



«АККРЕДИТТЕУ ЖӘНЕ РЕЙТИНГТИҢ  
ТӘУЕЛСІЗ АГЕНТТІГІ» КЕМ

НУ «НЕЗАВИСИМОЕ АГЕНТСТВО  
АККРЕДИТАЦИИ И РЕЙТИНГА»

INDEPENDENT AGENCY FOR  
ACCREDITATION AND RATING

# REPORT

on the results of the work of the external review commission for evaluation  
for compliance with the requirements of the standards of specialized accreditation  
of educational programs

5B070100 / 6M070100 - "Biotechnology"

5B071200 - "Mechanical Engineering"

5B071300 - "Transport, transport equipment and technology"

5B071600 / 6M071600 - "Instrument-making"

**Central Asian University**

**from June 07, 2018 to June 09, 2018**

Almaty 2018

**INDEPENDENT AGENCY FOR ACCREDITATION AND RATING**  
**External review commission**

**Addressed to  
Accreditation  
board of the IAAR**



Независимое агентство  
аккредитации и рейтинга

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## **I List and Abbreviations**

**R K** - Republic of Kazakhstan

**DB** - basic disciplines

**BPC** - point-rating system

**Higher education** - higher education

**BA** - Bachelor's degree

**MA** - magistracy

**PhD** - doctoral studies

**Higher education institution** - higher educational institution

**EEC** - external expert commission

**VOUD** - external evaluation of educational achievements

**SAC** - State Attestation Commission

**FESCO** - Department of Higher and Postgraduate Education

**DEP** - distance learning technology

**ICT** - information and communication technologies

**IUP** - individual curriculum

**State Educational Standards** - State Compulsory Education Standards

**GPR** - State Program for the Development of Education

**IAAR** - Independent Accreditation and Rating Agency

**NPA** - normative and legal acts

**NRC** - National Qualifications Framework

**NSC** - National system of qualifications

**EP** - educational program

**ECTS** - European system of credit transfer and accumulation

**ESG** - standards and recommendations for quality assurance in the European Higher Education Area

**EMA REMS** - Educational-methodical association of the Republican educational-methodical council

**ICT** - information and communications technologies

## II INTRODUCTION

In accordance with the order number 60-18-BD dated May 17, 2018, the Independent agency on accreditation and rating from June 7, 2017 to June 9, 2018 the external evaluation committee has evaluated the compliance of the Central Asian University with specialized accreditation standards IAAR (from "24" February 2017 number of 10-17-BD, fifth edition).

Report of the External Expert Commission (EEC) provides an assessment of compliance of the Central Asian University criteria IAAR EEC recommendations for further improvement of the profile settings and the University.

The composition of the EEC:

1. **Chairman** Commission - Turtkarayeva Gulnara Bayanovna, candidate of pedagogical sciences, associate professor, Kokshetau State University. Sh.Ualikhanov (Kokshetau);
2. **Foreign expert** - Michael Henry (Eric) Martizhens (Hendrik Michael (Erik) Martijnse), director of the Higher Education Inspectorate of Education of the Netherlands, an expert ENQA, INQAAHE, APQN (Utrecht, Netherlands);
3. **Foreign expert** - Alexander Grakovsky (Grakovskis Alexanders), professor, Institute of Transport and Communications (Riga, Latvia);
4. **Expert** - Aldabergenova Saul Salimzhanovna, Kazakh State Agro Technical University named after S. Seifullin (Astana);
5. **Expert** - Khamrayev Sheripidin Itahunovich, Candidate of Technical Sciences, Associate Professor, Kazakh National Pedagogical University named after Abay (Almaty);
6. **Expert** - Lyudmila Polyakova, Kazakhstan Engineering and Technological University (Almaty);
7. **Expert** - Aldungarova Alia Kayratovna, Dr. PhD, Associate Professor, Pavlodar State University named after S. Toraigyrov (Pavlodar);
8. **Expert** - Kopishev Eldar Ertaevich, Candidate of chemical sciences, Acting Associate Professor, Eurasian National University. L.N.Gumileva (Astana);
9. **Expert** - Musabekov Rasulbek Akylbekovich, Candidate of Technical Sciences, Associate Professor, Almaty Energy and Communications University (Almaty);
10. **Expert** - Akhmedyanov Ugubayevich Abdullah, Candidate of Technical Sciences, Associate Professor, Eurasian National University named after L.N. Gumileva (Astana);
11. **Expert** - Mikhail Borisovich Smirnov, Candidate of Technical Sciences, professor, State University. Shakarim of Semey;
12. **Expert** - Talgat Yeschzhanov Yesmahanbetovich, Dr. PhD, named after Suleyman Demirel University (Almaty);
13. **The employer** - Pylypenko Yuri Alexandrovich, chairman «EXPOBEST» producers of goods and services of the International Association Board of Directors (Almaty);
14. **Student** - Amanbek Asem Nurglykyzy, a student of the Kazakhstan Engineering and Technological University (Almaty);
15. **Student** - Tokburina Aisulu Kalasovna, a student of the Kazakh State Women's Pedagogical University (Almaty);
16. **Student** - Medetov Batyrkhan Yergaziyevich, a student of Almaty University of Energy and Communications (Almaty);
17. **The observer from the Agency** - Timur Kanapyanov Yerbolatovich, head of international projects and communication with the public IAAR (Astana).

