - 71.3%.

Strengths/best practice for "6B01501 Informatics and organization of digital education", "8D06101 Clever systems", "6B01503 Computer physics" EP:

- using for information management educational process management "Campus" AIS and the corporate platform Microsoft Teams, which allows you to organize video lectures, monitor attendance, track the activity and perception of the material by students;
- application for data processing and analysis of information and analytical licensed software Microsoft Business Intelligence (BI), which allows you to analyze data in various slices and sequences, predict and evaluate the effectiveness of changes made;
- The University's QMS contains documented procedures for resolving conflicts between students, teachers, and other university employees, implemented in practice.

Recommendations for "6B01501 Informatics and organization of digital education", "8D06101 Clever systems", "6B01503 Computer physics" EP:

There are no recommendations for this standard.

Conclusions of the EEC on the criteria for "6B01501 Informatics and organization of digital education", "8D06101 Clever systems", "6B01503 Computer physics" EP:

According to the standard "Information Management and Reporting" 16 criteria are disclosed, of which according to "6B01501 Informatics and organization of digital education", "8D06101 Clever systems", "6B01503 Computer physics" EP 3 have a strong position, 13 - satisfactory.

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

- ✓ *EO should define and document procedures for the development of the EP and their approval at the institutional level.*
- ✓ *EP management must ensure that the developed EP meets the established goals,*

including the expected learning outcomes.

✓ EP management must ensure the availability of developed models of the EP graduate, describing the learning outcomes and personal qualities.

✓ EP management must demonstrate the performance of external examinations of the EP content and the planned results of its implementation.

✓ The qualification awarded upon completion of the EP must be clearly defined and correspond to a certain level of the NRC.

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

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

✓ EP management must provide evidence of the participation of students, teaching staff and other stakeholders in the development of EP, ensuring their quality.

✓ The complexity of the EP should be clearly defined in Kazakhstani loans and ECTS.

✓ EP management must ensure that the content of academic disciplines and planned results are consistent with the level of education (bachelor's, master's, doctoral studies).

✓ The structure of the EP should provide for various types of activities to ensure that students achieve the planned learning outcomes.

✓ An important factor is the correspondence between the content of the EP and the learning outcomes of the EP, implemented by institutions of higher and (or) postgraduate education in the EHEA.

Evidence part

The internal rules for the development and approval of EP are spelled out in the Regulation on the development of educational programs for new specialties P-35 dated March 18, 2020, presented on the university website. The experts found that the procedures for the development and approval of the EP are enshrined in the relevant QMS documents and are implemented in practice.

The university has developed and published a model of the EP graduate, describing the learning outcomes and personal qualities, a preliminary examination of the EP is carried out, considering the requirements of the State Educational Standard of Education for the structure and content. The scientific and methodological council is responsible for the preliminary examination of the EP. The approved EP is placed in the register of higher education educational programs. External examination of the EP is carried out by representatives of employers and partners of the university. The Academic Council is responsible for the external examination of the EP.

During the analysis of EP documents, experts established the compliance of the structure and content of the EP of the SCES cluster, approved by order of the Minister of Education and Science of the Republic of Kazakhstan No. 604 dated 31.10.2018, as amended by order of the Minister of Education and Science of the Republic of Kazakhstan dated 05.05.2020 No. 182.

According to the rules of the SCES and the NLA MES RK, in the working curricula of the EP cluster for 2019, the labor intensity of all disciplines and all types of professional practices is indicated in ECTS credits, including indicating the student's classroom load and the total semester load by discipline. The complexity of one academic year in a bachelor's degree is no more than 60 ECTS credits. The total labor intensity for 4 years is at least 240 ECTS. For the OEA cycle, 56 ECTS are allocated, for the basic cycle of disciplines 112 ECTS, including an elective component, and 60 ECTS are allocated for the profile cycle of disciplines, the remaining 12 ECTS are for writing and defending a diploma.

For students to undergo all types of practices, the departments have agreements with organizations (Table 8).

Table 8. Data on the bases practices.

Educational program	Base of Practices
"6B01501 Informatics and organization of digital education"	1) Republican Physics and Mathematics School of Almaty; 2) KazNPU named after Abay
"8D06101 Clever systems"	1) Laboratory of Artificial Intelligence and Robotics of the Institute of Information and Computing Technologies SC MES RK; 2) Association of innovative companies SEZ "Park of innovative technologies"
"6B01503 Computer physics"	1) Republican Physics and Mathematics Boarding School. named after O. A. Zhautikov; 2) Research Institute of Experimental and Theoretical Physics at KazNU named after al-Farabi

The content of academic disciplines and planned learning outcomes fully corresponds to the EP levels of the cluster (bachelor's and doctoral studies). The content of the EP and the learning outcomes of the EP are in full compliance with each other since the training is carried out according to the rules and standards of the Bologna process and within the framework of the credit technology of education.

Analytical part

During the online visit and interviewing the students, experts found that there was no documented fact of coordinating the content of the EP with the students, despite the procedure for agreeing the content of the EP with employers and students declared in the Quality Policy.

Also, from the analysis of the content of the EP, the commission established that some of the disciplines that form pedagogical competencies within the framework of the "6B01501 Informatics and organization of digital education", "6B01503 Computer physics", for example: "Methods for Teaching Informatics/Physics", "Mobile learning technologies and augmented reality", "Fundamentals of scientific activity in the school Informatics course", etc. are optional disciplines and are grouped together with disciplines that form other competencies. In this case, there is a risk of not mastering pedagogical competencies by the learners. In addition, the experts of the EEC did not find documentary evidence of the requirement for students to undergo professional practice in educational organizations, which can affect the results of mastering EP and lead, in general, to a decrease in the quality of teacher education.

In connection with the first admission to the cluster EP in the current academic year, the possibility of professional certification was not considered by the EP leadership.

According to Appendix 7 "The structure of the educational program of doctoral studies in the scientific and pedagogical direction", as amended by the order of the Minister of Education and Science of the Republic of Kazakhstan dated 05.05.2020 No. 182, the cycle of basic disciplines should include courses "Academic writing" and "Methods of scientific research". At the time of the examination, the university did not provide the EEC members with information on the availability of these compulsory disciplines in the basic part of the educational program "8D06101 Clever systems".

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

- academic load/student requirements, 67% of students are fully satisfied, partially satisfied - 29.6%;
- informing about courses, educational programs, and obtaining academic degrees are completely satisfied with 65.2% of students, partially satisfied - 23.5%;

- 69.6% of students are fully satisfied with the general quality of educational programs, 25.2% are partially satisfied.

Strengths/best practice for "6B01501 Informatics and organization of digital education", "8D06101 Clever systems", "6B01503 Computer physics" EP:

No strengths have been identified for this standard.

Recommendations for 6B01501 "Informatics and organization of digital education", 8D06101 "Clever systems", 6B01503 "Computer physics" EP:

- ensure the participation of representatives of employers and students in the procedure for approval and revision of the content of the EP.

Additional recommendations for 6B01501 "Informatics and organization of digital education", 6B01503 "Computer physics" EP:

- by the beginning of the 2nd semester of the 2020-2021 academic year, disciplines that form pedagogical competencies, for example: "Methods of teaching Informatics/physics", "Educational smart technologies", "Mobile learning technologies and augmented reality", "Fundamentals of scientific activity in school course of informatics ", etc. transfer from the optional component to the University component.

- by the 2021-2022 academic year, include two disciplines that form pedagogical competencies in the list of disciplines submitted for the state exam of EP;

- before the students begin to pass professional practices in EP, plan their conduct in educational institutions.

Additional recommendations for EP 8D06101- "Clever systems":

- by the 2021-2022 academic year, include in the Cycle of Basic Disciplines (BD) the courses "Academic Writing" and "Methods of Scientific Research" for more complete compliance with the regulatory documents of the Republic of Kazakhstan.

Conclusions of the EEC on the criteria for 6B01501 "Informatics and organization of digital education", 8D06101 "Clever systems", 6B01503 "Computer physics" EP:

According to the standard "Development and approval of an educational program" 12 criteria are disclosed, of which according to 6B01501 "Informatics and organization of digital education", 8D06101 "Clever systems", 6B01503 "Computer physics" EP 11 have a satisfactory position, 1 - suggests improvement.

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

✓ EO should define mechanisms for monitoring and periodic evaluation of the EP to ensure that the goal is achieved and meet the needs of students and society. The results of these processes should be aimed at continuous improvement of the EP.

✓ Monitoring and periodic evaluation of the EP should include:

- the content of the programs in the light of the latest scientific achievements in a particular discipline to ensure the relevance of the taught discipline;

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

- workload and performance of students;

- the effectiveness of assessment procedures for students;

- expectations, needs and satisfaction of students with EP training;

- educational environment and support services, and their compliance with the objectives of the EP.

✓ *EO management should define a mechanism for informing all interested parties about any planned or taken actions in relation to the EP.*

✓ *All changes made to the EO must be published. The EP's management should develop a mechanism for revising the content and structure of the EP, considering changes in the labor market, employers' requirements, and the social demand of society.*

Evidence part

During the online visit, the experts found that monitoring the quality of the EP includes:

- internal assessment of the EP (rating of the department, rating of the teaching staff of the university, self-assessment of the EP);
- internal assessment of the activities of the university;
- EAAA, specialized (program) accreditation, EP rating;
- external assessment of the educational activities of the university (institutional accreditation, rating).

