REPORT

on the results of the work of an external expert commission
for assessing the compliance with the requirements of the standards
of specialized accreditation of educational programs

EP
6B06114 "Biocomputing",
8D06105 "Data Science"

INTERNATIONAL UNIVERSITY OF INFORMATION
TECHNOLOGY
in the period from 19 to 21 October 2020

INDEPENDENT AGENCY FOR ACCREDITATION AND RATING
External Expert Commission

Addressed to
Accreditation
the IAAR Council

АККРЕДИТТЕУ ЖӘНЕ РЕЙТИНГТІҢ
ТӘУЕЛСІЗ АГЕНТТІГІ

НЕЗАВИСИМОЕ АГЕНТСТВО
АККРЕДИТАЦИИ И РЕЙТИНГА

INDEPENDENT AGENCY FOR
ACCREDITATION AND RATING

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in the period from 19 to 21 October 2020

2020 year

CONTENT

(I) LIST OF SYMBOLS AND ABBREVIATIONS

AC – Academic calendar
BD – Basic disciplines
EEAA – External evaluation of academic achievements
SAC – State Attestation Commission
SCES – State Compulsory Education standard
DET – Distance education technology
UNT – Unified national testing
EHEA – European Higher Education Area
ECTS – European Credit Transfer System
ILC – Information and library complex
ICT – Information and communications technology
IC – Individual curriculum
CC – Component of choice
CT – Complex testing
CTE – Credit technology of education
CED – Catalogue of elective courses
MES RK – Ministry of Education and Science of the Republic of Kazakhstan
MEP – Modular educational programs
IITU – International Information Technology University
RW – Research work
SRW – Student research work
RC – Required component
GED – General education disciplines
EP – Educational program
CD – Core disciplines
TS – Teaching staff
RIEL – Republican Interuniversity Electronic Library
RK – Republic of the Kazakhstan
WC – Working curriculum
QMS – Quality management system
SPE – Secondary professional education
IWS – Independent work of students
IWST – Independent work of students under the supervision of a teacher
SC – Standard curriculum
EMCD – Educational and methodological complex of discipline
EMD – Educational and Methodical Department
EMC – Educational and Methodological Council

(II) <u>**INTRODUCTION**</u>

In accordance with the order dated 12.10.2020 № 88-20-OD of the Independent Accreditation and Rating Agency, 19-21 October 2020, an External expert committee assessed the compliance of educational programs 6B06114 "Biocomputing" and 8D06105 "Data Science" of the International University of Information Technology with the IAAR standards of primary specialized accreditation (dated May 25, 2018, No. 68-18/1-OD, first edition).

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

The members of the EEC:

1. Chairman of the IAAR Commission – Tamyarova Maya Vladislavovna, Candidate of Technical Sciences, Deputy Dean for Educational and Distance Education Work of the Faculty of Aircraft Construction, Associate Professor of the Department of Measuring and Computing Complexes of the Ulyanovsk State Technical University (Ulyanovsk, Russia);

2. IAAR foreign expert – Grakovski Alexander, Professor, Faculty of Computer Science and Electronics, Institute of Transport and Communications (Riga, Latvia);

3. IAAR foreign expert – Veaceslav Nastasenko, Assoc. Prof., PhD, Technical University of Moldova (Chisinau, Moldova);

4. IAAR foreign expert – Ognyan Borisov Manolov, PhD. (c.t.sc.) on Cybernetics and Informatics, European Polytechnic University (Pernik, Bulgaria);

5. IAAR foreign expert – Alexey Mikhailovich Gostin, PhD. (c.t.sc.), Associate Professor, Ryazan State Radio Engineering University named after V.F. Utkin (Ryazan, Russia);

6. IAAR expert – Ismailova Aisulu Abzhapparova, PhD in Information Systems, S.Seifullin Kazakh Agrotechnical University (Nur-Sultan);

7. IAAR expert – Sultanova Zamzagul Khamitovna, Candidate of Economics, Acting Associate Professor, West Kazakhstan Agrarian and Technical University named after Zhangir Khan (Uralsk);

8. IAAR expert – Gulmira Aitmagambetova 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. IAAR employer – Rezov Michael Grigorievich, Chief specialist of the division for the support of electronic document management system, JSC "National information technologies" (Nur-Sultan);

11. IAAR student – Mauina Gulalem Myrzalievna, 3rd year doctoral student of the EP "Information Systems", S. Seifullin Kazakh Agrotechnical University (Nur-Sultan);

12. IAAR student – Telebi Aidos Bakhtiyarli, the student of 1st course of EP "Cyber Security", Astana IT University (Nur-Sultan);

13. IAAR student – Bobkova Svetlana Sergeevna, 4th year student of EP "Finance", Kostanay Regional University named after A. Baitursynov (Kostanay);

14. Agency observer – Timur Kanapyanov, PhD, Head of IAAR International Projects and Public Relations (Nur-Sultan).

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

The International University of Information Technology (IITU) is a leading educational institution in the Central Asian region in the field of training 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 May 29, 2009). The University was established in close cooperation with Carnegie Mellon University (USA).

The mission of the 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 technology 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.

Personnel training is carried out according to the 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 University's strategic priorities are aimed at achieving international recognition. First of all, the university positions itself as a Digital University, which involves training specialists of the digital age, developing systems of digital forms of education, developing and providing 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 the 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 preparation of initiative projects of teaching staff for participation in competitions;
- creating a mechanism for involving 80% of the teaching staff in research activities;
- forming 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 <u>Development Strategy of JSC MUIT for 2020-2025</u>, approved by the decision of the Board of Directors of JSC MUIT of January 15, 2020 (Minutes No. 5). In its activities, the University relies on the <u>Quality Policy</u> 2019-2020. Procedures and is responsible for the processes in the field of quality assurance is defined in a <u>Documented procedure for Internal audit</u>.

On March 5, 2019, JSC "International University of Information Technology" 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 the National Chamber of Entrepreneurs "Atameken" of the MCM specialty, IITU takes the 1st place among the universities of the republic with 3.78 points.

302 teachers conduct personnel 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 students of the correspondence department.

Monitoring and responsibility for the implementation of the EP is carried out by the graduating department "Mathematical and Computer Modeling". The department was established in 2015 on the basis of the department "Information Systems":

• the department provides training in English (accepted for the 1st year in 2020): EP 6B06114 "Biocomputing" - 13 students, EP 8D06105 "Data Science" - 4 doctoral students;

• the department employs 28 full-time and part-time teachers, including 3 Doctors of Science, 16 Candidates of Science and PhD, 8 masters (the average age of employees is 38 years);

• in the last 3 years, the department has been implementing research projects:

‒ AP05132546 "Basic and derived objects for ordered and generated structures, as well as their elementary theories" (2018-2020), 15 million of tenge;

‒ Erasmus+ project "Establishment of training and research centers and Courses development on Intelligent BigData Analysis in CA / ELBA" (2019-2020), 1 million of euro;

‒ AP05132736 «Modeling of degradation phenomena in the soil and creation of an autonomous non - destructive testing instrument with real-time software» (2018-2020), 30 million of tenge.

• academic mobility, employment of graduates, participation in ratings, commercialization of accredited EP were not evaluated due to the absence of graduates.

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

The educational programs EP 6B06114 "Biocomputing" and 8D06105 "Data Science" are accredited in IAAR for the first time.

(V) <u>DESCRIPTION OF THE EEC VISIT</u>

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

To coordinate the work of the EEC 18.10.2020, was held on-line setting meeting, which was divided powers between the members of the Commission, the revised schedule of the visit, an agreement in the selection of the methods of examination.

To obtain objective information about the quality of educational programs and the entire infrastructure of the university, to clarify the content of self-assessment reports, on-line meetings were held with the rector, vice-rectors of the university in the areas of activity, heads of structural divisions, heads of departments, teachers, students, graduates, employers. A total of 71 representatives took part in the meetings (Table 1).

Table 1 – Information about employees and students who took part in on-line meetings with the IAAR EEC:

Category of participants	Quantity
Rector	1
Vice-rectors	3
Heads of structural divisions	15
Deans	2
Heads of departments	7
Teachers	15
Students, master students, doctoral students	26
Graduates	-
Employers	2
Total	**71**

During the on-line tour, the members of the EEC were acquainted with University material and technical base, visited lecture halls 901 and 907, the library: reading room, electronic hall, KABIS, ABIS, the exhibition "Innovation Center", laboratories "Mathematical engineering", "Data Science and Machine Learning".

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

The EEC members visited the practice bases of the accredited programs in an online format: SRI "Institute of Human and Animal Physiology", SRI Institute of Railway Development.

EEC members attended on-line training sessions:

– EP 6B06114 «Biocomputing»: Nessipbaev Y.K. (MSc, senior lecturer), Algebra and geometry (Lecture), 20.10.2020, 11:00 - 11:50;

– EP 8D06105 «Data Science»: Rysbaiuly B. (D.ph.-m.s., professor), Nonlinear optimization problems, 20.10.2020, 18:30-20:20.

In accordance with the accreditation procedure, 64 teachers and 115 students were interviewed.

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, the recommendations for improving the

accredited educational programs of the 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.

(VI) COMPLIANCE WITH SPECIALIZED ACCREDITATION STANDARDS

6.1. *"Management of Educational Program" Standard*

✓ *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.*

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

✓ *Commitment to quality assurance should apply to all activities performed by contractors and partners (outsourcing), including joint/double-degree education and academic mobility.*

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

✓ *The EP management demonstrates the existence of mechanisms for forming and regularly reviewing the EP development plan and monitoring its implementation, evaluating the achievement of training goals, meeting the needs of students, employers and society, and making decisions aimed at continuous improvement of the EP.*

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

✓ *EP leadership 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 must demonstrate a clear definition of those responsible for business processes within the framework of the EP, an unambiguous distribution of staff responsibilities, and the division of functions of collegial bodies.*

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

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

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

✓ *The management of the educational program should ensure the participation of representatives of employers, teaching staff, students and other interested persons in the collegial management bodies of the educational program, as well as their representativeness in making decisions on the management of the educational program.*

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

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

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

Evidence part

The activities of the IITU are regulated by the Articles of association of the university, the Quality Policy, the Development Strategy of JSC IITU for 2018-2022, and a series of documents defining the academic policy of the university.

The Commission notes that the development Strategy is defined vision, which indicated that the educational activity of the University is aimed at closer integration of education, science and production, providing high quality educational and training it professionals and the development of innovative potential of the University and its positioning as the leading University of Kazakhstan in the field of ICT implementing the national strategic priorities identified by the State program "Digital Kazakhstan".

The mission of the University is to form the intellectual and scientific and technical potential of the country in the field of ICT through the integration of education, breakthrough innovative technology and scientific research.

The university's vision is to become a leader among higher education institutions in the

world and according to the national rating, to implement the concept of "University 4.0" (https://www.iitu.kz/ru/articles/about-university/missia-i-strategia/).

The mission, strategic goals and objectives of the university correspond to the state policy in the field of education, are consistent with national priorities and development programs in the field of education and science of the Republic of Kazakhstan. EEC emphasizes that the mission, strategic goals and objectives of the university are formulated on the basis of material and financial resources, human and intellectual potential, assessment of the possibilities of their implementation, as well as taking into account the analysis of external factors.

The development strategy of JSC IITU for 2020-2025 (approved by the Academic Council on January 15, 2020, Protocol No. 05), contains the mission, tasks and goals, as well as the academic and quality policy (https://iitu.kz/ru/articles/about-university).

The main directions of the development plans of EP 6B06114 "Biocomputing" and 8D06105 "Data Science" are developed in accordance with the Development Strategy of the Republic of Kazakhstan until 2050.

Monitoring the implementation of the strategy on an ongoing basis in the course of reporting on activities and General report of the entire University at meetings of the Senate. Issues that reflect strategic planning and its monitoring are considered at meetings of the Academic Council and the Board of Directors of the University. In addition, medium- and short-term objectives are outlined in the annual and monthly work plans of the university.