### **III PRESENTATION of the Central Asian University**

Central Asian University was founded in 1997 in Almaty. The CAU structure consists of 3 faculties, 5 departments, 21 research laboratories and research centers.

University training of specialists carries out in 7 directions (Education, Humanities, Social Sciences, Engineering, Economics, Law, Services), 55 undergraduate majors, 27 master specialties and 7 specialties of doctoral studies PhD.

CAU contingent of students on September 1, 2017 amounted to 1 984 people.

The contingent of students:

- full-time - 1580 students, by correspondence - 280 on a contract basis with full cost recovery, including at the state yazyke- 954 students.

The contingent of undergraduates - 115 people.

Contingent doctoral - 9 people.

The CAU trained 27 foreign students from China, Mongolia, Tajikistan, Turkmenistan, Uzbekistan.

The educational process serves the faculty in the amount of 145 people, including staff - 124 people (85%): doctors, professors - 26chelovek; Ph.D., associate professors - 75 people and masters - 23 people.

Ostepenennyh at university is - 81,4%.

Increasing the number of teachers instructing in the state language: in the 2015/2016 academic year - 116 people (80%), in the 2016/2017 academic year - 119 people (82%), in the 2017/2018 academic year - 122 people (84% ).

Educational activities of the university carry out on the basis of the state license No.0137420 from AB "03" in February 2010, issued by the Committee for Control of Ministry of Education of Education and Science.

Evaluating the effectiveness of the University mission carried out by comparing the results with the purposes and used as a feedback mechanism for managerial decision and analyzing the quality management system (hereinafter, QMS) within the received certificate AC "Russian register» ISO 9001: 2015. Infrastructure CAU includes four educational buildings, sports hall, dormitory area of 700 sqm, a dining room for 240 seats.

University has eighteen training and laboratory rooms, the total area, with modern equipment and the measuring means.

The training process is used twenty interactive whiteboards, three hundred and twenty of today's computers, of which two hundred fifty-four have access to the Internet. Library resources of the university are five hundred and twenty copies.

As part of the training target of forty-five graduates and university staff were trained in postgraduate education programs at leading universities of Kazakhstan:

The University operates under a charter approved by the Department of Justice of Almaty on September 3, 1997 No. 3112/1910; Certificate of state registration of legal entities No.13112-1910-01- I-e from September 03, 1997 .; Statistical card; Taxpayer certificate of the Republic of Kazakhstan, BIN 970 940 001 516.

### **IV DESCRIPTION OF THE VISIT OF THE EEC**

The visit of the external evaluation committee in the CAU was established in accordance with the program agreed in advance with the Chairman of the EEC in the period from June 07, 2018 to June 09, 2018.

In order to coordinate the work of EEC in June 07, 2018 place setting meeting, during which the powers were distributed between members of the Commission, to clarify the schedule of the visit, agreed in the selection examination techniques.

In order to obtain objective information on the evaluation of the University of EEC members to use methods such as visual inspection, observation, interviews with employees of

various departments, teachers, students, graduates and employers, a survey of faculty members and students.

EEC focus groups were conducted in accordance with the updated program of the visit, with the observance of the established time period. On the part of the team of the Central Asian University was provided by the presence of all the persons mentioned in the visit program.

### **Information about the colleagues and students, participated in meetings with EEC IAAR**

| <b>Category members</b>                           | <b>amount</b> |
|---|---------------|
| The president                                     | 1             |
| Deputy-Rector                                     | 2             |
| heads of departments                              | 5             |
| Directors of departments and heads of departments | 19            |
| teachers  | 90            |
| Students, undergraduates                          | 283           |
| Graduates   | 77            |
| employers   | 49            |
| <b>Total</b>                                      | <b>109</b>    |

Experts visited the department of pedagogy, psychology and social sciences, computer and multimedia classrooms, the center innovational and information technology, finance office, a language lab, video studio, a scientific library, a health center, sports facilities, hostel, open lessons on discipline "Criminal Law", "workshop of professional communication", "Department of Basic Sciences and the oil and gas industry", "Department of International relations and world languages", "Department of Pedagogy and the humanities."