From the analysis of the submitted documents by experts, it was revealed that the assessment of the quality of the EP implementation is carried out within the framework of the general QMS, which consists in assessing the EP management (teaching staff level, organization of the educational process, regular assessment of the level of achievement of the program's goals, the demand for graduates), EP implementation (curriculum, standard discipline programs, methodological and information support, infrastructure, educational technologies, research and development) and EP results (intermediate and final certification). Monitoring results are communicated to management and stakeholders.

The results of the EP assessment are discussed at the Academic Council of the university, department meetings, faculty councils, which make decisions on measures to ensure the quality of education. Experts confirm that all procedures for approving EP documents are carried out in accordance with the normative documents of the Ministry of Education and Science of the Republic of Kazakhstan.

The Regulation on the development of the EP indicates that changes in the EP are made considering the changes in the needs of society and the professional environment in terms of the content of the studied disciplines, scientific novelty, revision of the labor intensity, the format of classes.

Monitoring student satisfaction is achieved by analyzing the results of student questionnaires. During the online meetings, experts revealed that students can present their proposals on the content of the discipline at meetings with the management. EP reviewing is carried out by employers and stakeholders. EP have the employers' approving signatures on the title page.

To introduce new directions in the studied disciplines of EP, the graduating departments monitor the development of science in the field of physics, computer technology, and artificial intelligence. From the analysis of the site, it follows, for example, that physicists of the RET Department are investigating the principles of fundamental interactions of elementary particles, which can be used to create prototypes of new quantum computers.

Analytical part

At the same time, the experts did not find a section on the IITU website for publishing the results of monitoring and periodic evaluation of educational programs. The competitive advantages of the EP are published on the site "as is" to attract the attention of applicants and other target audience. The experts consider it important to publish plans for changing the content of the EP and the results of monitoring.

Strengths/best practice for 6B01501 "Informatics and organization of digital education", 8D06101 "Clever systems", 6B01503 "Computer physics" EP:

No strengths have been identified for this standard.

Recommendations for 6B01501 "Informatics and organization of digital education", 8D06101 "Clever systems", 6B01503 "Computer physics" EP:

-to promptly inform interested parties, create a section on the IITU website to publish the results of monitoring and periodic evaluation of educational programs.

Conclusions of the EEC on the criteria for 6B01501 "Informatics and organization of digital education", 8D06101 "Clever systems", 6B01503 "Computer physics" EP:

According to the standard "Continuous monitoring and periodic evaluation of educational programs" 9 criteria are disclosed, of which 9 have a satisfactory position according to 6B01501 "Informatics and organization of digital education", 8D06101 "Clever systems", 6B01503 "Computer physics" EP.

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

✓ *EP management must ensure respect and attention to various groups of students and their needs, provide them with flexible learning paths.*

✓ *EP management should provide for the use of various forms and methods of teaching and learning.*

✓ *An important factor is the availability of our own research in the field of teaching methods of academic disciplines EP.*

✓ *EP management must demonstrate the availability of feedback mechanisms on the use of various teaching methods and assessment of learning outcomes.*

✓ *EP management must demonstrate the existence of mechanisms to support the autonomy of students with simultaneous guidance and assistance from the teacher.*

✓ *EP management must demonstrate the existence of a procedure for responding to student complaints.*

✓ *EO must ensure consistency, transparency, and objectivity of the mechanism for assessing learning outcomes for each EP, including appeal.*

✓ *EO must ensure that the procedures for assessing the learning outcomes of EP students are in line with the planned results and objectives of the program. Criteria and methods of assessment within the EP should be published in advance.*

✓ *In the EO, the mechanisms for ensuring the achievement of learning outcomes by each EP graduate should be determined and the completeness of their formation should be ensured.*

✓ *Evaluators should be familiar with modern methods of assessing learning outcomes and regularly improve their qualifications in this area.*

Evidence part

[The Academic Policy](#), QM-02, approved at the meeting of the Academic Council and approved by the rector of IITU on 18.03.2020, operates in IITU JSC. The academic policy is published on the university website. It is a system of measures, rules and procedures for planning and managing educational activities and effective organization of the educational process aimed at improving the quality of education. The procedure for managing educational activities in the bachelor's degree is regulated in accordance with the [«Documented procedure for the Organization of the educational process \(Bachelor's degree\)»](#) IRD, developed in accordance with the legislation of the Republic of Kazakhstan, the State Educational Standard of the Republic of Kazakhstan.

This document sets out the procedures and basic principles for organizing the educational

process at the university on credit technology of education (bachelor's degree): organization of planning and organization of the educational process; preparation of independent work of a student and independent work of a student under the guidance of a teacher; the procedure for conducting intermediate and final control, appeals of students; conditions for the elimination of academic debts and the transfer of students from course to course.

Experts, based on online conversations with students, found that the university provides equal opportunities for students, regardless of the language of instruction, to form an individual educational trajectory, because of the implementation of which the necessary competencies should be obtained.

From the analysis of the content of the EP and interviewing students by experts, it was found that within the framework of the EP bachelor's degree students are provided with two individual educational trajectories:

- according to 6B01503 "Computer physics" EP:
 - radio engineering and telecommunications;
 - computer Engineering;
- for 6B01501 "Informatics and organization of digital education" EP:
 - Informatics;
 - organization of digitalization of education.

Additional educational programs (minor) are organized for EP students, which are taught by certified teaching staff of the university, and some EP courses are integrated with the Coursera platform, which is reflected in the report and mentioned in conversations with teaching staff. Some EP teachers practice posting lectures on their YouTube channel, creating separate forums where students can share, participate in discussions. All classes are recorded and posted in the appropriate section of the Microsoft Teams platform, and there is also our own development for knowledge control and assessment, which operates based on Moodle.

Analytical part

The analysis of the methodological achievements of the teaching staff of the IITU, carried out by experts of the EEC, revealed the need for an academic exchange of best practices with other universities of the Republic of Kazakhstan to develop scientific research on teaching methods using distance educational platforms and technologies. In 2020, the university held the sixth international conference "Digital Technologies in Education, Science and Industry" (DTESI 2020), however, both this conference and the student youth digital forum YDF-2020, held by IITU in 2020, lack methodological sections on the use of digital technologies in education, which would be important for the development of research and development work and research work of the graduating departments of the EP cluster.

A survey of students, conducted during the EEC visit, showed that: students express complete satisfaction with:

- a) the quality of teaching in general - 67%, in part - 29.6%;*
- b) the requirements of the teaching staff to the student - 57%, partially - 32.2%;*
- c) the objectivity of the assessment of knowledge, skills and other educational achievements by the fairness of examinations and certification - 60%, partially - 29.6%;*
- d) the quality of examination materials (tests and examination questions) - 67.8%, partially - 28.7%.*

Strengths/best practice in 6B01501 "Informatics and organization of digital education", 8D06101 "Clever systems", 6B01503 "Computer physics" EP:

- the presence of many additional educational programs, the use of various digital platforms by the university, various forms of presentation and control of educational material allows the methodology of student-centered learning.

Recommendations for 6B01501 "Informatics and organization of digital education", 8D06101 "Clever systems", 6B01503 "Computer physics" EP:

- to develop scientific research on teaching methods and the exchange of academic experience, it is recommended to hold joint events annually, for example, within the "e-Learning" section at the international conference "Digital Technologies in Education, Science and Industry".

Conclusions of the EEC on the criteria for 6B01501 "Informatics and organization of digital education", 8D06101 "Clever systems", 6B01503 "Computer physics" EP:

According to the standard "Student-centered learning, teaching and assessment of progress" 10 criteria are revealed, of which according to 6B01501 "Informatics and organization of digital education", 8D06101 "Clever systems", 6B01503 "Computer physics" EP 1 has a strong position, 9 - satisfactory.

6.6. Standard "Students"

✓ *The Educational organization must demonstrate the existence of a policy for the formation of the contingent of students in the context of EP from admission to graduation and ensure the transparency of its procedures. The procedures governing the life cycle of students (from admission to completion) must be defined, approved, published.*

✓ *EP management should determine the procedure for the formation of the contingent of students based on:*

- *minimum requirements for applicants;*
- *the maximum size of the group during seminars, practical, laboratory and studio classes;*
- *forecasting the number of government grants;*
- *analysis of the available material and technical, information resources, human resources;*
- *analysis of potential social conditions for students, incl. providing places in the hostel.*

✓ *The EP's management must demonstrate its readiness to conduct special adaptation and support programs for newly admitted and foreign students.*

✓ *The educational organization must demonstrate the implementation of special adaptation and support programs for newly admitted and foreign students.*

✓ *The educational organization must demonstrate that its actions comply with the Lisbon Recognition Convention*

✓ *The educational organization should cooperate with other educational organizations and national centers of the "European Network of National Information Centers for Academic Recognition and Mobility/National Academic Recognition Information Centers" ENIC/NARIC to ensure comparable recognition of qualifications.*

✓ *The EP's management must demonstrate the existence of a mechanism for recognizing the results of academic mobility of students, as well as the results of additional, formal, and non-formal education.*

✓ *The educational organization must provide an opportunity for external and internal mobility of EP students, as well as a willingness to assist them in obtaining external grants for training.*

✓ *The EP's management must demonstrate a readiness to provide students with places of practice, to facilitate the employment of graduates, to maintain communication with them.*

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

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

Evidence part

The policy of forming the contingent at the university is regulated by the Standard Rules for admission to study in educational organizations that implement educational programs of higher and postgraduate education, approved by the Government of the Republic of Kazakhstan dated January 19, 2012 No. 109 (as amended and supplemented as of 26.07.2017), Order of the Ministry of Education and Science of the Republic of Kazakhstan No. 600 dated 31.10.2018. and is reflected in the Rules for admission to the IITU.