Evaluation of the effectiveness of the mission, goals and objectives of the University, as well as on the implementation of the EP is based on the monitoring of key performance indicators and timelines for implementation of the planned activities, the results of which are discussed at meetings of departments, the Academic Council and rector. The decisions taken at the meetings of the above-mentioned collegial bodies are brought to the attention of interested persons, and questions about the implementation of the decisions taken are regularly heard. IITU regularly reviews the strategic objectives of the university, taking into account changes in external factors, new key areas of state policy.

The members of the EEC were convinced that the university has developed a policy in the field of quality assurance (44 internal regulatory documents) aimed at continuous improvement of the educational process, research activities, and the implementation of innovative projects. This policy is based on the mission, vision and values of the University.

The university monitors the implementation of the work plans of structural divisions, sociological surveys, and monitoring studies of the quality of students' knowledge.

The characteristic features of EP 6B06114 "Biocomputing" and 8D06105 "Data Science" are:

- orientation in the development, implementation and evaluation of the educational program on the competencies of graduates, as learning outcomes in accordance with the Dublin Descriptors;

- using of the credit system ECTS (credit units) to assess the competencies that ensure their achievement;

- development of scientific contacts with universities and research organizations of the region and the world.

The main ways to support the mission, goals and objectives of EP 6B06114 "Biocomputing' and 8D06105 "Data Science" are:

- development and implementation of the Department's Strategic Development Plan for 2019-2023;
- annual internal audit (QP-02 documented procedure "Internal Audit" dated 01.11.2019);
- development and implementation of the annual plan and report of the department;
- discussion of the achieved results of the department's activities at the meetings of the department, the Academic Council of the faculty and the university.

The University ensures the awareness of stakeholders and transparency of the content of the main strategic documents and plans for the development of the EP, conducts public

discussions with representatives of all interested parties, and discussions at collegial bodies. EP is considered at a meeting of the department, the Academic Council, approved by the Rector.

The development of EP 6B06114 "Biocomputing" and 8D06105 "Data Science" involves the teaching staff, partners and employers. The Scientific Research Institute "Institute of Human and Animal Physiology" (Contract No. 23-1/19 of 04.03.2019) and the Research Institute of Railway Development LLP (Contract of 05.08.2019) take part in the formation and revision of the plan for the development of educational programs.

The identity and uniqueness of the accredited educational programs lies in their orientation to the modern labor market in the context of the COVID-19 pandemic, the availability of elective courses that complement the main disciplines commissioned by employers in this region. Reviews of the EP and recommendations of employers of the teaching staff of the department for the formation of elective courses.

At the end of each academic year, the departments, taking into account the needs, make an application for the necessary information and other material resources, update the laboratory development programs, and the university management conducts an annual internal audit.

The individuality of the plans for the development of educational programs is due to close interaction with employers, taking into account their specifics. Also, within the framework of the EP, it is possible for students to build individual educational trajectories through the choice of disciplines, taking into account personal preferences and the needs of the labor market in the region.

The focus of the EP on the development of general scientific professional skills is realized through constant monitoring of the quality of teaching disciplines and the compliance of learning outcomes with the requirements stated in the learning outcomes. Starting from the 3rd year, students will take special disciplines and various types of practices that form professional competencies. This approach allows you to form a specialist who is competitive in the market of IT specialists, aimed at continuous development and self-improvement.

Analytical part

The analysis conducted by the commission showed that the strategic plan for 2020-2025 corresponds to the current legislation of the Republic of Kazakhstan in the field of education and science, strategic and program documents adopted at the national level. Experts note that faculty, staff and students are aware of the Strategic development plan of the University, plans for the development of EP, which enables simultaneous development in the context of the content of strategic documents. *The organization has passed the international institutional accreditation of the agency Accreditation Agency for Study Programmes of Engineering, Information Science, Natural Science and Mathematics (ASIIN, Germany) for 5 years, which is a good practice.*

As a result of the analysis, 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, material and technical base. *The results of the survey of teaching staff showed that the management of changes in the activities of the university in the curricula is quite a majority (full agreement-73.4%, consent-23.4%, disagreement-0.0%), as well as compliance with modern labor market requirements (full agreement – 62.5%, consent – 37.5%).*

The members of the EEC believe that since the cluster EP is developed in cooperation with the partner organizations of the Scientific Research Institute "Institute of Human and Animal Physiology" (6B06114 "Biocomputing") and the Research Institute for the Development of Communication Routes (8D06105 "Data Science"), they should also be committed to quality assurance, and are included in a single quality management system. *It is advisable to monitor and supplement the information on the university's website with information about the quality management system in the partner organizations of the EP.*

The development plans of the EP (2020-2023) contain a list of measures to reduce risks. *Nevertheless, IITU management should pay attention to the development and implementation of*

a risk management system throughout the university for coordinated actions on all EP.

Also, in the documents of the EP and the Department of "Mathematical and Computer Modeling" there is no mention of the passage of the management of the EP of training in educational management programs. *It is necessary to organize such training.*

Strengths / Best Practice for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:
  – *availability of a published quality assurance policy;*
  – *a quality assurance policy has been developed that reflects the relationship between research, teaching and learning;*
  – *interaction and feedback with teaching staff and students is established, which is confirmed by the results of interviews and questionnaires;*
  – *the IITU has created and published a unified quality management system based on the system of business processes of the organization and the distribution of responsibility for individual processes in accordance with the ST RK ISO 9001-2016 with periodic audit.*

Recommendations for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:
  – *the management of the EP should monitor and supplement the information on the university's website with information about the quality management system in partner organizations involved in the implementation of the EP;*
  – *when developing plans for the modernization and implementation of the EP, the management of the EP needs to create a risk management system that takes into account changes in the quantitative composition and level of training of future students;*
  – *the management of the EP needs to plan and complete training in educational management programs.*

Additional recommendations for EP 8D06105 "Data Science":
  – *it is required to ensure the participation of students and expand the range of potential employers in the composition of the collegial body (department meetings) when discussing the management of the EP.*

The conclusions of the EEC on the criteria for 6B06114 "Biocomputing" and 8D06105 "Data Science":
According to the "Management of Educational Program" Standard, 15 criteria are revealed, of which according to 6B06114 "Biocomputing", 8D06105 "Data Science" EPs 4-have a strong position, 8 – satisfactory, 3-require improvement.

6.2. "Information Management and Reporting" Standard

> ✓ *The EO should demonstrate that it has a system for collecting, analyzing and managing information based on modern information and communication technologies and software, and that it uses a variety of methods for collecting and analyzing information in the context of the EP.*
>
> ✓ *The management of the EP should demonstrate that there is a mechanism for the systematic use of processed, adequate information to improve the internal quality assurance system.*
>
> ✓ *The EP management should demonstrate fact-based decision-making.*
>
> ✓ *A system of regular reporting that reflects all levels of the structure, including an assessment of the effectiveness and efficiency of departments and research activities, should be provided within the framework of the EP.*
>
> ✓ *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.*
>
> ✓ *The EO must demonstrate the definition of the procedure and ensuring the protection of information, including the identification of responsible persons for the accuracy and timeliness of information analysis and*

data provision.

✓ *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.*

✓ *The EP management should demonstrate that there is a mechanism for communication with students, employees, and other stakeholders, as well as mechanisms for conflict resolution.*

✓ *The EO should demonstrate that there are mechanisms for measuring the satisfaction of the needs of staff, staff, and trainees within the framework of the EP.*

✓ *The EO should provide for an assessment of the effectiveness and efficiency of activities, including in the context of the EP.*

✓ *Information intended for collection and analysis within the framework of the EP should take into account:*

  - key performance indicators;

  - dynamics of the contingent of students in the context of forms and types;

  - academic performance, student achievement, and deduction;

  - students' satisfaction with the implementation of the EP and the quality of education at the University;

  - availability of educational resources and support systems for students.

✓ *The EO must confirm the implementation of procedures for processing personal data of students, employees and teaching staff on the basis of their documentary consent.*

Evidence part

The University has implemented information management processes, including data collection and analysis. In the management of main processes of the University (educational, methodical, scientific, educational), the following regulatory documents: decisions of the collegial management bodies (academic Council, Board of Directors, administration), orders of the rector and Vice-rectors Directive on the activities, documents for students (orders on the staff, students, undergraduates), planning, analytical, reporting, financial and accounting documents, etc.

In all departments of the university, office work is carried out in accordance with the approved nomenclature of cases, the preservation and archiving of documents is ensured. Responsible for reporting to the Ministry of education and science and other agencies on the activities of the University, public service, work with a Unified management system for higher education (UMSHE) is enshrined in the regulatory documents of the rector.

The University has implemented the following information collection, analysis and management systems based on the use of modern information and communication technologies and software tools:

- Information management in the framework of the official portal of the university https://iitu.kz. The portal provides information and communication for students, teachers and other interested parties. The site provides information about the management of educational, methodological, scientific, educational processes, there are pages of individual departments: faculties, departments, personal pages of teaching staff. Separate sections of the official website https://iitu.kz is aimed at various categories of users: applicants, students, masters, graduates and teaching staff. The website has a modern and dynamic design, the information is published in four languages, has a blog of the rector, a news page with the video content, there are representative offices of the University in social networks "Vkontakte", "Facebook", "Instagram", "Twitter", etc. The site is managed centrally. The head of the Marketing and Communications Department is responsible for the content of the site.

- Information management within the framework of the AIS "Platonus" is carried out in terms of interaction and uploading reports on students in IITU.

- Internal environment of the university based on Moodle (https://dl.iitu.kz) is used to work with a contingent of students and is used by the admissions committee, dean's offices, educational management, student office. The AIS is also used to assign students' admission to exams and sessions, and to compare tests for testing.

- Experts note that the advantage of the IITU is additional opportunities for conducting

statistical analysis of information and monitoring the quality of the educational process, including test current control of academic performance and analysis of the results of intermediate and final state certification of students, the completeness of their provision with educational and methodological complexes obtained from the widespread use of the *Microsoft Teams* video conferencing system.

- The student's personal card includes an academic calendar, a reference guide, links to a catalog of elective disciplines, a list of practice bases by specialty. It also contains information about the student's current academic performance, exam results, etc.

- The ABIS system used by the university provides students with access to the resources of the electronic library, which stores electronic educational resources.

- The library management information system includes the library's website and access to library resources: the online library "KABIS Standard", presentations, connection to international databases *Web of Science, Thomson Reuters, Springer, Scories, Google Scholar*.

The University ensures the openness and accessibility of information to all interested parties, as well as the availability of an effective communication mechanism with students, employees and other interested parties.

The information collected in the framework of this monitoring, in particular, takes into account:

- key performance indicators;
- availability of educational resources and support systems for students;
- employment and career development of graduates.

The university is preparing to implement a rating assessment of the effectiveness of the teaching staff, which will be used to stimulate educational and scientific activities.

The security of information is ensured by the distribution of roles and functions in the AIS used; the presence of installed antivirus programs; system administration of servers; backup system on servers; restriction of access of individuals to the premises with servers; technical equipment of premises with servers to ensure the security of work.

The reporting system includes annual reports of structural divisions, reports on SRW and SRWS, and financial statements.

The information collection, analysis and management system of the IITU is used to ensure the quality of the implementation of the EP, which is confirmed by the relevant internal regulatory documents.

The information and feedback system is aimed at students and employees, and includes information stands at departments, the functioning of the official website of the university in two languages, and there is a "trust box" (https://iitu.kz/ru/articles/for-students/ящик-доверия).

The main feedback forms are:

- feedback forms posted on the university's website;
- rector's blog (https://iitu.kz/ru/articles/about-university/blog-rektora);
- survey of consumers of educational services and staff.

Representatives of the student youth have the opportunity to express a complaint or complaint directly at a meeting of the Senate and get an answer about the terms and methods of resolving the problem.

Students and teaching staff, employers are involved in the processes of collecting and analyzing information through questionnaires, interviewing, and making decisions based on them during meetings of departments, the Faculty's EMC, and the Academic Council of the IITU.

Analytical part

The Commission notes that the structure and volume of information collected, sources, frequency, time interval, responsible persons for reliability and timeliness are determined by the internal regulatory documentation of the university, job descriptions of department heads. At the same time, experts note the absence in the Website Regulations of the rules for updating

information and requirements for the submitted information in terms of its unification.