EEC members were attending classes: on the subject "Technology and engineering of oil" on "Tenyz ken oryndarynyn mengerudyn kazyrgy zhagdaydy" teacher Zheksenbayev Ye.K.; on discipline "Profession-oriented foreign language" on topic the «Public speech», teacher Sadykova Zh.Ye.; on discipline "Philosophy" on topic the "Dulat Isabekov shygarmalaryndagy aleumettyk taldau" teacher Baltabayeva G.S.

EEC members visited the base practices of accredited programs: Migration Police Medeu district, JSC "Kazakhtelecom", trading network "White Wind", Lion Auto Center Almaty LLP Kazakh Research Institute of Mechanization and Electrification of Agriculture, "Cy Kazinkas" LLP, "Nemo" Dolphinarium, TV channel "Almaty".

In order to confirm presented in the report on self-assessment by external experts of information was requested and reviewed the working documents of the University. In particular, the Strategic Plan of the Central Asian University on 2017-2021 years, plan teaching work over the last three academic years, the work plans of departments, faculty work plans, concept of educational work of the Central Asian University for the period 2015-2020, elective catalog disciplines for each academic year, the Regulations on the department, undergraduate and graduate RUE, job descriptions, the Scientific Council of protocols TEACHING MATERIALS, syllabus, etc.

At the same time, experts have studied the internet positioning of the University through the official website: <http://www.cau.kz>

As part of the planned program of recommendations to improve the activities of the University, developed the EEC according to the results of examination, it was presented at a meeting with the leadership of June 9, 2018.

## V GENERAL ASSESSMENT OF THE CENTRAL ASIA UNIVERSITY

Central Asian University was founded in 1997 in Almaty. Over the years much has changed at the University: increased the number of faculties and specialties, there was a three-tier system of education - bachelor's and master's degree, PhD-doctoral studies, increased by several times the number of students who have additional educational programs.

Cooperation with Russian universities is based on the Memorandum of cooperation in education, science and culture between the higher education institutions of the Republic of Kazakhstan and the higher education institutions of the Russian Federation. Signed and implemented an agreement on joint training, particularly on economic specialties - Moscow (MAI), Saint Petersburg (ITMO), have entered into an agreement for the exchange of students between universities "Mevlana" program. There is an agreement with the National Aviation University (NAU, Kiev) for information technology and space exploration.

The University prepares specialists in the fields: Education, Humanities, Social Sciences, Engineering, Economics, Law, Services. Three departments (5 departments) - Pedagogy and humanities, basic sciences and oil and gas industry, the International Relations and World Languages, Economics and Finance, the legal discipline. Since 1997, the Central Asian University has over 45 000 experts. By the learning process involved more than hundred forty-five teachers of these eighty-one with scientific degrees.

Research work carried out on the CAU 12 registered initiative scientific topics JSC "National Center for State scientific and technical expertise "The contract with JSC Science Foundation grant to commercialize the results of scientific and technological activities in the amount of 300 mln.tg on November 21, 2017 No.428. In the direction of mechanization and electrification of agriculture.

During the reporting period, 3 teachers have won the state grant "The best teacher" in 2009, Ph.D., professor Shankibaev BN in 2013 d.f.n Professor Baltabaeva GS in 2015, DF , professor MK Nadyrov

## VI COMPLIANCE specialized accreditation

### 6.1. Standard "Management of the educational program"

#### **Evidence**

Pathways to CAU on educational programs 5B070100 - "Biotechnology", 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technology" and 5B071600 - "Instrument" is carried out by full-time and part-time form on the basis of general secondary, secondary and higher vocational education. Preparation Masters in EP 6M070100 - "Biotechnology" and 6M071600 - "Instrument" is held in the directions - scientific-pedagogical and profile. Accredited by the EP are implemented on the basis of the state license No.0137420 from AB "03" in February 2010, issued by the Committee for Control of Education and Science of the MES and the application to the state license for undergraduate and master's degree. Training at the University is carried out in accordance with the Classification of specialties of higher and postgraduate education of RK.

CAU policy in the field of quality and university quality objectives are presented in the 2016/2017 academic year (reviewed and approved by the Academic Council of the University protocol No.9 from November 08, 2016 years). This document is available on the website www.cau.kz University and is available to interested parties.



Implementation and development of accredited programs is determined by the University's mission, strategy development CAU, as well as plans of accredited educational programs (approved by June 28, 2017).

The development strategy in the CAU 2017-2021 (approved by the Academic Council of CAU protocol No.1 from August 25, 2017 city) reflects the main directions of development of the university:

- Modernization of the educational process;
- Modernization of the research process and innovation;
- Strengthening human resources potential, contingent of students and alumni;
- Modernization of the infrastructure;
- Improving the organizational structure and improving management efficiency.