From the EP documents, it follows that admission is carried out according to the applications of applicants on a competitive basis, in accordance with the points of the certificate issued based on the results of the UNT or CT. The recruitment procedure and the rules for crediting credits when transferring from another university is carried out in accordance with the Rules for the transfer and restoration of students in educational institutions. During the interview, experts found that applicants and those who are transferred from another university pass a special exam in English.

The university operates a model of forming a contingent of students, based on the principle of election by applicants and students of the specialty and educational program.

The formation of the contingent of students in the EP of doctoral studies is carried out by placing a state educational order for the preparation of scientific and pedagogical personnel, as well as paying for education at the expense of citizens' own funds and other sources. To receive documents from doctoral students and organize entrance exams at the IITU, an admissions committee is created in accordance with the Regulations on the IITU admissions committee of 05/27/2017. The chairman of the selection committee is the head of the university. The experts found that the Entrance Examination Program is available on the university website (<https://www.iitu.kz>).

According to the submitted documents on EP on the Microsoft Teams platform, the admission of applicants for the 2020-2021 academic year at the EP of doctoral studies "8D06101 Clever Systems" was not carried out. To date, the number of doctoral students is 11, all of them are in the 2nd year and are studying under a state grant.

According to EP "6B01501 Informatics and organization of digital education", 22 students were admitted to the first year only on state order, the total contingent of students in this EP is 63 students, including 2 students on a contractual basis.

According to EP "6B01503 Computer Physics": in the first year - 20 students study only under the state order, the total contingent of students in this EP is 34 students, and all were accepted under the state order.

The movement of the contingent is reflected in monthly reports within the university and in the statistical form 3-NC, approved by the Agency of the Republic of Kazakhstan on Statistics, as well as the daily report of the UMSHE (Unified Management System for Higher Education) of the Ministry of Education and Science of the Republic of Kazakhstan.

Experts during conversations with students found that those who entered the university are provided with a student's guidebook, an introductory course is conducted for enrolled students. Students are introduced to the "Internal Regulations for Students at IITU". The university has created conditions for social support of students.

The members of the EEC note that student self-government is quite developed at the university. University students cooperate with youth organizations of the city, region, participate in competitions, festivals, meetings, literary readings, conferences. Conditions have been created for communication in the virtual space, on the university website: the rector's blog, sections "Write a letter", "Ask a question". The website of the university for students contains information on educational activities, news, and announcements about the life of the university.

Based on the analysis of the QMS documents posted on the website, EEC experts note that

the organization of educational work is carried out in accordance with the regulatory documents of the Ministry of Education and Science of the Republic of Kazakhstan. The educational portal <https://dl.iitu.kz> allows you to automatically keep track of points, which makes up the final rating of students. The requirements for students within the framework of each type of control are indicated in the EMCD. Testing is a common form of midterm control and final certification. Viewing the content of the educational portal by experts showed that the testing procedure is provided with a base of test items for each discipline with a combination of options, processing of results, and the formation of an examination sheet.

From the analysis of the IITU documents, it follows that the assessment of the final knowledge of the students is carried out through an interview, which is provided with examination tickets. The decision on the forms of the final certification is taken by the Councils of the departments. Test assignments and exam tickets for all disciplines of the session and final state exams are approved at meetings of the graduating departments. The transfer of students from course to course is carried out considering the GPA, which is established annually by the university administration.

As a result of online interviews and analysis of the content of the university website, experts found that doctoral students of the Department of Information Systems, under the guidance of teachers, take an active part in the annual scientific and practical conference held by the University "Youth Digital Forum YDF-2020", "Digital technologies in education, science and industry 2020". EEC experts note that these conferences are included in the Scopus databases.

Experts draw attention to the fact that the EP leadership pays great attention to ensuring conditions for students. This is evidenced by the availability of service services, such as: a canteen, a buffet, a medical center, a rented gym, computer rooms, a library and an innovation center, the Center for Educational Innovation and SMART Training.

Members of the EEC have established that the provision of academic mobility for accredited EP is in its infancy. Agreements have been concluded with partner universities of the Republic of Kazakhstan (list of partners on the university website www.iitu.kz). Only in the Department of Information Systems for academic mobility in the fall of 2019, the University was visited by Professor M. Kamennova. General Director of the company "Logic of Business 2.0" (Russia, Moscow) with lectures on "Modeling business processes. The classic approach." Mechanisms for providing opportunities for external and internal mobility of EP students and assistance in obtaining external grants for training are given in the Regulation on academic mobility of students.

During online meetings with students and analysis of the IITU website, experts found that the university has a service to promote the employment of graduates. The university pays attention to monitoring the annual employment and direct and feedback from the labor market, which allows it to monitor the compliance of strategic plans with the real demand in the educational services market. At the time of the accreditation for the EP, there was no issue.

Analytical part

Experts note that the material, technical, library and information resources used to organize the learning process are sufficient and meet the requirements of each educational program being implemented. During a visual online examination, as well as in an interview with the student, with the teaching staff, the EEC revealed that the heads of EP and EO need to pay attention to the expansion of the student campus.

From the words of the students and the teaching staff, it turned out that not all places have Wi-fi networks available, the commission was also convinced of this, when the university staff could not demonstrate the laboratories in the basement, the issue of the lack of their own student dormitory and their own gym is acute.

Considering these facts, the EEC recommends by the 2021-2022 academic year to draw up a phased plan for the development of the student campus to improve social conditions for students: construction of a dormitory, a gym, ubiquitous Wi-fi access, affordable prices in student canteens, affordable medical services, etc.

EEC notes the presence of internal documents in the university on the main issues of educational, organizational activities of students, however, the analysis of the documents provided, as well as online interviews with the heads of the structural divisions of the university, the heads of the EP, showed the need to implement a comprehensive program to attract foreign students, since mainly in accredited EPs are taught in English. EEC recommends by the 2021-2022 academic year to develop and implement a comprehensive program to attract, adapt foreign students and support gifted students.

EEC during a meeting with the teaching staff of the EP found out that the university practices on a competitive basis to send teachers to International conferences, as well as short-term internships in foreign universities at the expense of the university. The contingent of teaching staff is mostly young and many have International language certificates such as IELTS, TOEFL, DSH, TFI, including some students. The EEC considers it necessary to draw the attention of the university to assistance in obtaining grants from foreign universities and programs for students and young teachers and recommends including in the EP Development Plan an item on the possibility of assistance in obtaining external grants for training students and teaching staff.

According to the results of the questionnaire, the teaching staff evaluate:

- the level of conditions created, taking into account the needs of various groups of students - 46.9% "Very good", 48.4% - "Good", 4.7% - "Satisfactory";
- correspondence of the students' knowledge obtained in this university to the realities of the requirements of the modern labor market - 65.6% "Very good", 4.4% - "Good".

According to the results of the questionnaire, the students express complete satisfaction:

- availability of academic consulting 57.4%, partial - 29.6%;
- the availability of counseling on personal problems 52.2%, partial - 33%;
- the level of availability of library resources is 71.3%, partial - 23.5%;
- existing training resources 64.3%, partial - 28.7%;
- the quality of educational programs in EP 69.6%, partial - 25.2%;
- the requirements of the teaching staff to the student 57.4%, partial - 32.2%.

Strengths/best practice for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer physics":

No strengths have been identified for this standard.

Recommendations for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics":

- by the 2021-2022 academic year, draw up a phased plan for the development of the student campus to improve social conditions for students: construction of a dormitory, a gym, ubiquitous Wi-fi access, affordable prices in student canteens, affordable medical services, etc.;

- by the 2021-2022 academic year, develop and implement a comprehensive program to attract, adapt foreign students and support gifted students;

- to include in the EP Development Plan an item on the possibility of assistance in obtaining external grants for training students and teaching staff.

Conclusions of the EEC on the criteria for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer physics":

According to the "Students" standard, 13 criteria are disclosed, of which 13 have a satisfactory position according to the EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics".

6.7. Standard "Teaching staff"

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

Evidence part

Experts note that the university's personnel policy is focused on effective personnel support for the implementation of the Development Strategy with a strong corporate culture, which provides for the provision of uniform approaches to work with personnel within the framework of corporate practice. The personnel policy of the University is available for the teaching staff of the university and the decisions made by the management of the EP are transparent, which is reflected on the pages of the graduating departments:

<https://iitu.kz/ru/articles/departments/radiotekhnika-elektronika-i-telekommunikazii>

<https://iitu.kz/ru/articles/departments/informazionnye-sistemy>

During conversations with the teaching staff, experts found out that the recruitment of teachers is carried out based on competitive selection: their qualifications are assessed within the framework of the requirements of the job description. The procedures for the admission, registration, dismissal, and certification of teachers are carried out in accordance with the Rules for the competitive replacement of positions of the teaching staff R-07, edition No. 4 dated December 14, 2018. There is a code of conduct for a teacher, which describes the moral and ethical aspects of teacher behavior in working with colleagues and students, as well as outside the university. Each teacher, signed, is familiar with his rights and obligations, both in the text of the employment contract, including its annexes, and in separate documents, each teacher has his own copy.