The EEC Commission notes the mass use of distance learning technologies (*Moodle*) and e-learning (*Coursera*, etc.) in the educational process of the university. The effectiveness of using e-learning at the university is confirmed by positive feedback from employers and graduates during interviews.

Members of the EEC as a result of the analysis of the content of training courses, meetings with faculty and students of the 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs means in addition to periodic surveys of students, employees, meetings with graduates and employers, the automated system of control of educational process "Platonus" and internal environment (https://dl.iitu.kz), in IITU for data collection and processing used information subsystem *Microsoft Teams*, allowing in addition to the organization of lectures to monitor attendance, activity and the perception of the material by students.

According to the results of the survey, 93.1% of students are satisfied with the usefulness of the university's website. 93.8% of the staff are satisfied with the level of feedback from the management. Students' satisfaction with the level of accessibility of the dean's office is 94.7%, accessibility and responsiveness of management – 95.6%, accessibility of academic counseling – 97.0%, accessibility of counseling on personal problems – 85.2%.

Strengths / Best Practice for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:
– the university adequately ensures the functioning of the system of information collection, analysis and management based on the use of modern information and communication technologies and software;
– the university has ensured the protection of information, identified the responsible persons for the accuracy and timeliness of the analysis of information and the provision of data.

Recommendations for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:
– the university management needs to finalize the Regulations on the site and regulate the procedure and timing of updating information on the site, taking into account the requirements for a single presentation of the same type of information.

The conclusions of the EEC on the criteria for 6B06114 "Biocomputing" and 8D06105 "Data Science":
According to the "Information Management and Reporting" Standard, 16 criteria are revealed, of which according to 6B06114 "Biocomputing", 8D06105 "Data Science" EPs 2- have a strong position, 14 – satisfactory.

6.3. *"Development and Approval of the Educational Program" Standard*

✓ *The EO should define and document the procedures for developing the EP and approving them at the institutional level.*
✓ *The management of the EP should ensure that the developed EP meets the set goals, including the expected learning outcomes.*
✓ *The EP management should ensure that there are developed models of the EP graduate describing learning outcomes and personal qualities.*
✓ *The management of the EP must demonstrate that external reviews of the content of the EP and the planned results of its implementation are carried out.*
✓ *The qualification awarded at the end of the EP must be clearly defined and correspond to a certain level of the NSC.*
✓ *The EP management should determine the impact of disciplines and professional practices on the formation of learning outcomes.*
✓ *An important factor is the possibility of training students for professional certification.*
✓ *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.

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

    ✓ *The EP management must ensure that the content of academic disciplines and planned results correspond to the level of training (bachelor's, master's, doctoral).*

    ✓ *The structure of the EP should include various types of activities that ensure that students achieve the planned learning outcomes.*

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

Evidence part

Educational activities of 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs are conducted on the basis of the State Mandatory Standard of Higher and Postgraduate Education (SCES), approved by the order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 604, Standard Rules of Activity of Educational Organizations implementing Educational programs of Higher and (or) Postgraduate Education, approved by order of the MES RK dated October 30, 2018 No. 595 to the educational environment and is carried out in accordance with the state license CQFES MES RK AB №0064060 on May 29, 2009. Graduates are awarded an academic degree of bachelor in the field of information and communication technologies in the educational program of 6B06114 "Biocomputing" and the academic degree of PhD at the EP 8D06105 "Data Science".

According to the regulation on the development and implementation of the Higher Education EP, the University independently develops and approves the training of bachelor's and master's students on the basis of the SCES in accordance with the National Qualifications Framework, Professional Standards and agreed with the Dublin Descriptors and the European Qualifications Framework.

6B06114 "Biocomputing" and 8D06105 "Data Science" are implemented at the Department "Mathematical and Computer Modeling", which is a structural division of the Faculty of Information Technology and includes the development of the structure and content of accredited EP, analysis of information on implementation, preparation of a report, approval of draft decisions on the results of the implementation of EP, generalization of comments and suggestions, presentation of results to management. The department also provides research and methodological, information services to organizations of biomedical profile, develops and implements innovative technologies in the educational process.

The review and approval of the EP is coordinated with the dean's office, considered by the Scientific and Methodological Council of the university, the Academic Council, and approved by the rector of the university.

The IITU regulatory, legal, and technical documents regulate all processes, shape the work, performance, and corporate culture, and allow for documented assessments of the effectiveness of the mission, strategy, goals, and objectives.

Educational methodical documentation includes educational methodical complex of specialty (EMCS), which consists of Modular educational programs (MEPs), the curriculum (WCs), catalogs of elective disciplines (CEDs), which describes the discipline component of choice with brief content, pre - and post-requisites, educational-methodical complexes of disciplines (syllabus) (EMCD), guidelines on the various types of educational activities (IWS, practices, etc.).

The documents of the EMCS are developed by the Faculty of the department in accordance with the regulations (Regulations on the development of the EMCD, EP, CED) and are discussed at the meetings of the departments (minutes of the meeting of the Department of MCM No. 10 of 11.03.2020).

In the design phase of the program a graduate of the Department is determined by the model of graduates. The model is a collection of knowledge, skills, and experience of their application in practice, integrated into the professional and universal competencies that graduates

should have at the time of graduation from the program. Employers, teaching staff and students are involved in the development of the graduate model. During the virtual visit to the department "Mathematical and Computer Modeling", the members of the EEC found that the final list of competencies of the graduate model was agreed with the head of the department, experts, and representatives of employers, which is the strength of the EP implemented by the department.

The production practices for accredited EP will be scheduled according to the document "Rules of the organization and conduct of professional practice and rules of the organization as bases of practices" (Approved by order of the MES from January 29, 2016 No. 107) and internally documented procedure QP-06 "Organization of professional practice", which describes all the processes and criteria for passing different types of practices.

The passage of educational, pedagogical, and professional practices of students of accredited EP corresponds to the training of highly qualified specialists and is carried out in specialized institutions assigned to the university in accordance with the established procedure. Students' practical training is a mandatory element of training. The educational program 6B06114 "Biocomputing" provides the following types of practice: educational (after the 2nd semester), production (after the 4th and 6th), pre-graduate – after the 8th semester of the 4th year, EP 8D06105 "Data Science" - pedagogical /research practice (after the 2nd and 4th semesters). For students to pass all types of practices, the department has contracts with organizations:

- 6B06114 «Biocomputing» - RSE "Institute of Human and Animal Physiology",
- 8D06105 «Data Science» - LLC "Institute for the development of railways".

Negotiations are currently underway with other interested organizations.

The involvement of employers in the development of the EP appeared to provision their ideas, discussing the structure of the programs in the future it will be implemented through participation in the organization of internships and reviewing the final work leadership thesis papers on companies involved in the work and the national certification commission.

In the educational programs at the meetings of the Department "Mathematical and Computer Modeling" in 2020 (minutes of the meetings of the Department No. 10 of 11.03.2020) with the participation of employers, the following disciplines were introduced for EP 6B06114 "Biocomputing":

- *Bionics;*
- *Functional diagnostics;*
- *Molecular Biology;*
- *Normal physiology;*
- *Bioengineering with the basics of biophysics;*
- *Neuroscience;*
- *Fundamentals of Bioinformatics.*

Experts note that the content of the CED disciplines and professional practices of EP 6B06114 "Biocomputing" and 8D06105 "Data Science" have a significant impact on the formation of professional competencies of the graduate.

The members of the EEC confirm that within the framework of EP 6B06114 "Biocomputing" and 8D06105 "Data Science" there are professional certification programs for teachers and students "Coursera", which is the strength of these EP.

In order to implement the development plan of the EP for 2023-2025 of the accredited programs, it is planned to create branches of the department on the basis of the RSE "Institute of Human and Animal Physiology" and LLP "Institute of Railway Development".

In order to cooperate in the field of higher education, science, in order to improve the efficiency of EMW and SRW, the university has concluded agreements on cooperation in the field of education and science with the following educational institutions:

KAIST University, The Republic of Korea;
Geneva Information Technology Institute;

INHA University, The Republic of Korea;
Universiti Teknologi MARA, Malaysia;
Universiti Tenaga Nasional, Malaysia;
Adam Mickiewicz University in Poznan, Poland;
University of Bedfordshire, The United Kingdom;
IGlobal University, USA;
Green River College, Washington, USA;
Gachon University, The Republic of Korea;
University of Lorraine, France;
University of Western Australia.

Various master classes, training seminars, guest lectures, and student meetings are held at the university on a regular basis.

The survey of students conducted during the visit to the EEC showed that:

- 62.6% of students are fully satisfied with the information about the requirements for successfully completing this specialty, 25.2% are partially satisfied, and 7.8% are partially dissatisfied.

- 65.2% of students are fully satisfied with the information about courses, educational programs, and obtaining academic degrees, 23.5% are partially satisfied, and 5.2% are partially dissatisfied.

Analytical part

Analyzing the standard "Development and Approval of the Educational Program", the commission concluded that the accredited areas take into account the ultimate goals of higher education in the field of information and communication technologies, which are aimed at mastering professional competencies, in accordance with the requirements of the standard, as well as the acquisition of knowledge, skills and abilities necessary for the implementation of future professional activities.

The results of mastering the EP are determined by the competencies acquired by the graduate, i.e., his ability to apply knowledge, skills and personal qualities in accordance with the tasks of professional activity.

Experts note that educational programs are fully provided with WS, syllabuses, and EMCD developed in accordance with regulatory documents, the content of which corresponds to the specifics of educational programs. The types of independent work of students, their labor intensity in hours, the form and terms of control are regulated in the relevant sections of the syllabus (working curriculum) for each discipline. The content of the working curricula reflects the specifics of the EP.

The survey of students conducted during the visit to the EEC showed that:

– 62.6 % of students are fully satisfied with the level of accessibility and responsiveness of the university management, 33% are partially satisfied, and 3.5% are partially dissatisfied;

– 61.7% of students are fully satisfied with the level of accessibility of the dean's office, 33% are partially satisfied, and 2.6% are partially dissatisfied;

– 57.4% of students are fully satisfied with the availability of academic counseling, 29.6% are partially satisfied, 6.1% are partially dissatisfied, and 0.9% are dissatisfied.

Strengths / Best Practice for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

– the EP has a practice-oriented graduate model, the formation of which involves interested persons from among employers.

Recommendations for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

– expand the scope of joint research and academic projects with foreign research centers and universities;

– *to emphasize the blocks of disciplines that contribute to the successful completion of professional certification on the basis of international partner companies in the field of ICT (Cisco, Microsoft, Oracle, C1, etc.).*

The conclusions of the EEC on the criteria for 6B06114 "Biocomputing" and 8D06105 "Data Science":

According to the "Development and Approval of the Educational Program" Standard, 12 criteria are revealed, of which according to 6B06114 "Biocomputing", 8D06105 "Data Science" EPs 12 – have a satisfactory position.

6.4. "Constant monitoring and periodic assessment of educational programs" Standard

> ✓ *The EO should define mechanisms for monitoring and periodically evaluating the EP in order 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:*
> *- content of programs in the light of the latest scientific achievements in a particular discipline to ensure the relevance of the discipline taught;*
> *- changes in the needs of society and the professional environment;*
> *- students' workload and academic performance;*
> *- effectiveness of student assessment procedures;*
> *- expectations, needs, and satisfaction of students with training in EP;*
> *- educational environment and support services, and their compliance with the goals of the EP.*
> ✓ *The EO and the management of the EP should define a mechanism for informing all interested parties of any planned or undertaken actions in relation to the EP.*
> ✓ *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, taking into account changes in the labor market, the requirements of employers and the social demand of society.*

Evidence part

On the basis of the university, the EP is monitored and periodically evaluated in order to achieve its goal and meet the needs of students, employers and society.

The activities of the EP of accredited specialties correspond to the strategy, mission and vision of the IITU. The content and form of the EP, the decisions taken by the management of the University for the development and improvement of the quality of the EP, agreed with the strategic documents of the MES RK and IITU.

The survey of students, conducted at the University on a regular basis, is aimed at finding out the quality of educational services and receiving suggestions from students for improvement in this area. The survey is conducted online before the start of the session and separately before each test exam. Results of a survey conducted twice a year on the resource dl.iitu.kz, are transmitted to the departments and to the dean's office for decision-making.

Using the dl.iitu.kz and *Microsoft Teams* monitor the progress and academic achievements of students (grades on the boundary, final control, practices, state exams) and are managed through the functions of the Registrar's Office.

The system for monitoring the implementation of plans for the development of accredited EP includes the following mechanisms:
• annual reports of the graduating department and faculty;
• annual reports of teachers of the department;
• results of internal audits;
• consideration of issues related to the development of various areas of training of specialists at meetings of collegial bodies.

The data sources for the EP are:
• results of monitoring and implementation of IITU processes;

• assessment of staff satisfaction;

• results of surveys of students, employers, applicants and parents;

• the results of the certification (due diligence) of the university.

The external environment of the EP are:

• interaction with universities and organizations on the organization of educational and professional practices, employment of students, conducting research and contractual work;

• interaction of the department with educational institutions and organizations of the city and region;

• teaching staff of the department communicates with parents and students;

• conducting various events that position the EP.

It should be noted that an annual analysis of the EP is conducted with the participation of heads of departments, developers of the EP, representatives of employers, students and specialists of the Department of Educational and Methodological Work under the supervision of the Department of Academic Affairs of the University. According to the steps of the analysis and evaluation of the main indicators of educational results, corrective actions are taken to improve the quality of the educational program. At the same time, through sociological research and questionnaires, feedback is provided to employers. Students, employees, teachers, employers, and other stakeholders are informed about the development, formation, approval, and implementation of the EP.

Analytical part

However, the following issues related to this standard were not fully confirmed during the EEC visit:

• in the development plans of the Department of Mathematical and Computer Modeling, the mechanism of implementation of the chain "*analysis of identified inconsistencies - implementation of correlating effects*" is not clearly spelled out.

In addition, the materials of the department do not contain an analysis of the effectiveness of changes made to the EP on the proposals of employers and students:

• employers and students are not always informed about the work of the collegial management bodies of the educational program;

• the procedure for guaranteeing the achievement of the goals of professional practice and the issues of determining the needs for changing competencies, the content of curricula and EP remained undisclosed.

Strengths / Best Practice for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

– *regular monitoring and periodic evaluation of the EP take into account the workload and academic performance of students.*

Recommendations for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

– *develop a procedure for promptly updating information on the university's website when making changes to the content of the program, taking into account the requirements of the labor market and professional associations of employers.*

The conclusions of the EEC on the criteria for 6B06114 "Biocomputing" and 8D06105 "Data Science":

According to the "Constant monitoring and periodic assessment of educational programs" Standard, 9 criteria are revealed, of which according to 6B06114 "Biocomputing", 8D06105 "Data Science" EPs 8-have a satisfactory position, 1-require improvement.

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

✓ *The EP management should ensure respect and attention to different groups of students and their needs and provide them with flexible learning paths.*

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

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

✓ *The EP management should demonstrate that there are feedback mechanisms for using different teaching methods and evaluating learning outcomes.*

✓ *The EP management should demonstrate that there are mechanisms to support students ' autonomy, while providing guidance and assistance from the teacher.*

✓ *The EP management must demonstrate that there is a procedure for responding to student complaints.*

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

✓ *The EO must ensure that the procedures for evaluating the learning outcomes of EP students are consistent with the planned results and goals of the program. The evaluation criteria and methods for the EP should be published in advance.*

✓ *The EO should define mechanisms to ensure that each EP graduate achieves learning outcomes and ensure that they are fully formed.*

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

Evidence part

EP 6B06114 "Biocomputing" and 8D06105 "Data Science" provide opportunities for their periodic updating, building individual educational trajectories, and choosing elective academic disciplines. Teaching staff of the Department "Mathematical and Computer Modeling" (MCM) actively participates in the introduction of innovations in teaching methods and methods, including the results obtained during the implementation of scientific projects and focused on the needs of employers and consumers. The Department of MCM develops new methods of teaching academic disciplines.

Much attention is paid to the development of research skills of students both within the framework of the development of EP, and in extracurricular time. For example, research projects in the field of deep learning, bionics and big data, using the software available at the Faculty of Information Technology, as well as in the field of creating intelligent systems for supporting railway transport, have great prospects.

The teaching staff of the Department of Mathematical and Computer Modeling is proficient in modern teaching methods and regularly improves their skills in this field, including international centers and universities. Teachers get a positive experience by participating in certification and expert activities, at the request of educational organizations and independent accreditation agencies of universities.

Annually assesses the degree of satisfaction of students with the quality and content of the EP (the quality of teaching jobs and teaching software), at the end of each semester after the completion of theoretical training course takes an anonymous survey, allowing for in addition to the choice comments.

When choosing elective courses, the base of practice, the topic of dissertations, the head of work, research directions, the individual characteristics, inclinations, needs and cultural experience of students are taken into account.

In order to avoid subjectivity, standardized tests in general education subjects are used to assess students' learning outcomes, while exams in special subjects are taken by the department's teachers. Students have the opportunity to track their progress and the results of intermediate and final control on the University portal in the system "dl.iitu.kz".

The modular learning technology used at the University includes:

‒ general mandatory modules (for cycles of general education disciplines); mandatory modules;

‒ mandatory modules in the specialty (for cycles of basic and specialized disciplines);

‒ elective modules (for cycles of individual profile disciplines);

‒ various types of practice (MEP EP admission 2020-2021).

To resolve conflict situations when students complain to the University management and EP, several information channels are provided, one of which is the rector's personal blog on the University's website, an electronic "trust box", etc. To consider complaints and appeals, commissions are formed that make decisions on them at the time set by internal procedures.

An operational way to assess the effectiveness of the introduction of innovations in the educational process and the satisfaction of students with the quality of educational services provided is a survey of students conducted by the Department of Academic Affairs of the University (https://www.iitu.kz/documents/356/QM-01.pdf). In addition, every year, in order to adjust the educational processes, make changes in the management of the organization, EP and training technologies, an online survey of students, teaching staff and university employees is conducted.

Despite the fact that the issue of the accredited EP 6B06114 "Biocomputing" and 8D06105 "Data Science" has not yet been released, the Department of "Mathematical and Computer Modeling" keeps in touch with its graduates in order to determine the strengths and weaknesses and adjust the content of the EP in accordance with their recommendations.

Students and doctoral students also participate in improving the content of the EP, at the end of each course on an anonymous basis, participating in a questionnaire to determine the level of satisfaction with the training program.

The survey of students conducted during the virtual visit of the EEC showed that students express full and partial satisfaction:

‒ *the quality of teaching in general (96,4%);*

‒ *the objectivity of the assessment of knowledge, skills and other educational achievements (89,6%);*

‒ *objectivity and fairness of teachers (96,9%).*

Analytical part

Analyzing the standard "Student-centered Learning, Teaching, and Performance Evaluation" for the accredited EP 6B06114 "Biocomputing" and 8D06105 "Data Science", the commission concluded that the implemented EP uses modern information and pedagogical technologies.

In the course of the assessment of accredited educational institutions, it was revealed that the needs of students with disabilities are not sufficiently taken into account when forming training trajectories. As part of the analysis of the standard, the EEC had the following comments:

- teaching staff, with rare exceptions, does not conduct scientific research in the field of teaching methods and evaluation of learning outcomes, and methodological conferences are not held;

- there is no information about the use of the AIS "Platonus" for the analysis and maintenance of individual results of each student;

- during the visit to the Department of "Mathematical and Computer Modeling", the presence of a system for sharing experience in the application and evaluating the effectiveness of the use of various teaching methods for the teaching staff of the EP was not demonstrated.

Strengths / Best Practice for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

‒ *the desire to ensure respect and attention to different groups of students and their needs as EP, the increased use of various forms and methods of teaching and learning, as well as the*

availability of their own new methods of teaching academic disciplines;
– organization of a feedback system for evaluating the use of various teaching methods and evaluating learning outcomes;
– the consistency, transparency and objectivity of the mechanism for evaluating learning outcomes for each EP, the presence of a procedure for responding to students' complaints.

Recommendations for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:
– improve the EP, taking into account the needs of students with disabilities;
– to conduct a comparative analysis of teaching methods used at the University and in other universities, in order to expand the range of teaching tools;
– schedule of seminars for staff EP to exchange experiences and evaluate the effectiveness of various teaching methods to engage in methodological seminars same EP colleagues from the universities of Kazakhstan and foreign Universities;
– develop a plan to improve the teaching skills of teaching staff by organizing advanced training courses at the expense of the university.

The conclusions of the EEC on the criteria for 6B06114 "Biocomputing" and 8D06105 "Data Science":
According to the "Student-centered Learning, Teaching, and Performance Evaluation" Standard, 10 criteria are revealed, of which according to 6B06114 "Biocomputing", 8D06105 "Data Science" EPs 1-has a strong position, 7 – satisfactory, 2-require improvement.

6.6. Standard "Students"

✓ *The EO should demonstrate the existence of a policy for forming a contingent of students in the context of the EP from admission to graduation and ensure transparency of its procedures. Procedures governing the life cycle of students (from admission to completion) must be defined, approved, and published.*
✓ *The EP management should determine the order of formation of the contingent of students based on:*
- minimum requirements for applicants;
- maximum group size for seminars, practical, laboratory and Studio classes;
- forecasting the number of state grants;
- analysis of available material and technical resources, information resources, and human resources;
- analysis of potential social conditions for students, including provision of places in dormitories.
✓ *The EP management must demonstrate its readiness to conduct special adaptation and support programs for newly enrolled and foreign students.*
✓ *The EO must demonstrate that its actions comply with the Lisbon recognition Convention.*
✓ *The EO should collaborate with other educational organizations and national centers of the "European network of national academic recognition and mobility information centers/ National academic Recognition Information Centers" ENIC/NARIC to ensure comparable recognition of qualifications.*
✓ *The EP management should demonstrate that there is a mechanism for recognizing the results of academic mobility of students, as well as the results of additional, formal, and non-formal training.*
✓ *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.*
✓ *The EP management must demonstrate its readiness to provide students with places of practice, promote employment of graduates, and maintain communication with them.*
✓ *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.*
✓ *An important factor is the availability of mechanisms for monitoring the employment and professional activities of graduates of the EP.*

Evidence part
The formation of the contingent of students for educational programs at the IITU is carried out in accordance with the existing Resolutions of the Government of the Republic of

Kazakhstan, model rules and regulations, as well as internal regulatory documents R-04, R-06 and R-21 (http://iitu.kz).

Students and visitors of the official website of the university http://iitu.kz they can get acquainted with the rules of admission, the order of transfer from course to course, from other universities, the regulations on the procedure for transferring credits mastered in other universities, deductions, etc. On the official website of the IITU there is a page "Admissions", where you can get information about the rules of admission to the university, the list of specialties of the University, the benefits for training, the procedure for accepting documents and ask all questions to the representatives of the admission committee (https://www.iitu.kz/ru/articles/ent-2020/).

Teachers of the Department "Mathematical and computer modeling" attend school in Almaty, regions of RK vocational work being done by staff of the PR-Department, under the direction of the career and employment Center generates annual plan of vocational guidance and schedule meetings with students, open Days (https://www.iitu.kz/ru/news/day).

To attract talented students to IITU, the Republican Olympiad for High School Students in Mathematics and sports Programming is held annually (https://olymp.iitu.kz).

The policy of formation of the contingent of students in EP 6B06114 "Biocomputing" is to accept the faces are more prepared to study in the University, consciously chosen the specialty obtained the required number of points according to the results of UNT (graduates of General secondary schools), CTA (graduates of technical vocational education and high school graduates of previous years, for a fee), as well as additional examinations in the specialty and English for all persons with General secondary education, technical and vocational, post-secondary and higher education. For new EP in 2020 for the first time on the 1st course were accepted:
• EP 6B06114 "Biocomputing" - 13 students;
• EP 8D06105 "Data Science" - 4 doctoral students.