Since training at all EP of the cluster is provided in English, the main criterion for hiring is the presence of an IELTS certificate of at least 6.0.

From the analysis of documents submitted by the university on the Microsoft Teams platform, experts found that to implement the principle of Smart-learning, IITU has an agreement with KazNPU named after Abai on joint training of specialists in this area. All disciplines related to the digitalization of education are taught by the teaching staff of the IP department, and disciplines related to the pedagogical direction will be conducted by the teaching staff of KazNPU named after Abay. This allows the IITU not to open a pedagogy

department, to create laboratories of a pedagogical profile, not to duplicate the library fund with pedagogical literature, because access to such literature is provided by another institution based on a Memorandum.

Experts note that, in general, the scientific potential of the EP is qualified as high and meets the requirements for the staff. Also, every year, the teaching staff of the entire university undergoes a competitive and contractual commission, the purpose of which is to control the compliance of the selected candidates for replacing the teaching staff of the University with the criteria established in the Register of Qualification Requirements of IITU JSC.

The university's reporting documents indicate that the certification mechanism developed at the university makes it possible to provide a comprehensive assessment of the activities of teachers in the context of their functional duties. The certification format includes an analysis of the scientific and educational-methodical achievements of the teacher over the last three years; assessment of the public opinion of the heads and doctoral students of the department about the professional level of the teacher; examination of the quality of training. Based on the results obtained, the attestation commission, headed by a representative of the university's top management, draws conclusions about the teacher's suitability for the position held, and makes recommendations for further improving his professional development.

Analytical part

The Commission notes that the formation of the teaching staff is carried out based on the Rules for the competitive replacement of positions of the teaching staff and scientific workers of IITU.

The experts found that the directions of the EP "6B01501 Informatics and organization of digital education" and "6B01503 Computer physics" are focused on training future teachers for schools/colleges, however, the planning of part-time disciplines that form the main pedagogical competencies requires revision. And, according to EP "8D06101 Clever Systems", it is assumed that the teaching staff will include practitioners. Given these facts, the EEC recommends that from the 2021-2022 academic year to the staff of the graduating departments of qualified practitioners for conducting major disciplines in EP. Also, during interviews with the heads of the educational program, it was revealed that the work on attracting specialists to conduct classes from foreign schools is poorly carried out.

During an online meeting with the teaching staff, the commission revealed that the teachers maintain high-quality individual documentation, correctly and timely fill out individual plans for all sections, are engaged in science, projects, have scientific publications in rating journals, and are engaged in curatorial work. At the end of each semester, the departments consider the implementation of the individual plan for sections, however, the university does not have a rating system that would motivate EP teachers and would support, including material incentives.

The EEC recommends to the management of the educational organization from the 2021-2022 academic year to develop and implement a rating system/KPI to motivate the professional and personal development of EP teachers.

According to the teachers and heads of the EP, plans for professional development are developed for the teaching staff for each year. Training and advanced training of the teaching staff is mainly carried out through doctoral studies, short-term seminars, short-term courses and internships at leading universities and enterprises in Kazakhstan, as well as abroad. The EEC states that there is an advanced training program for teaching staff, however, in terms of EP development, the issue of academic mobility of teachers, which is necessary for the development of EP, is not considered.

From the data provided by the heads of the EP, it became known that in 2019-2020, 1 teacher was invited under the academic mobility program at the IITU, and the students and teachers of the EP, due to the restrictions caused by the pandemic, did not travel under the mobility programs. Nevertheless, the EEC recommends that the heads of the EP, by the end of

the 2020-2021 academic year, include in the EP development plan an item on academic mobility of teachers with specific measurable indicators and appoint those responsible for the implementation of the plan.

According to the results of the survey, the teaching staff is rated as "Very good":

- *correspondence of the EP content to their scientific and professional interests and needs - 79.7%, good - 20.3%;*
- *opportunities provided by the university for the professional development of teaching staff - 62.5%, good - 39.9%;*
- *the opportunities provided by the university for the career growth of teaching staff - 48.4%, good - 50%;*
- *support from the university for research endeavors of the teaching staff - 50%, "good" - 45.3%;*
- *academic mobility - 42.2%, good - 51.6%;*
- *advanced training - 39.1%, good - 56.3%, satisfactory - 4.7%;*
- *encouragement of innovative activity of teaching staff - 42.2%, good - 48.4%, satisfactory - 9.4%.*

Strengths/best practice for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer physics":

No strengths have been identified for this standard.

Recommendations for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics":

- *from the 2021-2022 academic year to the staff of the graduating departments of qualified practitioners for the conduct of major disciplines in EP;*
- *from the 2021-2022 academic year, develop and implement a rating system/KPI to motivate the professional and personal development of EP teachers;*
- *by the end of the 2020-2021 academic year, include in the EP development plan an item on academic mobility of teachers with specific measurable indicators and appoint those responsible for implementing the plan.*

Conclusions of the EEC on the criteria for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer physics":

According to the standard "Teaching staff" 9 criteria are disclosed, of which according to EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics" 8 have a satisfactory position, 1 suggests improvement.

6.8. Standard "Educational resources and student support systems"

The educational organization must guarantee enough training resources and student support services that meet the goals of the EP.

✓ *The educational organization must demonstrate the sufficiency of material and technical resources and infrastructure, considering the needs of various groups of students in the context of EP (adults, working people, foreign students, as well as students with disabilities).*

✓ *The EP's management must demonstrate the existence of procedures for supporting various groups of students, including information and counseling.*

✓ *The EP management must demonstrate the compliance of information resources with the EP specifics, including:*

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

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

- *examination of research results, graduation theses, dissertations for plagiarism;*

- *access to educational Internet resources;*

- *functioning of WI-FI on the territory of the educational organization.*

✓ *The educational organization should strive to ensure that the educational equipment and software intended for use in the development of educational programs are like those used in the respective industries.*

Evidence part

Experts note that the university has a material and technical base that provides for all types of practical training and research work of students provided for by educational programs, this is evidenced by an online excursion with a demonstration of educational resources, as well as the availability of well-organized educational resources: a corporate information system of remote training for teachers and students (<https://dl.iitu.kz>), deployed Microsoft Teams platform, Apple Training Center laboratories, SAS Academic Center, 1C Laboratory.

An online visit of EEC experts showed that the EP management provides all the possibilities of online learning, the use of virtual models, databases, and data analysis programs in educational activities. In addition, under the conditions of quarantine, the university provided the technical opportunity to participate in academic mobility programs and international research projects online, which demonstrates the high level of technological support provided to students and teaching staff.

The analysis of the information resources of the university, carried out by the experts of the EEC, showed that the university library has an electronic catalog based on the KABIS library and information system, access to electronic publications of the RIEL, free access to the Academic on-line journal of the American Association for the Advancement of Science «Science», Thomson Reuters, Science Direct of Elsevier, Scopus, Springer, which is good practice.

As a result of the analysis of the documents submitted by the university and the online visit by the EEC experts, it was found that the material and technical base of the university has excellent potential and has been significantly modernized by updating the computer park and laboratory equipment. The university operates a computer network with Internet access, covering

all departments of the university, as well as computer classes and library halls. The bandwidth of the Internet connection is 576 Mbps, which is an excellent indicator for conducting online training of any kind. Wi-Fi coverage is available in all classrooms of the university, except for the basement.

Analytical part

To get acquainted with the entire infrastructure of the EEC University, a video was presented, teachers and students, doctoral students at International Information Technology University have access to such university resources as a scientific library with a hall of electronic resources, a health center with a medical office, a canteen, a buffet, a coffee shop in each academic building, a rented sports complex (Auezov str 141-7316 sq m). It follows from the documents submitted by the university that the university has a computer park with 787 computers and 40 computer labs, the hardware and software of which is regularly updated, in accordance with the requests of the departments. Students of the programs have free access to computer classes, halls of electronic resources of the university, which are connected to the Internet, but the official website and information resources are not designed for the visually impaired, the management of the EO should pay attention to this.

The right to the availability of high-quality education is guaranteed by the legislation of the Republic of Kazakhstan to all students, regardless of individual characteristics, in this regard, the EEC recommends developing a plan for the development of the university infrastructure, considering the needs of students with disabilities, including a version of the university website for the visually impaired.

During the visual online examination, the commission could not see the laboratory of mechatronics and Clever Systems, the laboratory "Unicef", since there was no Wi-Fi network in the basement. The University has a Center for Information and Telecommunication Technologies, whose tasks include updating and maintaining computer networks, office equipment, developing software support, providing technical support to faculties and departments. EEC recommends for the successful implementation of EP in a remote form to implement remote access of students to laboratory equipment, since the university has all the possibilities for this.

According to the results of the questioning of students, 71.3% are "completely" satisfied with the existing library resources of the university; educational resources of the university - 64.3%; availability of computer classes - 69.6%; availability and quality of Internet resources - 64.3%; classrooms, classrooms for large groups - 54.8%; lounges for students - 32.2%; available computer classes - 59.1%; available scientific laboratories - 53%; the quality of medical care - 56.5%; providing students with a hostel - 22.6%.

Strengths/best practice for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer physics":

- the university has a material and technical base that provides for all types of practical training and research work of students provided for in educational programs;
- EP management provides all the possibilities of online learning, the use of virtual models, databases and data analysis programs in educational activities, which demonstrates a high level of technological support provided to students and teaching staff;
- EP management provides ample opportunities for the use of electronic library resources in educational and scientific activities;
- the technical capabilities of computer and network equipment available at the university provide excellent opportunities for conducting online learning of any kind.

Recommendations for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics":

- for the successful implementation of EP in a remote form, implement remote access of students to laboratory equipment in the educational process;
- develop a plan for the development of the university infrastructure, considering the needs of students with disabilities, including a version of the university website for the visually impaired.

Conclusions of the EEC on the criteria for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer physics":

According to the standard "Educational resources and student support systems" 8 criteria are disclosed, of which according to EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer physics" 4 have a strong position, 4 - satisfactory.

6.9. Standard "Public awareness"

- ✓ The EO must publish reliable, objective, up-to-date information about the educational program and its specifics, which should include:
 - ✓ *The EO must publish reliable, objective, up-to-date information about the educational program and its specifics, which should include:*
 - *expected learning outcomes of the implemented educational program;*
 - *qualifications and/or qualifications that will be awarded upon completion of the educational program;*
 - *teaching and learning approaches, as well as the system (procedures, methods and forms) of assessment;*
 - *information about passing points and educational opportunities provided to students;*
 - *information about employment opportunities for graduates.*
 - ✓ *The management of the educational program should provide for a variety of ways of distribution.*
 - ✓ *Information, including mass media, information networks for informing the public and interested persons.*
 - ✓ *Public awareness should include support and clarification of the country's national development programs and the system of higher and postgraduate education.*
 - ✓ *EO should demonstrate the reflection on the web resource of information that characterizes it in general and in the context of educational programs.*
 - ✓ *An important factor is the availability of adequate and objective information about the teaching staff educational program.*
 - ✓ *An important factor is to inform the public about cooperation and interaction with partners in the framework of the educational program.*

Evidence part

The University provides information to the public about its activities through its official website <https://www.iitu.kz>, official social media pages such as Facebook, Instagram, national and regional media, and information resources of partner organizations.

Public awareness also includes information on cooperation and interaction with partners within the framework of the EP, support, and explanation of the national development programs of the country and the system of higher and postgraduate education. On the university's website <https://iitu.kz> in the section "Mass media about IITU", materials are presented in which the transformation of education in the digital environment, new challenges and opportunities are discussed in detail.

Information about the EP is presented in syllabuses, which are available in the departments

in the paper version and duplicated in the electronic version in the distance learning system based on Moodle (<https://dl.iitu.kz>). All students have access to the system.

All information about the calendar of the educational process, conducting boundary controls, sessions, exams and holidays is located at the following addresses:

<http://www.iitu.kz/article/show/id/157>

<http://schedule.iitu.kz/#/t/timetable/teacher/21850>

<http://www.iitu.kz/article/show/id/242>

<https://dl.iitu.kz/>

From the QMS documents, it follows that the implementation of the information policy is provided by the Department of Marketing and Public Relations of the university, whose work is regulated by the regulation "DP-02 Marketing Division". To improve the information and image work, the Department of Marketing and Public Relations annually at the beginning of the year approves a media plan for covering the University's events for the academic year.

Information about the possibility of obtaining a qualification at the end of training is indicated individually on each page of the educational program.

<https://www.iitu.kz/ru/articles/departments/>

General information about teaching, training, and evaluation procedures can be found at the following links:

<https://www.iitu.kz/ru/articles/about-university/>

<https://www.iitu.kz/ru/articles/for-students/>

Detailed information about the educational process and evaluation procedures is also available in the Register of Normative Documentation of the University.

<https://www.iitu.kz/ru/articles/obrazovanie>

Career questions, vacancies and internships are presented in the tab <https://www.iitu.kz/ru/articles/career/>. Communication with the media

<https://www.iitu.kz/ru/articles/smi-o-IITU/>

Various tools are used for prompt notification and information exchange between staff and teachers. First, corporate mail is widely used mail.iitu.kz, in which various mailing lists for departments and students work effectively. Additionally, an internal corporate chat is used.

Experts found that the training portal <https://dl.iitu.kz> It is fully integrated into the educational process and allows teachers to provide students with educational material in a convenient form, conduct knowledge control, and mark attendance. Most of the final exams are conducted in electronic form on this portal. Additionally, in some specialized disciplines (Cisco, Microsoft, SAP, SAS), exams are conducted via the Internet on specialized training portals of these organizations.

Experts note that in IITU JSC there is an "Innovation Center", where students can work on their innovative projects together with leading specialists of the university.

Analytical part

As part of the analysis of the information activity of the IITU, experts worked out the official website <https://www.iitu.kz>, as well as dl.iitu.kz portals and Microsoft Teams.

EEC made sure that on two educational portals of the university: dl.iitu.kz and Microsoft Teams-provides complete information about the learning process of each student for the entire period. Records of academic performance in all disciplines, GPA are kept, orders and announcements are placed. It also provides information on each student, employee, and teacher with a search engine, reports on various criteria. Information on the portals is constantly updated and synchronized.

From interviews with stakeholders of the EP, the experts found that various tools are used for prompt notification and exchange of information between employees and teachers. First, corporate mail is widely used mail.iitu.kz, in which various mailing lists for departments and students work effectively. Additionally, an internal corporate chat is used, all departments have pages on social networks Facebook, Instagram, Twitter, VK and all students have subscriptions.

On the website of the IITU admissions committee (<https://iitu.kz/ru/articles/ent-2020>) a list of educational programs is provided, you can find out about them by clicking on the links, but the EEC found insufficient materials about educational programs and teachers serving the EP. Also, during the conversation with the heads of structural divisions of the university, it became clear that there are no regulatory documents for updating information about EP, departments, and personal pages of teaching staff.

Experts note that the positive and weak aspects of the "Public Awareness" standard, which were identified during the analysis, make it possible to plan the necessary changes, weaknesses: irregular updating of the news feed on the site and in social networks should be minimized, based primarily on the existing strengths. Based on the results of the analysis, the EP management will be able to focus attention and efforts on developing strengths and eliminating negative factors.

Based on the analysis, it is possible to form an activity strategy, i.e. a long-term plan to achieve certain goals in the future, for example, to organize monitoring of page updates in social networks and the site.

The survey of students conducted during the visit of the EEC showed that full satisfaction with the content and information content of the university's website in general and the faculty is 90.2%; informing students about courses, EP, and the academic degree received-65.2%; informing the requirements for successfully completing this educational program (specialty) - 62.6%.

Strengths/best practices for the EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics":

Strengths for this standard were not identified.

Recommendations for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics»:

- to introduce regulations on updating information about EP and departments, as well as minimum requirements for the content of personal pages of teachers (including academic details, list of courses read, list of main publications, contact information);
- fill in the "IITU Projects" page, publish information about joint projects with all partner universities on the university's website.

Conclusions of the EEC on the criteria for the EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics»:

According to the standard "Informing the public", 10 criteria are disclosed, of which according to the EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics" 10 have a satisfactory position.

6.10. Standard "Standards in the context of individual specialties»

- ✓ The EO must publish reliable, objective, up-to-date information about the educational program and its specifics, which should include:
- ✓ *The EO must publish reliable, objective, up-to-date information about the educational program and its specifics, which should include:*
 - *expected learning outcomes of the implemented educational program;*
 - *qualifications and/or qualifications that will be awarded upon completion of the educational program;*
 - *teaching and learning approaches, as well as the system (procedures, methods and forms) of assessment;*
 - *information about passing points and educational opportunities provided to students;*

- *information about employment opportunities for graduates.*
- ✓ *The management of the educational program should provide for a variety of ways of distribution*
- ✓ *Information, including mass media, information networks for informing the public and interested persons.*
- ✓ *Public awareness should include support and clarification of the country's national development programs and the system of higher and postgraduate education.*
- ✓ *EO should demonstrate the reflection on the web resource of information that characterizes it in general and in the context of educational programs.*
- ✓ *An important factor is the availability of adequate and objective information about the teaching staff educational program.*
- ✓ *An important factor is to inform the public about cooperation and interaction with partners in the framework of the educational program.*

Evidence part

The experts found that the EP "8D06101 Clever Systems" is a joint training for all IT programs and provides professional qualifications in the field of knowledge representation and processing in Clever Systems, theoretical research is aimed at studying intelligent processes and creating appropriate mathematical models. Experimental work is carried out by composing computer programs and creating machines that solve intellectual problems or behave intelligently in each situation.

The EP plan includes a significant number of disciplines and activities aimed at obtaining students' research experience in the application of theoretical knowledge, such as research and educational practice.

During the online visit, the EEC members were convinced that teaching within the framework of the EP is conducted based on current achievements of world science and practice in the field of specialization, as well as using modern teaching technologies, in the preparation of practical educational material for the formation of IT competence among students.