Admission to the PhD-doctoral program EP 8D06105 "Data Science" is carried out on the basis of the Rules for admission to postgraduate education programs on a competitive basis based on the results of entrance exams (document R-05). The members of the EEC confirm that the policy of forming a contingent of students is transparent, and the procedures governing the life cycle of training are approved and published on the university's website.

After admission to the IITU, the students are assisted by advisors, responsible persons of the EP, the head of the department, the registrar office, the student dean's office, who will advise on the transfer from one course to another, from other universities, deductions and credit transfer.

The organization of the educational process in the form of a credit system of training allows you to individually plan the sequence of passing the educational trajectory within certain limits. In the issue of recognition of higher education documents obtained in international or foreign educational institutions (and their branches), the University is guided by the Law of the Republic of Kazakhstan of December 13, 1997 "On Ratification of the Convention on the Recognition of Qualifications Related to Higher Education in the European Region" (Lisbon Convention). Graduates are issued a European *Diploma Supplement*.

The Department of "Mathematical and Computer Modeling" has a catalog of educational modules, which describes the content of courses, methods used in the framework of the EP, describes the relationship between students and teachers. Students are given the opportunity to participate in academic exchange programs based on existing agreements with foreign partner universities.

The development and support of academic mobility programs for bachelors, masters and doctoral students is one of the priority areas of the department's international activities, allowing us to solve the problem of increasing the competitiveness of graduates and improving the quality of education. Information about academic mobility programs is provided on the university's website, through the media and through the social networks *VK, Instagram, Facebook*.

The Department of Mathematical and Computer Modeling has developed a practice of

coordinating the content of the EP with employers in the region, involving employers in the management of practices, reviewing theses and methodological developments of teachers, including employers in the certification commissions, evaluating employers ' satisfaction with the quality of training specialists.

Analytical part

In the course of interviewing students, the members of the EEC determined that the university has created conditions for supporting gifted students by providing discounts, grants for training, stimulating creative activity, etc.

IITU has a Career Center that helps students find internships/internships and employment opportunities, encourages the activities of the alumni association, and tracks the main trends in graduate employment.

According to the results of the survey, 87.0% of students express full and partial satisfaction with the availability of academic counseling; availability of health services – 86.1%; availability of library resources – 94.8%; existing educational resources – 93.0%; the overall quality of educational programs – 92.1%; the relationship between student and teacher – 92.2%; in terms of providing students with dormitories, full and partial satisfaction is expressed – 37.4%, and dissatisfaction – 28.7%.

Strengths / Best Practice for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

– IITU has a well-established system of managing the contingent of students from admission to graduation;

– the presence of a service for monitoring the employment and professional activity of graduates of the EP;

– a mechanism for supporting gifted students has been introduced;

– providing graduates with documents confirming the received qualification, including the achieved learning outcomes, as well as the context, content and status of the received education and the certificates of its completion (European Diploma Supplement).

Recommendations for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

– take measures to ensure proper representation of students in the Academic Council and other collegial governing bodies of the University;

– to increase the role of the Alumni Association in the activities of the IITU;

– in order to meet the needs of students in housing, take measures to build / purchase a hostel and achieve the required number of places in them.

The conclusions of the EEC on the criteria for 6B06114 "Biocomputing" and 8D06105 "Data Science":

According to the Standard "Students", 14 criteria are revealed, of which according to 6B06114 "Biocomputing", 8D06105 "Data Science" EPs 14-have a satisfactory position.

6.7. Standard "Faculty staff"

> ✓ *The EO should have an objective and transparent personnel policy, including in the context of the EP, including recruitment, professional growth and development of personnel, ensuring the professional competence of the entire staff.*
>
> ✓ *The EO must demonstrate that the human resources potential of the teaching staff corresponds to the development strategy of the EO and the specifics of the EP.*
>
> ✓ *The management of the EP must demonstrate an awareness of responsibility for its employees and*

> *provide them with a favorable working environment.*
> ✓ *The EP management should demonstrate a change in the role of the teacher in connection with the transition to student-centered learning.*
> ✓ *The EO should determine the contribution of the teaching staff of the EP to the implementation of the development strategy of the EO, and other strategic documents.*
> ✓ *The EO should provide opportunities for career growth and professional development of the staff of the EP.*
> ✓ *The EP management should demonstrate a willingness to involve practitioners from the relevant industries in teaching.*
> ✓ *The EO should demonstrate motivation for the professional and personal development of teachers of the EP, including encouragement for the integration of scientific activities and education, and the use of innovative teaching methods.*
> ✓ *An important factor is the readiness to develop academic mobility within the framework of the EP, to attract the best foreign and domestic teachers.*

Evidence part

IITU has an objective and transparent personnel policy, including recruitment, professional growth and development of staff, ensuring the professional competence of all academic staff. The management of the university pays great attention to the selection and training of personnel.

Teaching Staffing of accredited EP completed in accordance with the laws of Kazakhstan and the Rules of the competitive recruitment of academic staff and scientific workers IITU (the Rules of the competitive recruitment of faculty R-07 Revision 4, dated December 14, 2018). When forming EP 6B06114 "Biocomputing", read in English, an additional condition was the presence of an IELTS certificate of at least 6.0. An annual analysis of the personnel structure is carried out, for example, in the 2020-2021 academic year, the educational process is provided for the implementation of EP 6B06114 "Biocomputing" by 28 teachers, including 19 doctors, candidates of science and PhD. The percentage of teaching staff with academic degrees and titles is 67.9%. For the implementation of EP 8D06105 "Data Science", the educational process is provided by 6 teachers, including doctors, candidates of science and PhD - 100%.

The formation and implementation of personnel policies IITU based on the following principles: a democratic approach to the management of faculty and staff, the combination of interests, access management, promotion of academic staff, creating conditions and atmosphere of initiative and creativity, personal improvement staff.

This approach meets the current trends in the field of working with human resources and is based on the formation and strengthening of "human capital" in the context of the transition to a knowledge society, and the management of the IITU implements a personnel policy in accordance with the main priorities of the university's strategy.

At the same time, the strategic goals of the IITU personnel policy are as follows:
- formation of a workable, highly qualified team of like-minded people, able to solve the tasks facing the university and quickly respond to the constantly changing requirements of the labor markets and educational services;
- creation of an effective system of personnel potential management, based on modern technologies of personnel management, aimed at its development (selection and evaluation, professional development, retraining);
- formation of favorable conditions for self-realization and career growth of employees;
- increasing the attractiveness of working conditions at the university to attract and secure highly qualified specialists at the university.

During the meetings of the EEC experts with the teaching staff, it was established that the Department of Mathematical and Computer Modeling is planning to involve teachers-specialists of the RSE "Institute of Human and Animal Physiology", which is the strong point of EP 6B06114 "Biocomputing".

Table 2. Qualitative and quantitative composition of the teaching staff of the Department "Mathematical and Computer Modeling"

Educational program	Professor	Associate Professor	Assistant Professor	Senior Lecturer	Lecturer	Tutor	Total	Settling down
EP 6B06114 "Biocomputing"	3	2	14	6	2	1	**28**	**67,9%**
EP 8D06105 "Data Science"	2	1	3	-	-	-	**6**	**100%**

At the department, control over the activities and development of the teaching staff of the EP is carried out within the framework of individual plans of teachers and reporting on the plan 2 times a year. Also, every year, the teaching staff of the entire university passes a competitive contract commission (CCC) to monitor the compliance of the selected candidates for the replacement of the University's teaching staff with the criteria established in the "Register of Qualification Requirements of JSC IITU".

Professional development of teaching staff can take place in the form of participation in scientific and methodological seminars, conferences, exhibitions and other events; research work and publication of articles, training in doctoral studies, mastering new technologies, methods, methods of work, studying the experience of other employees; internships in research centers, enterprises and universities. In 2020-2021, the share of funds in the budget of the Department of Mathematical and Computer Modeling allocated for advanced training of teaching staff was 13%.

The Department of "Mathematical and Computer Modeling" widely practices the invitation of foreign specialists to read individual courses, including within the framework of the Erasmus+ program:

- *"Modeling of experimental problems" (Associate Professor Julien Berger, Université Savoie Mont Blanc, France, October 2018),*
- *"Numerical simulation with COMSOL Multiphysics" (30 hours) (Associate Professor Dolores Gomez, University of Santiago de Compostela, Spain, May 2018),*
- *"Modeling of Underground Flows with Comsol Multiphysics", Associate Professor Irina Panfilova, University of Lorraine, France, May 2017),*
- *"Finite difference methods for partial differential equatiions" (30 hours) (Professor Oscar Lopez, University of Santiago de Compostela, Spain, May 2017).*

The faculty of the department participates in 3 international scientific projects, most of the employees have scientific publications of international level (Scopus, Web of Science).

The administration of the university takes measures to stimulate the research of teachers, 6500 thousand tenge is allocated annually in the budget of the department for the publication of articles in scientific journals.

Analytical part

The teaching staff of the EP fully complies with the requirements of the legislation. The staff are highly qualified, ambitious and motivated. A high percentage of young teachers (average age 38) should be noted. They are ready to participate in academic mobility programs and international research projects.

EEC experts note a good level of interaction between teaching staff and students, all students are provided with individual consulting support.

During a virtual visit with members of the EEC library, and the core of the Department, the study of accounting documents, it was found that over the past three years the leadership of the EP and staff, much attention is paid to the methods of distance and online learning, however, the development and production of educational materials should also be encouraged.

According to the survey results: 98.4% of staff express the full and partial satisfaction of the opportunities provided by the University for professional development and career growth, and academic freedom – 98,5%; support and promote innovation and research endeavors of faculty – 90,6%; level of workload for academic staff and the level of remuneration was 95.3%. 89.6% of students are fully or partially satisfied with the demands of teaching staff; 93.9% of students are satisfied with the objectivity and fairness of teachers.

Strengths / Best Practice for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

− providing a comfortable psychological microclimate and favorable working conditions for teaching staff, the university management provides all possible support to teaching staff, encourages personal development, including encouraging the integration of scientific activities and education.

− the presence of a relatively large number of young, highly qualified, ambitious and motivated teachers who have experience in participating in international research projects, conferences, publications, and are ready to participate in academic mobility programs and international research projects in the profile of the EP under consideration.

− practical teachers from research institutes are actively involved in the implementation of the EP.

Recommendations for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

− to take measures for the wide participation of teaching staff in international and national scientific projects in the field of computer biology and medicine (EP 6B06114 "Biocomputing") and in the field of transport problems (EP 8D06105 "Data Science").

The conclusions of the EEC on the criteria for 6B06114 "Biocomputing" and 8D06105 "Data Science":

According to the Standard "Faculty staff", 9 criteria are revealed, of which according to 6B06114 "Biocomputing", 8D06105 "Data Science" EPs 1-has a strong position, 8 – satisfactory.

6.8. Standard "Education Resourses and Student Support Systems"

> ✓ The EO must ensure that there are sufficient training resources and student support services that meet the goals of the EP.
>
> ✓ The EO must demonstrate that the material and technical resources and infrastructure are sufficient to meet the needs of different groups of students in the context of EP (adults, employees, foreign students, and students with disabilities).
>
> ✓ The EP management should demonstrate that there are procedures in place to support various groups of students, including information and counseling. The management of the EP must demonstrate that information resources correspond to the specifics of the EP, 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 collection of educational, methodological and scientific literature on general education, basic and specialized disciplines on paper and electronic media, periodicals, access to scientific databases;
>
> - examination of research results, graduation papers, dissertations for plagiarism;
>
> - access to educational Internet resources;

> - *functioning of WI-FI on the territory of the educational organization.*
> ✓ *The EO should strive to ensure that the training equipment and software intended for use in the development of educational programs are similar to those used in the relevant industries.*

Evidence part

The material, technical and social base, which is under the operational management of the IITU, is located in the city of Almaty, 34/1 Manas Street. The University has its own building (9059.9 sq. m.), 13 educational laboratories and 3 research laboratories.

Laboratory classes are held on the basis of educational and scientific laboratories of the university, as well as on the educational, scientific and production sites operating at the university. Laboratory and practical classes are also held on the basis of branches of the departments, on the basis of a mutual cooperation agreement with third-party organizations. Such an organization of the educational process allows you to more fully use the material, technical and human resources of both the university and enterprises and organizations in the region to form students' professional skills in conditions close to real ones.

The university's infrastructure includes a library, a medical center, and other educational and support units. The main component of creating conditions for the organization and conduct of scientific research in the IITU are laboratories equipped with modern material and technical facilities.

The infrastructure of the Faculty of Information Technology includes 3 academic buildings with 102 classrooms for 2,578 seats, two reading rooms for 400 seats, 40 computer classes (80 computers), 47 educational laboratories, a multimedia and studio office, and a sports hall.

On the basis of the Department "Mathematical and Computer Modeling" (MCM) there are 2 laboratories: "Data Science and machine learning" and "Engineering Mathematics" within the framework of the ECCUM project.

To improve the efficiency of the educational process, the quality of training of specialists at the department, a collection of electronic educational resources is formed, acquired and partially developed by the university staff for educational and scientific purposes. In addition to the informative content of the site http://iitu.kz there is the possibility of interactive communication through a virtual office, providing access to educational services, and automated information systems, such as electronic encyclopedia, directory, electronic educational resources, a directory of training programs, the site of the library IITU, to the AIS "Platonus", to e-mail, internal portal dl.iitu.kz. Feedback from students is carried out through the website and information booths in each case.

Modern software is used for educational and research purposes. An academic license from Corporate Business Systems LLP, cooperation agreements with Apple, Cisco, Oracle, Microsoft, 1C and others allow you to work with all the software products of these companies.

The educational process uses licensed computer software (iSpring, Mind Manager, Visual Studio, Mathcad, Photoshop, CorelDRAW, MATLAB, COMSOL Multiphysics, APPLE computer class, IT-innovation center), as well as MS Project, SAP, MS Excel, STATA, Notepad++, Movie maker, HTML, CSS, JavaScript, 1C: Enterprise 8.2, Eclipse, Google Analytics, Yandex Metrics and others).

The department constantly updates, improves, and expands the information base.

Students enrolled in the 1st year of study, the adviser provides a reference guide, an academic calendar. The library is located in the main academic building. The library has a reading room where students can work with electronic textbooks, an electronic catalog, an electronic library of the RIEL, audio or video materials. The electronic reading room is equipped with modern office equipment: computers, printers, and a scanner.

The library provides permanent access to the information resources of "Thomson Reuters", "Springer", "Elsevier", to the databases of the Association of Universities of the Republic of Kazakhstan, the Republican Interuniversity Electronic Library (RIEL). The total library collection is 307,378 copies, including the book collection-154,378 copies, electronic

publications with a circulation of 150,000 copies and periodicals-2,594 copies, the KABIS information system is installed. The planning and organization of the educational process at the University is automated (the programs of the AIS "Platonus" and the distance learning portal DL (dl.iitu.kz), Moodle, and others). To check written works for plagiarism, a system is used Strikeplagiarism.com.

The University is sufficiently equipped with modern equipment for the organization of the educational process in classrooms, lecture halls, and in all departments of the university.

The educational and laboratory base and the classroom fund correspond to the contingent of students, the implemented educational programs and sanitary and epidemiological standards and requirements.

As a result of a virtual visit to the training laboratories, the EEC experts made sure that all the rooms meet the safety requirements, and the classrooms are equipped with fire extinguishers. An annual safety briefing is conducted with students, and the needs of various groups of students are comprehensively taken into account due to the individual schedule of mastering disciplines using distance educational technologies.

The IT Innovation center for the promotion of innovative projects and start-ups, 2 media studios, and the student magazine "Mag'n'IT" is published at IITU. This is the strength of the EP data.

Analytical part

As a result of the virtual inspection of the objects of the material base by the members of the EEC, it was noted that the university has all the necessary educational and material assets to ensure the educational process of the accredited educational programs. The university building meets the current sanitary standards and fire safety requirements. The classroom and laboratory facilities, classrooms and other premises comply with the established norms and rules. IITU does not have its own hostel, but helps nonresident students with housing by entering into agreements with several hostels. There are plans to purchase your own hostel.

The University's library resources generally meet the requirements of the EP and contain the necessary materials for teaching: educational, scientific, technical, reference and general literature, a wide range of periodicals, as well as remote access to educational Internet resources and major international scientific databases.

There is an opportunity to conduct an examination of the results of research, graduation papers, dissertations for illegal borrowing. Members of the EEC note that the university has a provision on checking for plagiarism of students' written works and an organized verification process using the resource Strikeplagiarism.com.

Safety requirements are met in the course of training, safety regulations are observed, and passports of specialized classrooms and laboratories are available.

According to the results of the survey, students are fully and partially satisfied with the existing educational resources of the university: 93.0%; classrooms, classrooms for large groups – 84.4%; recreation rooms for students – 56.5%; computer classes – 96.9%; Internet resources – 88.6%; scientific laboratories – 78.2%; providing students with dormitories – 37.4%.

Strengths / Best Practice for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

– the presence of a constantly developing material and technical base of the University, which provides the opportunity to conduct the educational process and research work at the level of modern requirements for accredited educational institutions, taking into account their specifics;

– the presence in the educational organization of a large number of licensed software (product) to support all types of processes;

– a technical opportunity to participate in academic mobility programs and international research projects is provided, there is an IT innovation center for promoting innovative projects

and startups with the participation of students.

Recommendations for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:
- create favorable conditions for recreation and leisure of students on the territory of the university.

The conclusions of the EEC on the criteria for 6B06114 "Biocomputing" and 8D06105 "Data Science":
According to the Standard "Education Resourses and Student Support Systems", 8 criteria are revealed, of which according to 6B06114 "Biocomputing", 8D06105 "Data Science" EPs 2-have a strong position, 6 – satisfactory.

6.9. Standard "Informing the public"

✓ *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 educational program being implemented;
- qualifications and (or) qualifications that will be assigned 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 EP should provide for a variety of ways to disseminate information, including the media, information networks to inform the general public and interested persons.*
✓ *Public awareness should support and explain the country's national development programs and the system of higher and postgraduate education.*
✓ *The public organization should demonstrate the reflection of information on the web resource 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 of the EP.*
✓ *An important factor is to inform the public about cooperation and interaction with partners in the framework of the EP.*

Evidence part
The University regularly informs the public and stakeholders about all aspects of its activities, conditions and features of the implementation of educational programs within the framework of existing accreditations and licenses.

The University uses all available channels and technologies, including mass media, specialized events and conference materials, and the university's IP television network. The possibilities of the Internet and social networks are actively used. Through the information policy, the university demonstrates the constant development of educational programs, adaptation to the trends of education in the world. In their informational work, the sources of information about the activities of the university and the implementation of educational programs for interested parties are the headings "Applicant", "Students", "Career" and "Education" on the website of the MUIT http://iitu.kz.

Identified media for publication are the online resources of TC "Atameken Business", profit.kz, tengrinews.kz, forbes.kz, @almatygggram and the Youtube channel. The University has official pages in popular social networks
– *Facebook: https://www.facebook.com/universityAlmaty/;*
– *Instagram: https://www.instagram.com/iitu_kz/;*
– *Twitter: https://t.me/iitunews/;*
– *VKontakte: https://vk.com/iitukz;*

− *Youtube: https://www.youtube.com/user/IITUAlmaty.*

The satisfaction of interested parties in the quality of the information received and in its completeness is monitored through comments in social networks, through the "trust box" - a feedback form on the university's website https://iitu.kz/ru/articles/for-students/ящик_доверия/.

In order to establish feedback with students and employers, reception on personal and other issues is carried out by deans and heads of departments at certain hours, when interested persons can get the necessary information. The rector's blog is also used to communicate with stakeholders (https://iitu.kz/ru/articles/about-university/blog-rektora/).

To inform applicants, information stands, banners and signs with the names of faculties and departments are placed on the territory of the university. Open days are held on a regular basis.

The University annually holds Career Days, which allows graduates and employers to establish contact to select the necessary personnel. As a result of such preliminary work, students get an idea of the labor market, existing vacancies and the requirements for them even before graduation. A number of popular clubs and organizations of the university take part in the dissemination of information about the IITU: "*IITU Student Government*"; "*IITU Debate Club*"; Charitable Organization "*UNION*"; "*Kazakhstan IT Club*"; The University's CCR team "IT құрамасы"; Branch of an official organization – *ENACTUS* (www.enactus.org) ; "*E-JOURNALISM IITU*"; "*IITU Cinema Society*"; "*IITU ROBO-LAB*"; The Football Association Of University "*League of IT*", on the pages of the university journal "*Mag`n`IT*", in the broadcasts of university media IT-news, IT-FM radio.

The University regularly participates in various ratings of higher educational institutions of Kazakhstan, as well as in the external evaluation procedure ASIIN.

Analytical part

The analysis of the information provided on the university's website showed that the University publishes complete and reliable information about its activities, the rules of admission of applicants, educational programs, terms and form of study, contact information and other useful information for applicants and students.

At the same time, EEC notes that the university does not publish audited financial statements. Also, despite the wide representation of the IITU in electronic media, not enough attention is paid to publications in traditional media (newspapers, radio, TV).

Assessment of satisfaction with information about the university's activities, the specifics and progress of the implementation of the EP is carried out annually through questionnaires, surveys, feedback, as well as through the rector's blog.

A survey of students conducted during the EEC visit showed that satisfaction (fully and partially) with the usefulness of the university's website and informing students about courses, EP and academic degrees is 93.1% and 88.7%, respectively.

Strengths / Best Practice for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

− to inform the public, the university uses a variety of ways to disseminate information, including electronic media and its own magazines, Internet TV and radio.

Recommendations for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:

− expand the representation of the IITU with publications in traditional urban and republican media (newspapers, radio, TV);

− publish the audited financial statements on the website when it is possible in accordance with the legislation of the Republic of Kazakhstan.

The conclusions of the EEC on the criteria for 6B06114 "Biocomputing" and 8D06105 "Data Science":

According to the Standard "Informing the public", 10 criteria are revealed, of which

according to 6B06114 "Biocomputing", 8D06105 "Data Science" EPs 10-have a satisfactory position.

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

> ✓ EO should 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;
> - the qualification 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 the employment opportunities of graduates.
> ✓ The EP guidelines should provide for a variety of ways to disseminate information, including mass media, information networks to inform the general public and stakeholders.
> ✓ 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 as a whole and in the context of educational programs.
> ✓ An important factor is the availability of adequate and objective information about the teaching staff of the EP.
> ✓ An important factor is to inform the public about cooperation and interaction with partners within the framework of the EP.

Evidence part

The development of the educational programs 6B06114 "Biocomputing" and 8D06105 "Data Science" is aimed at providing graduates with the necessary theoretical and practical training. EP is at the beginning of the road, but the experience of the development of related programs of the Department "Mathematical and Computer Modeling" and the entire Faculty of Information Technologies of the IITU allows us to draw conclusions about the worthy formulation of this work.

The current state of training in the framework of the EP under consideration is supported by the active use of ICT, it is planned to annually update the topics of term papers and theses in the field of biomedicine and transport, as well as the introduction of new elective disciplines, taking into account the recommendations of employers.

In the framework of practical, laboratory work, term papers and IWS, there are calculation and graphic, standard calculations, mathematical modeling, information and technological processes of specific enterprises are considered.

To familiarize students with the professional environment and current issues in the field of specialization, as well as to acquire skills based on theoretical training, the EP includes disciplines conducted jointly with enterprises. It is planned to organize separate classes in the RSE "Institute of Human and Animal Physiology" and LLP "Institute of Railway Development" under the guidance of teachers with relevant work experience. For first-year students, excursions to scientific centers and high-tech enterprises are planned. These events are held in order to get acquainted with the production equipment and technological processes of production, the functional responsibilities of the staff.

The departments have collected teaching materials, electronic textbooks, etc. The educational base of the departments is also equipped with modern laboratory equipment, devices and software for the core disciplines of the implemented EP. When using electronic publications, the university provides each student, during independent training, with a workplace in a computer class with Internet access in accordance with the volume of the subjects studied.