From the analysis of the documents of EP, it follows that knowledge in the field of education management student's EP "6B01501 Informatics and organization of digital education" and "6B01503 Computer physics" can obtain within the discipline "Management in education", there is also a teaching practice for 3rd and 4th year, internship for 2 year, externship in the 4th year.

Members of the EEC noted that the presence of the mechanism of formation of the graduates EP "6B01501 Informatics and organization of digital education" and "6B01503 Computer physics" learning outcomes in psychology and skills in communications, analysis of behavior, methods of prevention and resolution of conflicts, the motivation of students foreseen in the framework of the academic disciplines "Psychology", "Pedagogy", "Educational psychology", "Sociology", "Cultural studies", "Politics", "Philosophy", "Modern history of Kazakhstan", Foreign language, Kazakh (Russian) language, and there are also disciplines on the study of innovative teaching methods and training planning.

Analytical part

Analyzing the submitted documents the guidance EP the EEC notes that under EP "6B01501 Informatics and organization of digital education" and "Computer physics 6B01503" provided teaching practice for 3rd and 4th year, internship for 2 year, externship in the 4th year, however, presents the guidelines for these practices is not consistent with the direction of the EP and considers that professional practices should be organized in educational institutions, and also include activities such as classroom observations, conducted by teachers of schools/colleges, as well as in senior courses with admission to conduct classes.

The EEC made sure that the EP "6B01501 Informatics and organization of digital education" and "6B01503 Computer Physics" have disciplines that teach innovative teaching methods and

training planning, but these skills are provided within the disciplines of the variable part of the working curriculum, which needs to be revised.

The heads of EP "8D06101 Clever Systems" noted that seminars are held inside the university and practitioners are invited and during an online meeting with employers this fact was confirmed, Amirgaliyev E. N., head of the Laboratory of Artificial Intelligence and Robotics said that he advised doctoral students, and Konysbayev A. T., President of the Association of Innovative Companies of the PIT "Park of Innovative Technologies" promised to actively participate in the training of top-level specialists in the future.

Experts note that the EP "8D06101 Clever Systems" is aimed at developing doctoral students' skills in the areas of solving problems of design and management based on artificial intelligence methods, software development for modern Clever Systems and requires more practical experience from teachers. During the online meeting with the teaching staff, it turned out that only 1 person has a long-term experience in the enterprise for all EP and this is not enough, the management of the EP EEC recommends attracting practical teachers from leading research institutes in the direction of EP by concluding a contract for conducting classes in laboratories and including them in the schedule.

Strengths/best practices for the EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics":

Strengths for this standard were not identified.

Recommendations for the EP "6B01501 Informatics and organization of digital education", "6B01503 Computer Physics":

- by the beginning of the practice of the 2020-2021 academic year, to revise and publish "Methodological recommendations for the passage of professional practices" considering the direction of the EP, including:

- 1) attending lectures and other classes held by teachers at schools/colleges, attending seminars and familiarizing/discussing methodologies and the latest technologies of training on the basis of practices;
- 2) conducting practices in senior courses with admission to conducting classes in schools/colleges.

Additional recommendations for EP "8D06101 Clever Systems":

- by the beginning of the 2021-2022 academic year, conclude contracts with leading research institutes/Centers/ IT companies in the direction of EP and include in the schedule at least 1 lesson per semester at the enterprise.

Conclusions of the EEC on the criteria for the EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics»:

According to the standard "Standards in the context of individual specialties", 9 criteria are disclosed, including:

- according to the section "Education" 4 criteria, of which according to the EP "6B01501 Informatics and organization of digital education", "6B01503 Computer Physics" 3 have a satisfactory position, 1-suggests improvement;

- according to the section "Natural sciences" 5 criteria, of which according to the EP "8D06101 Clever Systems" 5 have a satisfactory position.

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

for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics»

According to the standard "Educational management program":

- the university has developed a Quality Policy for 2019-2020, published on the official website, reflecting the task of transforming IITU into a digital university;
- transparency of EP management is achieved by the presence of a functioning QMS and the effective use of digital technologies, such as EDMS Documentolog, «Campus» AIS and Microsoft Teams, for management decision-making by management;
- the university has implemented and successfully operates a quality management system, distributed responsibility for individual processes in accordance with State system of technical regulation of the Republic of Kazakhstan ISO 9001-2016 with periodic audit;
- An innovative approach to designing the content of the EP is to combine the traditional development of subject competencies in physics and Informatics with competencies in the field of modern digital technologies, data analysis, the use of cloud systems and artificial intelligence, as well as in-depth language training of graduates;
- The management of the EP, including the rector, is open and accessible to students and teachers, including through the means of online communication used in the university.

According to the standard "Information management and reporting":

- use of the educational process management AIC "Campus" and the Microsoft Teams corporate platform for information management, which allows organizing video lectures, monitoring attendance, tracking the activity and perception of the material by students;
- application for data processing and analysis of information and analytical licensed software Microsoft Business Intelligence (BI), which allows you to analyse data in various sections and sequences, predict and evaluate the effectiveness of changes made;
- The QMS of the University contains documented procedures for resolving conflicts of students, teachers, and other employees of the university, implemented in practice.

According to the standard "Development and approval of the educational program",
the strengths of this standard have not been identified.

According to the standard "Continuous monitoring and periodic evaluation of educational programs",
the strengths of this standard were not identified.

According to the standard "Student-centered learning, teaching and assessment of academic performance":

The presence of many additional educational programs, the use of various digital platforms by the university, various forms of submission and control of educational material allows us to conduct a student-centered learning methodology.

According to the "Students" standard

no strengths have been identified for this standard.

According to the "Teaching staff" standard

no strengths have been identified for this standard.

According to the "Educational resources and student support systems" standard:

- the university has a material and technical base that provides all types of practical training and research work of students provided for by educational programs;

- The EP management provides all the opportunities for online learning, the use of virtual models, databases and data analysis programs in educational activities, which demonstrates the high level of technological support provided to students and teaching staff;
- The EP management provides extensive opportunities for using electronic library resources in educational and scientific activities;
- The technical capabilities of the computer and network equipment available at the university provide excellent opportunities for conducting online training of any kind.

According to the "Public Awareness" standard

no strengths have been identified for this standard.

According to the "Standards in the context of individual specialties" standard,
the strengths of this standard were not identified.



(VII) REVIEW OF QUALITY IMPROVEMENT RECOMMENDATIONS FOR EACH STANDARD

for EP "6B01501 Informatics and organization of digital education", "8D06101 Clever Systems", "6B01503 Computer Physics»

According to the standard "Educational management program":

-introduce into the regulation on the development and approval of educational programs the regulations for the formation and regular revision of the development plan of the EP with the involvement of students and employers;

-conduct training of the management of the EP in the field of risk management with obtaining appropriate certificates, implement risk management of the EP;

-by the 2021-2022 academic year, implement the procedure for approving the EP and the EP development plan with the collective management bodies of the EP, including representatives of employers, students and other interested parties.

Additional recommendations for EP "6B01501 Informatics and organization of digital education", 6B01503 - " Computer physics»:

-by the 2021-2022 academic year, within the framework of the memorandum of cooperation with Abai Kazakh National Pedagogical University conclude an additional agreement on the implementation of the EP with leading scientists and teachers of Abai Kazakh National Pedagogical University in the field of pedagogy for the formation of students ' pedagogical competencies at a high level;

-by the 2021-2022 academic year, include in the Development Plan of the EP an item on joint/two-degree education with leading foreign / Kazakh pedagogical universities, indicating the terms and responsible persons.

According to the " Information management and reporting» standard:

-no recommendations have been developed for this standard.

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

-ensure the participation of representatives of employers and students in the procedure for approving and reviewing the content of the EP.

Additional recommendations for EP "6B01501 Informatics and organization of digital education", 6B01503 - " Computer physics»:

-by the beginning of the 2nd semester of the 2020-2021 academic year, the disciplines that form pedagogical competencies, for example: "Methods of teaching Informatics/physics", "Educational smart technologies", "Mobile learning technologies and augmented reality", "Fundamentals of scientific activity in the school course of Informatics", etc., should be transferred from the elective component to the University component.

-by the 2021-2022 academic year, include two disciplines that form pedagogical competencies in the list of subjects submitted for the state exam of the EP;

-prior to the beginning of the students ' professional practices on EP, plan their conduct in educational organizations.

Additional recommendations for EP 8D06101 - "Clever Systems":

- by the 2021-2022 academic year, include the courses "Academic Writing" and "Methods of Scientific Research" in the Cycle of Basic disciplines (BD) for more complete compliance with the regulatory documents of the Republic of Kazakhstan.

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

-no recommendations have been developed for this standard.

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

- to promptly inform interested parties, create a section on the IITU website for publishing the results of monitoring and periodic evaluation of educational programs.

According to the " Student-centered learning, teaching and assessment of academic performance»

standard:

-To develop scientific research on teaching methods and exchange academic experience, it is recommended to hold annual joint events, for example, in the framework of the "e-Learning" section at the international conference "Digital Technologies in Education, Science and Industry".

According to the "Students" standard:

-by the 2021-2022 academic year, draw up a phased plan for the development of the student campus to improve social conditions for students: the construction of a dormitory, a gym, universal Wi-fi access, affordable prices in student canteens, affordable medical services, etc.;

-by the 2021-2022 academic year, develop and implement a comprehensive program to attract, adapt foreign students and support gifted students; include in the Development Plan of the EP an item on the possibility of assistance in obtaining external grants for the training of students and teaching staff.

According to the "Teaching staff" standard:

-from the 2021-2022 academic year, to introduce qualified practitioners to the staff of the graduating departments to conduct specialized disciplines in the EP;

-from the 2021-2022 academic year, develop and implement a rating/KPI system to motivate the professional and personal development of teachers;

-by the end of the 2020-2021 academic year, include an item on academic mobility of teachers with specific measurable indicators in the EP development plan and appoint those responsible for the implementation of the plan.

According to the "Educational resources and student support systems" standard:

-for the successful implementation of the EP in a remote form, implement remote access of students to laboratory equipment in the educational process;

-develop a plan for the development of the university's infrastructure, considering the needs of students with disabilities, including a version of the university's website for the visually impaired.

According to the "Public Awareness" standard:

-to introduce regulations on updating information about OP and departments, as well as minimum requirements for the content of personal pages of teachers (including academic details, list of courses read, list of main publications, contact information);

-fill in the "ITU Projects" page, publish information about joint projects with all partner universities on the university's website.

According to the "Standards in the context of individual specialties" standard.

for EP "6B01501 Informatics and organization of digital education", "6B01503 Computer physics»:

-by the beginning of the 2020-2021 academic year, revise and publish the "Guidelines for the passage of professional practices", considering the direction of the EP, including:

1. attending lectures and other classes held by teachers at schools/colleges, attending seminars and familiarizing / discussing methodologies and the latest technologies of teaching on the bases of practices;
2. conducting practices in senior courses with admission to conduct classes in schools/colleges.

for EP "8D06101 Clever Systems»: by the beginning of the 2021-2022 academic year, sign contracts with leading research institutes/Centers/IT companies in the field of EP and include in the schedule at least 1 lesson per semester on the enterprise.

**(VIII) REVIEW OF RECOMMENDATIONS FOR THE DEVELOPMENT OF THE
EDUCATION ORGANIZATION**

A list of the EEC recommendations related to the development of the EO. These recommendations do not apply to measures to improve the quality and compliance with the IAAR standards:

The members of the EEC recommend that the university management develop a project for the development of the student campus, including:

- construction of a dormitory for students;
- construction of its own sports complex, including a sports hall.



Appendix 1. Evaluation table "CONCLUSION OF THE EXTERNAL EXPERT COMMISSION"

"6B01501 Informatics and organization of digital education", "8D06101 Clever systems", "6B01503 Computer physics" EP

№ п\п	№ п\п	Evaluation criteria	The position of the educational organization			
			Strong	Satisfactory	Suggests improvement	Unsatisfactory
Standard "Educational Management Program"						
1		The organization of higher and/or postgraduate education must have a published quality assurance policy. Quality assurance policies should reflect the relationship between research, teaching and learning.	+			
2		The organization of higher and (or) postgraduate education should demonstrate the development of a culture of quality assurance, including in the context of EP.		+		
3		The commitment to quality assurance should apply to any activity performed by contractors and partners (outsourcing), including the implementation of joint/double-degree education and academic mobility.			+	
4		Manual EP demonstrates a willingness to ensure the transparency of the development plan of EP based on the analysis of its functioning, the actual positioning of EO and focus its activities to meet the needs of the state, employers, students, and other stakeholders. The plan should contain the terms of the beginning of the implementation of the educational program.		+		
5		Manual EP demonstrates the existence of mechanisms of formation and regular revision of the development plan of EP and monitor its implementation, evaluate achievement of learning objectives, meet the needs of students, employers and society, decision-making aimed at continuous improvement of EP.			+	
6		The management of the EP should involve representatives of groups of interested persons, including employers, students and teaching staff in the formation of the development plan of the EP.		+		
7		The management of the EP must demonstrate the individuality and uniqueness of the EP development plan, its consistency with the national priorities and development strategy of the organization of higher and (or) postgraduate education.		+		
8		The organization of higher and (or) postgraduate education should demonstrate a clear definition of those		+		

		responsible for business processes within the framework of the EP, an unambiguous distribution of staff responsibilities, and the differentiation of the functions of collegial bodies.				
9		The management of the EP must provide evidence of the transparency of the educational program management system.	+			
10		The management of the EP must demonstrate the existence of an internal quality assurance system for the EP, including its design, management and monitoring, their improvement, and fact-based decision-making.	+			
11		The management of the EP should implement risk management, including within the framework of the EP undergoing primary accreditation, as well as demonstrate a system of measures aimed at reducing the degree of risk.		+		
12		The management of the EP should ensure the participation of representatives of employers, teaching staff, students, and other interested persons in the composition of the collegial management bodies of the educational program, as well as their representativeness in making decisions on the management of the educational program.			+	
13		The EO should demonstrate innovation management within the framework of the EP, including the analysis and implementation of innovative proposals.	+			
14		The management of the EP should demonstrate evidence of readiness for openness and accessibility for students, teaching staff, employers, and other interested parties.	+			
15		The management of the EP should be trained in educational management programs.		+		
Total by standard			5	7	3	
Standard “Information Management and Reporting”						
16	1.	The EO should demonstrate that it has a system for collecting, analyzing, and managing information based on the use of modern information and communication technologies and software tools, and that it uses a variety of methods for collecting and analyzing information in the context of the EP.	+			
17	2.	The management of the EP should demonstrate the existence of a mechanism for the systematic use of processed, adequate information to improve the internal quality assurance system.	+			
18	3.	EP management should demonstrate fact-based decision-making.		+		
19	4.	Within the framework of the EP, a system of regular reporting should be provided, reflecting all levels of the structure, including an assessment of the effectiveness and efficiency of the activities of departments and departments, and scientific research.		+		
20	5.	The EO should establish the frequency, forms, and methods of evaluating the management of the EP, the activities of collegial bodies and structural divisions,		+		

		senior management, and the implementation of scientific projects.				
21	6.	EO should demonstrate the procedure and ensuring the protection of information, including the definition of responsible persons for the accuracy and timeliness of information analysis and data reporting.		+		
22	7.	An important factor is the availability of mechanisms for involving students, employees and teaching staff in the processes of collecting and analyzing information, as well as making decisions based on them.		+		
23	8.	The management of the EP should demonstrate the existence of a mechanism for communication with students, employees, and other stakeholders, as well as mechanisms for conflict resolution.	+			
24	9.	The EO should demonstrate that there are mechanisms for measuring the satisfaction of the needs of the PPS, staff, and trainees within the framework of the EP.		+		
25	10.	The EO should provide for an assessment of the effectiveness and efficiency of activities, including in the context of the EP.		+		
		The information intended for collection and analysis in the framework of the EP should consider:				
26	11.	key performance indicators;		+		
27	12.	dynamics of the contingent of students in the context of forms and types;		+		
28	13.	academic performance, student achievement, and deduction;		+		
29	14.	students' satisfaction with the implementation of the EP and the quality of education at the university;		+		
30	15.	availability of educational resources and support systems for students.		+		
31	16.	The EO must confirm the implementation of the procedures for processing personal data of students, employees and teaching staff based on their documented consent.		+		
Total by standard			3	13	0	
Standard "Development and approval of the educational program"						
32	1.	The EO should define and document the procedures for the development of the EP and their approval at the institutional level.		+		
33	2.	The management of the EP should ensure that the developed EP meets the established goals, including the expected learning outcomes.		+		
34	3.	The management of the EP should ensure that there are developed models of the graduate of the EP, describing the learning outcomes and personal qualities.		+		
35	4.	The management of the EP must demonstrate the conduct of external examinations of the content of the EP and the		+		

		planned results of its implementation.				
36	5.	The qualification awarded at the end of the EP must be clearly defined and correspond to a certain level of the NSC.		+		
37	6.	The management of the EP should determine the impact of disciplines and professional practices on the formation of learning outcomes.		+		
38	7.	An important factor is the possibility of preparing students for professional certification.		+		
39	8.	The management of the EP must provide evidence of the participation of students, teaching staff and other stakeholders in the development of the EP, ensuring their quality.			+	
40	9.	The labor intensity of the EP should be clearly defined in Kazakhstan loans and ECTS.		+		
41	10.	The management of the EP should ensure that the content of the academic disciplines and the planned results correspond to the level of training (bachelor's, master's, doctoral).		+		
42	11.	The structure of the EP should provide for various types of activities that ensure that students achieve the planned learning outcomes.		+		
43	12.	An important factor is the correspondence of the content of the EP and the results of the EP training implemented by organizations of higher and (or) postgraduate education in the EHEA.		+		
Total by standard			0	11	1	
Standard "Continuous monitoring and periodic evaluation of educational programs"						
44	1.	The EP should define mechanisms for monitoring and periodically evaluating the EP to ensure that the goal is achieved and to meet the needs of students and society. The results of these processes should be aimed at continuous improvement of the EP.		+		
		Monitoring and periodic evaluation of the EP should include:				
45	2.	the content of the programs in the light of the latest scientific achievements in a particular discipline to ensure the relevance of the taught discipline;		+		
46	3.	changes in the needs of society and the professional environment;		+		
47	4.	workload and academic performance of students;		+		
48	5.	effectiveness of student assessment procedures		+		
49	6.	expectations, needs, and satisfaction of students with EP training;		+		
50	7.	the educational environment and support services and their compliance with the goals of the EP.		+		