Students of the EP are fully provided with the EMCD and methodological guidelines, textbooks and electronic textbooks, as well as research sites (independently or under the

guidance of a teacher or mentor from the organization).

To provide practical experience in the specialty, various types of practice are provided: for EP 6B06114 "Biocomputing" - educational, industrial, pre-graduate, for 8D06105 "Data Science" - pedagogical and research. At the end of the internship, students must submit reports according to the approved form.

The practice is conducted in accordance with the standard curriculum, according to the academic calendar. The organization and conduct of practical training at the department is carried out in accordance with the requirements of the Standard Rules of the organization of Higher and Postgraduate Education of the Republic of Kazakhstan. The number of credits of professional practice corresponds to the type of specialty. The Department of "Mathematical and Computer Modeling" will conclude contracts for practical training, which define the responsibilities of the department, the basic organization and students.

In order to inform students about employment opportunities, as well as pass training practices, the university annually holds job fairs, which allows graduates and employers to establish contact to select the necessary personnel. As a result of such preliminary work, students even before graduation get an idea of the labor market, the existing vacancies and the requirements for them.

As a result of virtual communication with the management of the future practice bases, the members of the EEC came to the conclusion that the management of EPs 6B06114 "Biocomputing" and 8D06105 "Data Science" seeks to provide measures to strengthen the practical training of students in the field of specialization, as well as in the application of modern information technologies, which is the strength of the EP.

Analytical part

The organization of the educational process for the implemented EP at the Department of "Mathematical and Computer Modeling" is based on a combination of education, science and practice, as well as using modern pedagogical and information technologies. Based on the results of the analysis, the members of the EEC came to the following conclusion.

The information about the complex of works of the profile department on obtaining skills and competencies of professional orientation by students, passing practical training in the workplace, attracting practitioners to conduct classes is presented and confirmed by facts.

Practical orientation takes place in the content and continuity of interdisciplinary relations, in the programs of practices. The EP under consideration includes the following types of practices: for EP 6B06114 "Biocomputing" - educational, industrial, pre-graduate, for 8D06105 "Data Science" - pedagogical and research.

The members of the EEC noted that despite the fact that only first-year students are currently studying at the EP, it is necessary to start working in advance to expand the number of enterprises and organizations in the republic, as well as from abroad, as potential practice bases for the considered EP.

Strengths / Best Practice for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:
– EP includes conducting individual classes and disciplines at specialized enterprises with the participation of professional teachers from the field of biotechnology and transport;
– the management provides training of students in the field of application of modern information technologies.

Recommendations for 6B06114 "Biocomputing" and 8D06105 "Data Science" EPs:
– it is necessary to develop a plan of work to increase the number of cooperation agreements with enterprises and organizations of the republic, as well as from abroad, considered as potential bases of practice for EP.

The conclusions of the EEC on the criteria for 6B06114 "Biocomputing" and 8D06105 "Data Science":

According to the Standard "Standards in the context of individual specialties", 5 criteria are revealed, of which according to 6B06114 "Biocomputing", 8D06105 "Data Science" EPs 5-have a satisfactory position.

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

for 6B06114 «Biocomputing», 8D06105 «Data Science» EPs:

According to the "Management of Educational Program" Standard:
✓ availability of a published quality assurance policy;
✓ a quality assurance policy has been developed that reflects the relationship between research, teaching and learning;
✓ interaction and feedback with teaching staff and students is established, which is confirmed by the results of interviews and questionnaires;
✓ the IITU has created and published a unified quality management system based on the system of business processes of the organization and the distribution of responsibility for individual processes in accordance with the ST RK ISO 9001-2016 with periodic audit.

According to the "Information Management and Reporting" Standard:
✓ the university adequately ensures the functioning of the system of information collection, analysis and management based on the use of modern information and communication technologies and software;
✓ the university has ensured the protection of information, identified the responsible persons for the accuracy and timeliness of the analysis of information and the provision of data.

According to the "Development and Approval of the Educational Program" Standard:
✓ the EP has a practice-oriented graduate model, the formation of which involves interested persons from among employers.

According to the "Constant monitoring and periodic assessment of educational programs" Standard:
✓ regular monitoring and periodic evaluation of the EP take into account the workload and academic performance of students.

According to the "Student-centered Learning, Teaching, and Performance Evaluation" Standard:
✓ the desire to ensure respect and attention to different groups of students and their needs as EP, the increased use of various forms and methods of teaching and learning, as well as the availability of their own new methods of teaching academic disciplines;
✓ organization of a feedback system for evaluating the use of various teaching methods and evaluating learning outcomes;
✓ the consistency, transparency and objectivity of the mechanism for evaluating learning outcomes for each EP, the presence of a procedure for responding to students' complaints.

According to the Standard "Students":
✓ IITU has a well-established system of managing the contingent of students from admission to graduation;
✓ the presence of a service for monitoring the employment and professional activity of graduates of the EP;
✓ a mechanism for supporting gifted students has been introduced;
✓ providing graduates with documents confirming the received qualification, including the achieved learning outcomes, as well as the context, content and status of the received education and the certificates of its completion (European Diploma Supplement).

According to the Standard "Faculty staff":

✓ providing a comfortable psychological microclimate and favorable working conditions for teaching staff, the university management provides all possible support to teaching staff, encourages personal development, including encouraging the integration of scientific activities and education.

✓ the presence of a relatively large number of young, highly qualified, ambitious and motivated teachers who have experience in participating in international research projects, conferences, publications, and are ready to participate in academic mobility programs and international research projects in the profile of the EP under consideration.

✓ practical teachers from research institutes are actively involved in the implementation of the EP.

According to the Standard "Education Resourses and Student Support Systems":

✓ the presence of a constantly developing material and technical base of the University, which provides the opportunity to conduct the educational process and research work at the level of modern requirements for accredited educational institutions, taking into account their specifics;

✓ the presence in the educational organization of a large number of licensed software (product) to support all types of processes;

✓ a technical opportunity to participate in academic mobility programs and international research projects is provided, there is an IT innovation center for promoting innovative projects and startups with the participation of students.

According to the Standard "Informing the public":

✓ to inform the public, the university uses a variety of ways to disseminate information, including electronic media and its own magazines, Internet TV and radio.

According to the Standard "Standards in the context of individual specialties":

✓ EP includes conducting individual classes and disciplines at specialized enterprises with the participation of professional teachers from the field of biotechnology and transport;

✓ the management provides training of students in the field of application of modern information technologies.

(VIII) <u>REVIEW OF QUALITY IMPROVEMENT RECOMMENDATIONS BY EACH STANDARD</u>

for 6B06114 «Biocomputing», 8D06105 «Data Science» EPs:

According to the "Management of Educational Program" Standard:

✓ the management of the EP should monitor and supplement the information on the university's website with information about the quality management system in partner organizations involved in the implementation of the EP.

✓ when developing plans for the modernization and implementation of the EP, the management of the EP should create a risk management system that takes into account changes in the quantitative composition and level of training of future students

✓ the management of the EP needs to plan and complete training in educational management programs.

Additional recommendations for EP 8D06105 "Data Science":

✓ it is required to ensure the participation of students and expand the range of potential employers in the composition of the collegial body (department meetings) when discussing the management of the EP.

According to the "Information Management and Reporting" Standard:

✓ the university management needs to finalize the Regulations on the site and regulate the procedure and timing of updating information on the site, taking into account the requirements for a single presentation of the same type of information.

According to the "Development and Approval of the Educational Program" Standard:

✓ expand the scope of joint research and academic projects with foreign research centers and universities;

✓ - to emphasize the blocks of disciplines that contribute to the successful completion of professional certification on the basis of international partner companies in the field of ICT (Cisco, Microsoft, Oracle, C1, etc.).

According to the "Constant monitoring and periodic assessment of educational programs" Standard:

✓ - develop a procedure for promptly updating information on the university's website when making changes to the content of the program, taking into account the requirements of the labor market and professional associations of employers.

According to the "Student-centered Learning, Teaching, and Performance Evaluation" Standard:

✓ improve the EP, taking into account the needs of students with disabilities;

✓ to conduct a comparative analysis of teaching methods used at the University and in other universities, in order to expand the range of teaching tools;

✓ schedule of seminars for staff EP to exchange experiences and evaluate the effectiveness of various teaching methods to engage in methodological seminars same EP colleagues from the universities of Kazakhstan and foreign Universities;

✓ develop a plan to improve the teaching skills of teaching staff by organizing advanced training courses at the expense of the university.

According to the Standard "Students":

✓ take measures to ensure proper representation of students in the Academic Council and other collegial governing bodies of the University;

✓ to increase the role of the Alumni Association in the activities of the IITU;

✓ in order to meet the needs of students in housing, take measures to build / purchase a hostel and achieve the required number of places in them.

According to the Standard "Faculty staff":

✓ to take measures for the wide participation of teaching staff in international and national scientific projects in the field of computer biology and medicine (EP 6B06114 "Biocomputing") and in the field of transport problems (EP 8D06105 "Data Science").

According to the Standard "Education Resourses and Student Support Systems":

✓ create favorable conditions for recreation and leisure of students on the territory of the university.

According to the Standard "Informing the public":

✓ expand the representation of the IITU with publications in traditional urban and republican media (newspapers, radio, TV);

✓ publish the audited financial statements on the website when it is possible in accordance with the legislation of the Republic of Kazakhstan.

According to the Standard "Standards in the context of individual specialties":

✓ it is necessary to develop a plan of work to increase the number of cooperation agreements with enterprises and organizations of the republic, as well as from abroad, considered as potential bases of practice for EP.
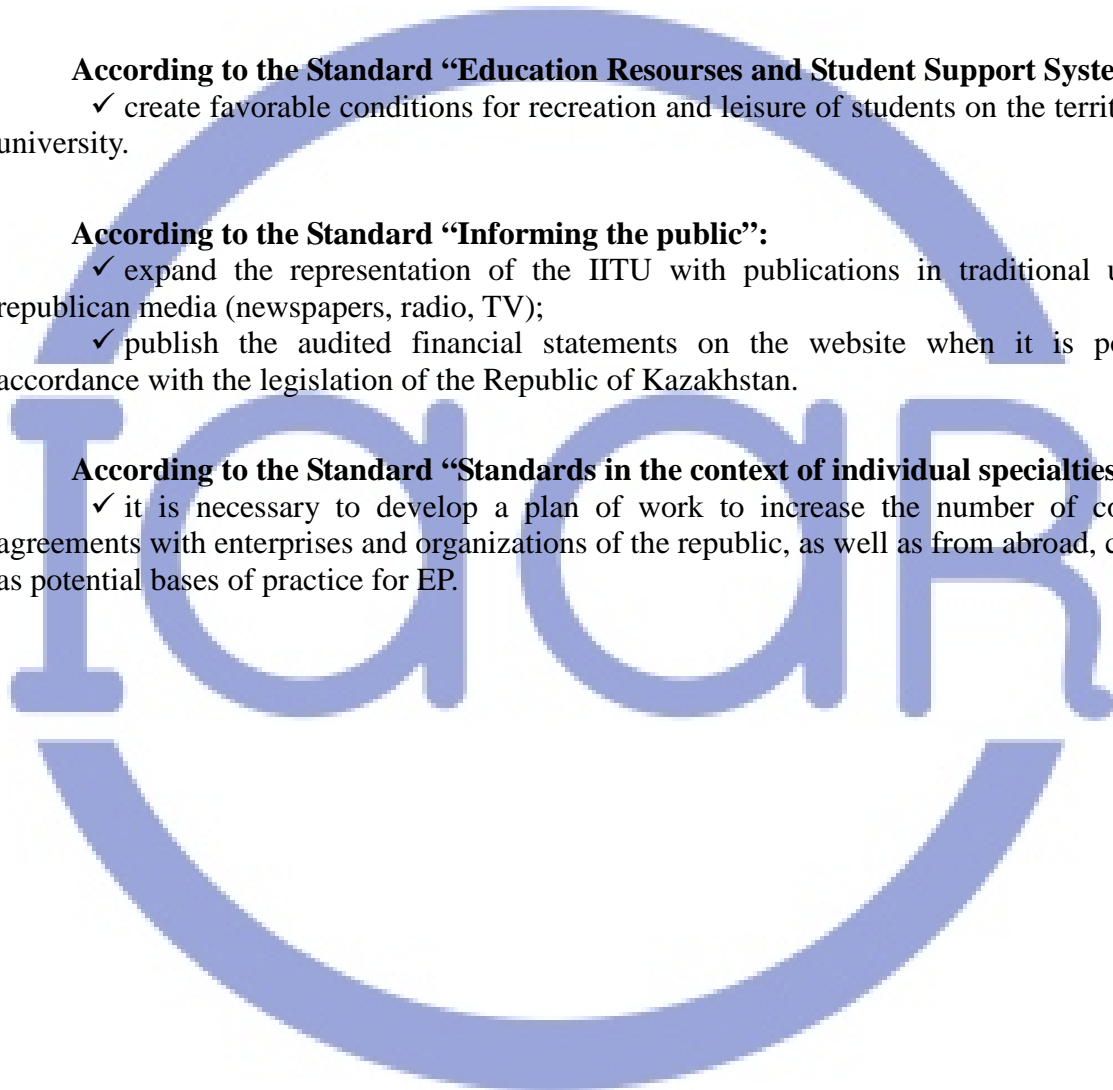
(IX) <u>OVERVIEW RECOMMENDATIONS FOR THE DEVELOPMENT OF THE ORGANIZATION OF EDUCATION</u>

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.

1. Take measures to strengthen the proper representation of students in the Academic Council and public structures of the University.

2. Increase the role of the Alumni Association in the activities of the IITU.

3. With regard to housing and living conditions for students, it is necessary to take measures to purchase a hostel and achieve the required number of places in them, to accelerate the work on acquiring their own hostel and expand the rest rooms for students.

4. Expand the representation of the IITU with publications in traditional urban and republican media (newspapers, radio, TV).

5. Publish the audited financial statements on the website when it is possible in accordance with the legislation of the Republic of Kazakhstan.

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

6B06114 Biocomputing, 8D06105 Data Science EPs

№ o\n	№ o\n	Evaluation criterion	Position of the educational organization			
			Strong	Satisfactory	Suggests improvement	Unsatisfactory
		"Management of Educational Program" Standard				
1	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	2.	The organization of higher and (or) postgraduate education must demonstrate the development of a culture of quality assurance, including in the context of EP.		+		
3	3.	Commitment to quality assurance should apply to all activities performed by contractors and partners (outsourcing), including joint/double-degree education and academic mobility.			+	
4	4.	The EP management demonstrates its readiness to ensure transparency in the development of the EP development plan based on an analysis of its functioning, the actual positioning of the EO and the focus of its activities on meeting the needs of the state, employers, students and other stakeholders. The plan should contain the start date of the educational program.		+		
5	5.	The EP management demonstrates the existence of mechanisms for forming and regularly reviewing the EP development plan and monitoring its implementation, evaluating the achievement of training goals, meeting the needs of students, employers and society, and making decisions aimed at continuous improvement of the EP.		+		
6	6.	The management of the EP should involve representatives of groups of interested persons, including employers, students, and teaching staff in the formation of the EP development plan.		+		
7	7.	EP leadership 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.		+		
8	8.	The organization of higher and (or) postgraduate education must demonstrate a clear definition of those responsible for business processes within the framework of the EP, an unambiguous distribution of staff responsibilities, and the division of functions of collegial bodies.		+		
9	9.	The EP management must provide evidence of the transparency of the educational program management system.	+			
10	10.	The management of the EP must demonstrate the existence of an internal quality assurance system for the EP, including its design, management and monitoring, their improvement, and fact-based decision-making.	+			
11	11.	The management of the EP should manage risks, including within the framework of the EP undergoing primary accreditation, and demonstrate a system of measures aimed at reducing the degree of risk.			+	

12	12.	The management of the educational program should ensure the participation of representatives of employers, teaching staff, students and other interested persons in the collegial management bodies of the educational program, as well as their representativeness in making decisions on the management of the educational program.		+		
13	13.	The EO must demonstrate innovation management within the framework of the EP, including the analysis and implementation of innovative proposals.		+		
14	14.	The EP management must demonstrate evidence of readiness for openness and accessibility for students, teaching staff, employers, and other interested parties.	+			
15	15.	The management of the EP must be trained in educational management programs.			+	
		Total by standard	**4**	**8**	**3**	**0**
"Information Management and Reporting" Standard						
16	1.	The EO should demonstrate that it has a system for collecting, analyzing and managing information based on modern information and communication technologies and software, 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 that there is a mechanism for the systematic use of processed, adequate information to improve the internal quality assurance system.	+			
18	3.	The EP management should demonstrate fact-based decision-making.		+		
19	4.	A system of regular reporting that reflects all levels of the structure, including an assessment of the effectiveness and efficiency of departments and research activities, should be provided within the framework of the EP.		+		
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.	The EO must demonstrate the definition of the procedure and ensuring the protection of information, including the identification of responsible persons for the accuracy and timeliness of information analysis and data provision.		+		
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 EP management should demonstrate that there is 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 staff, 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.		+		
		Information intended for collection and analysis within the framework of the EP should take into account:				
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 procedures for processing personal data of students, employees and teaching staff on		+		

No	№	Criteria				
		the basis of their documentary consent.				
		Total by standard	**2**	**14**	**0**	**0**
"Development and Approval of the Educational Program" Standard						
32	1.	The EO should define and document the procedures for developing the EP and approving them at the institutional level.		+		
33	2.	The management of the EP should ensure that the developed EP meets the set goals, including the expected learning outcomes.		+		
34	3.	The EP management should ensure that there are developed models of the EP graduate describing learning outcomes and personal qualities.		+		
35	4.	The management of the EP must demonstrate that external reviews of the content of the EP and the planned results of its implementation are carried out.		+		
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 EP management should determine the impact of disciplines and professional practices on the formation of learning outcomes.		+		
38	7.	An important factor is the possibility of training 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 complexity of the EP should be clearly defined in Kazakhstan loans and ECTS.		+		
41	10.	The EP management must ensure that the content of academic disciplines and planned results correspond to the level of training (bachelor's, master's, doctoral).		+		
42	11.	The structure of the EP should include 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 learning outcomes of the EP implemented by organizations of higher and (or) postgraduate education in the EHEA.		+		
		Total by standard	**0**	**12**	**0**	**0**
"Constant monitoring and periodic assessment of educational programs" Standard						
44	1.	The EO should define mechanisms for monitoring and periodically evaluating the EP in order 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:				
45	2.	content of programs in the light of the latest scientific achievements in a particular discipline to ensure the relevance of the discipline taught;		+		
46	3.	changes in the needs of society and the professional environment;		+		
47	4.	students' workload and academic performance;		+		
48	5.	effectiveness of student assessment procedures;		+		
49	6.	expectations, needs, and satisfaction of students with training in EP;		+		
50	7.	educational environment and support services, and their compliance with the goals of the EP.		+		
51	8.	The EO and the management of the EP should define a mechanism for informing all interested parties of any planned or undertaken actions in relation to the EP.		+		
52	9.	All changes made to the EP must be published.			+	
		Total by standard	**0**	**8**	**1**	**0**
"Student-centered Learning, Teaching, and Performance Evaluation" Standard						

53	1.	The EP management 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 own research in the field of teaching methods of educational disciplines of the EP.			+	
56	4.	The EP management should demonstrate that there are feedback mechanisms for using different teaching methods and evaluating learning outcomes.		+		
57	5.	The EP management should demonstrate that there are mechanisms to support students ' autonomy, while providing guidance and assistance from the teacher.		+		
58	6.	The EP management 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 must ensure that the procedures for evaluating the learning outcomes of EP students are consistent with the planned results and goals of the program. The evaluation criteria and methods for 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 that they are fully formed.		+		
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**	**7**	**2**	**0**
Standard «Students»						
63	1.	The EO should demonstrate the existence of a policy for forming a contingent of students in the context of the EP from admission to graduation and ensure transparency of its procedures. Procedures governing the life cycle of students (from admission to completion) must be defined, approved, and published.		+		
		The EP management 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 available material and technical resources, information resources, and human resources;		+		
68	6.	analysis of potential social conditions for students, including provision of places in dormitories.		+		
69	7.	The EP management must demonstrate its 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 collaborate with other educational organizations and national centers of the "European network of national academic recognition and mobility information centers/ National academic Recognition Information Centers" ENIC/NARIC to ensure comparable recognition of qualifications.		+		
72	10.	The EP management should demonstrate that there is 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 EP management must demonstrate its readiness to provide students with places of practice, promote employment of graduates, and maintain communication 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 activities of graduates of the EP.		+		
		Total by standard	**0**	**14**	**0**	**0**
Standard "Faculty staff"						
77	1.	The EO should have an objective and transparent personnel policy, including in the context of the EP, including recruitment, professional growth and development of personnel, ensuring the professional competence of the entire staff.		+		
78	2.	The EO must demonstrate that the human resources potential of the teaching staff 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 a favorable working environment.		+		
80	4.	The EP management 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 development strategy of the EO, and other strategic documents.		+		
82	6.	The EO should provide opportunities for career growth and professional development of the staff of the EP.	+			
83	7.	The EP management should demonstrate a willingness to involve practitioners from the relevant industries in teaching.		+		
84	8.	The EO should demonstrate motivation for the professional and personal development of teachers of the EP, including encouragement for the integration of scientific activities and education, and 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	**1**	**8**	**0**	**0**
Standard "Education Resourses and Student Support Systems"						
86	1.	The EO must ensure that there are sufficient training resources and student support services that meet the goals of the EP.		+		
87	2.	The EO must demonstrate that the material and technical resources and infrastructure are sufficient to meet the needs of different groups of students in the context of EP (adults, employees, foreign students, and students with disabilities).		+		
		The EP management should demonstrate that there are procedures in place to support various groups of students, including information and counseling. The management of the EP must demonstrate that information resources correspond to the specifics of the EP, including:				
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, graduation papers, dissertations for plagiarism;		+		
91	6.	access to educational Internet resources;	+			
92	7.	functioning of WI-FI on 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 similar to those used in the relevant industries.		+		
		Total by standard	**2**	**6**	**0**	**0**

Standard "Informing the public"

		The EO must publish reliable, objective, up-to-date information about the educational program and its specifics, which should include:				
94	1.	expected learning outcomes of the educational program being implemented;		+		
95	2.	qualifications and (or) qualifications that will be assigned upon completion of the educational program;		+		
96	3.	teaching 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 management of the EP should provide for a variety of ways to disseminate information, including the media, information networks to inform the general public and interested persons.		+		
100	7.	Public awareness should support and explain the country's national development programs and the system of higher and postgraduate education.		+		
101	8.	The public organization should demonstrate the reflection of information on the web resource 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 in the framework of the EP.		+		
		Total by standard	**0**	**10**	**0**	**0**

Standards in the context of individual specialties

NATURAL SCIENCES

		The educational program in the areas of "Natural Sciences", for example, "**Biocomputing**", "**Data Science**" etc., must meet the following requirements:				
104	1.	The EP should include disciplines and activities aimed at gaining practical experience and skills in the specialty in general and in profile disciplines in particular, including: *- excursions to enterprises for specialization (factories, workshops, research institutes, laboratories, educational and experimental farms, etc.);* *- conducting individual classes or entire disciplines at the enterprise of specialization;* *- conducting seminars to solve practical problems relevant to enterprises in the field of specialization, etc.*		+		
105	2.	The teaching staff involved in the education program should include, as full-time teachers, practitioners who have long-term experience as a full-time employee at enterprises in the field of specialization of the education program.		+		
106	3.	The content of all EP disciplines should be based on and include a clear relationship with the content of fundamental natural Sciences.		+		
107	4.	The management of the EP should provide for measures to strengthen practical training in the field of specialization.		+		

108	5.	The management of the EP should provide training for students in the field of modern information technology.		+		
		Total by standard	**0**	**5**	**0**	**0**
		TOTAL	**10**	**92**	**6**	**0**