51	8.	The EO, the management of the EP should define a mechanism for informing all stakeholders of any planned or taken actions in relation to the EP.		+		
52	9.	All changes made to the EP must be published. The management of the EP should develop a mechanism for reviewing the content and structure of the EP, considering changes in the labor market, the requirements of employers and the social demand of society.		+		
Total by standard			0	9	0	
Standard "Student-centered learning, Teaching and Performance Assessment"						
53	1.	The management of the EP should ensure respect and attention to different groups of students and their needs and provide them with flexible learning paths.		+		
54	2.	The EP guidelines should provide for the use of various forms and methods of teaching and learning.	+			
55	3.	An important factor is the availability of their own research in the field of teaching methods of educational disciplines of the EP.		+		
56	4.	The management of the EP should demonstrate the existence of feedback mechanisms on the use of various teaching methods and evaluation of learning outcomes.		+		
57	5.	The management of the EP should demonstrate the existence of mechanisms to support the autonomy of students, while providing guidance and assistance from the teacher.		+		
58	6.	The management of the EP must demonstrate that there is a procedure for responding to student complaints.		+		
59	7.	The EO should ensure consistency, transparency, and objectivity of the learning outcomes assessment mechanism for each EP, including the appeal.		+		
60	8.	The EO should ensure that the procedures for evaluating the learning outcomes of the students of the EP are consistent with the planned results and objectives of the program. The criteria and methods of evaluation in the framework of the EP should be published in advance.		+		
61	9.	The EO should define mechanisms to ensure that each EP graduate achieves learning outcomes and ensure the completeness of their formation.		+		
62	10.	Evaluators should be familiar with modern methods of evaluating learning outcomes and regularly improve their skills in this area.		+		
Total by standard			1	9	0	
Standard "Students"						
63	1.	The EO should demonstrate the existence of a policy for the formation of a contingent of students in the context of the EP from admission to graduation and ensure the transparency of its procedures. The procedures governing the life cycle of students (from admission to completion) must be defined, approved, and published.		+		

		The management of the EP should determine the order of formation of the contingent of students based on:				
64	2.	minimum requirements for applicants;		+		
65	3.	maximum group size for seminars, practical, laboratory and studio classes;		+		
66	4.	forecasting the number of state grants;		+		
67	5.	analysis of the available material and technical, information resources, human resources;		+		
68	6.	analysis of potential social conditions for students, including the provision of places in the hostel.		+		
69	7.	The management of the EP should demonstrate their readiness to conduct special adaptation and support programs for newly enrolled and foreign students.		+		
70	8.	The EO must demonstrate that its actions comply with the Lisbon Recognition Convention.		+		
71	9.	The EO should cooperate with other educational organizations and national centers of the "European Network of National Information Centers for Academic Recognition and Mobility/National Academic Recognition Information Centers" ENIC/NARIC to ensure comparable recognition of qualifications.		+		
72	10.	The management of the EP should demonstrate the existence of a mechanism for recognizing the results of academic mobility of students, as well as the results of additional, formal, and non-formal training.		+		
73	11.	The EO should provide opportunities for external and internal mobility of EP students, as well as readiness to assist them in obtaining external grants for training.			+	
74	12.	The management of the EP should demonstrate its readiness to provide students with internship places, promote the employment of graduates, and maintain contact with them.		+		
75	13.	EO needs to be able to provide graduates with EP documents confirming obtained qualifications, including achieved learning outcomes and the context, content and status of education and evidence of its completion.		+		
76	14.	An important factor is the availability of mechanisms for monitoring the employment and professional activity of graduates of the EP.		+		
Total by standard			0	13	1	
Standard "Teaching staff"						
77	1.	The EO should have an objective and transparent personnel policy, including in the context of the EP, including hiring, professional growth, and development of personnel, ensuring the professional competence of the entire staff.		+		
78	2.	The EO must demonstrate that the staff capacity of the TS corresponds to the development strategy of the EO and the specifics of the EP.		+		

79	3.	The management of the EP must demonstrate an awareness of responsibility for its employees and provide them with favorable working conditions.		+		
80	4.	The management of the EP should demonstrate a change in the role of the teacher in connection with the transition to student-centered learning.		+		
81	5.	The EO should determine the contribution of the teaching staff of the EP to the implementation of the EO development strategy, and other strategic documents.		+		
82	6.	The EO should provide opportunities for career growth and professional development of the teaching staff of the EP.		+		
83	7.	The management of the EP should demonstrate a willingness to involve practitioners of the relevant industries in teaching.			+	
84	8.	The EO should demonstrate the motivation for the professional and personal development of the teachers of the EP, including encouragement for the integration of scientific activities and education, the use of innovative teaching methods.		+		
85	9.	An important factor is the readiness to develop academic mobility within the framework of the EP, to attract the best foreign and domestic teachers.		+		
Total by standard			0	8	1	
Standard "Educational Resources and Student Support Systems"						
86	1.	The EO should ensure that there are sufficient training resources and student support services that meet the objectives of the EP.	+			
87	2.	The EO should demonstrate the sufficiency of material and technical resources and infrastructure, considering the needs of different groups of students in the context of the EP (adults, working, foreign students, as well as students with disabilities).		+		
		<i>The management of the EP should demonstrate that there are procedures in place to support various groups of students, including information and advice. The management of the EP must demonstrate that the information resources correspond to the specifics of the EP, including:</i>				
88	3.	technological support for students and teaching staff in accordance with educational programs (for example, online training, modeling, databases, data analysis programs);		+		
89	4.	library resources, including the collection of educational, methodological, and scientific literature on general education, basic and specialized disciplines on paper and electronic media, periodicals, access to scientific databases;		+		
90	5.	examination of research results, final papers, dissertations for plagiarism;		+		

91	6.	access to educational internet resources;	+			
92	7.	functioning of WI-FI in the territory of the educational organization.		+		
93	8.	The EO should strive to ensure that the training equipment and software intended for use in the development of educational programs are like those used in the relevant industries.		+		
Total by standard			4	4	0	
Standard "Public Awareness"						
		The EO should publish reliable, objective, up-to-date information about the educational program and its specifics, which should include:				
94	1.	expected learning outcomes of the implemented educational program;		+		
95	2.	qualifications and / or qualifications that will be awarded upon completion of the educational program;		+		
96	3.	teaching and learning approaches, as well as the system (procedures, methods, and forms) of assessment;		+		
97	4.	information about passing points and educational opportunities provided to students;		+		
98	5.	information about employment opportunities for graduates.		+		
99	6.	The EP guidelines should provide for a variety of ways to disseminate information, including mass media, information networks to inform the public and stakeholders.		+		
100	7.	Public awareness should include support and clarification of the country's national development programs and the system of higher and postgraduate education.		+		
101	8.	The EO must demonstrate the reflection on the web resource of information that characterizes it in general and in the context of educational programs.		+		
102	9.	An important factor is the availability of adequate and objective information about the teaching staff of the EP.		+		
103	10.	An important factor is to inform the public about cooperation and interaction with partners within the framework of the EP.		+		
Total by standard			0	10	0	
Standard "In the context of individual specialties"						
EDUCATION						
Educational programs in the field of "Education", such as " <i>Computer Physics</i> ", " <i>Informatics and organization of digital education</i> ", etc., must meet the following requirements:						
104	1.	The EP manual should include the mechanisms of formation of the graduates of the program learning outcomes in the field of psychology and skills in communications, analysis of behavior, methods of prevention and resolution of conflicts, the motivation of students.		+		

105	2.	The management of the EP should demonstrate the presence in the program of disciplines that teach innovative teaching methods and training planning, including interactive teaching methods, teaching methods with high involvement and motivation of students (games, case studies/situations, the use of multimedia tools).		+		
106	3.	The EP should focus on different types of practices: - attend lectures and other classes held by teachers; - conducting special seminars and discussions on methodologies and the latest training technologies; - the opportunity for students to listen to at least one discipline in the field of their specialization, taught by a practicing specialist.			+	
107	4.	The content of the EP should provide for the development of students of the world systems of knowledge, skills and methods of pedagogy, as well as knowledge in the field of education management.		+		
NATURAL SCIENCES						
		Educational programs in the areas of "Natural Sciences", for example, such as "Clever Systems", etc., must meet the following requirements:				
108	5.	The EP should include disciplines and activities aimed at gaining practical experience and skills in the specialty in general and in the core disciplines, including: - <i>excursions to enterprises for specialization (factories, workshops, research institutes, laboratories, educational and experimental farms, etc.),</i> - <i>conducting individual classes or entire disciplines at the enterprise of specialization;</i> - <i>conducting seminars to solve practical problems relevant to enterprises in the field of specialization, etc.;</i>		+		
109	6.	The teaching staff involved in the education program should include, as full-time teachers, practitioners with long-term experience as a full-time employee at enterprises in the field of specialization of the education program.		+		
110	7.	The content of all EP disciplines should be based on and include a clear relationship with the content of the fundamental natural sciences.		+		
111	8.	The management of the EP should provide for measures to strengthen practical training in the field of specialization.		+		
112	9.	The management of the EP should provide for the training of students in the application of modern information technologies.		+		
Total by standard			0	8	1	
TOTAL			13	92	7	