Plans for the development of accredited EP developed with the participation of the Director of SS, experienced teachers and employers. The development plans reflect the specifics of EP, corporate documents regulating the implementation of the EP, the contents of EP. However, the development plans of the EP did not reflect the aims and objectives of EP, measures to reduce risks for the EP and expected final results of the plan. Guide attracts representatives of employers to an external review by EP: Kalimbetov GP (NPK "Satta") Syzdykov A. (LLP Research and Technology and Innovation Corporation "Aul Nur"). The effectiveness of EP Development Plan provides the responsibility of the department and the faculty head for the final results, delegation and division of powers.

To maintain the core business processes in high school has developed a set of internal normative documents regulating the implementation of the EP (ABM CAU internal regulatory documents, antimissile defense CAU Methodical work, Regulations on the organization of educational process, the Regulation on the organization of educational work at the university), and others.

Experts in the course of acquaintance with the internal documents seen in the presence of those responsible for the business processes within the EP, a clear distribution of duties of staff, demarcation of collegial bodies of functions, transparency of educational program management.

Conversations with students of accredited BD, teaching staff special chairs, and familiarity with the documentation at the department made it possible to ensure the successful operation of the internal quality assurance system EP.

To control the BD available the necessary information, human, financial and material resources, as well as legal documentation to ensure the implementation of educational programs.

### **Analytical part**

However, the following issues related to this standard does not fully reflected in the self-report and have not been confirmed during the visit of the EEC.

EEC notes that the presented goals are immeasurable and are mainly descriptive. Also, do not provide information on the implementation of these goals, there is no "quality policy" and "quality objectives" in the 2017/2018 academic year.

It is not enough confirmed the uniqueness and advantage of each submission for accreditation EP over similar educational programs of other universities, this opinion was confirmed during interviews with the leaders of the EP and the analysis of the submitted documentation.

teaching staff mobility is absent.

development plans analyzed by experts accredited EP does not contain the analysis of university ranking and EP.

The experts found no evidence to ensure EP necessary software licenses for the implementation of educational activities.

Not systematized work on risk management implementation of educational programs.

During the analysis of the self-assessment report, discussions with the leadership of the SOs and heads of departments, exploring the internal documents of the EP management could

not be documented to demonstrate that the university is carried out the analysis and the practical implementation of innovative proposals.

Information about the control mechanism EP, changes in the process are fully reflected on the official website of CAU.

Special chair should be more clearly monitor the performance of the processes by the use of target indicators to track the effectiveness of management EP.

According to results of a questionnaire-availability and responsiveness manual "fully satisfied" university - 68.9%, "partially satisfied" - 21.5% and "partially satisfied" - 4.4% "not satisfied" - 3%; "Undecided" - 2.2% of students.

### **Recommendations EEC**

1 Systematic positioning EP followed by the application of its results in the development of EP Development Plan.

2 Taking into account the changes in the external environmental factors to implement corrective and preventive actions aimed at continuous improvement of BD, including by amending the development plan EP.

3 Manual EP conduct systematic work on the identification and formulation of individuality, uniqueness of educational programs in accordance with the national development priorities of the country's economy.

4 Carry out regular review of the development plan of the educational program and monitoring its implementation.

5 Activate the work of filling the site of the University of information about the content and implementation of the EP instruments.

6 Analyze the risk management system of strategic university management.

**EEC conclusions on criteria for the EP 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies", 5B070100 / 6M070100 - "Biotechnology", 5B071600 / 6M071600 - "Instrument": strong - 0, satisfactory - 12, for improvement - 5.**

### 6.2. Standard "information management and reporting"

#### **Evidence**

Information about CAU-up to the EP is published on the website of the University, local and national media, social networks. The site CAU reflected general information about the university, goals and objectives, about the history of the University, for educational activity licenses, the list of specialties,

The CAU introduced following collection, analysis and management of information on the basis of modern information and communication technology and software means:

-Management information within the official website of the university.

-Manage teaching methods of information within the AIS Lotus. The system provides the following features: managing the academic calendar, the formation of individual plans, uploading TEACHING MATERIALS, the formation of examination sheets, the current testing of students in the classroom.

The reporting system includes the annual reports of departments, reports on research and STUDENT RESEARCH WORK, the financial statements. Report on the activities of the rector of the university and the challenges the team for the upcoming academic year be heard annually at the enlarged meeting of the Academic Council.

collection, analysis and management information CAU used for quality assurance implementation EP. For example, the formation of collective examination sheets, debtors list, an electronic archive of the session reports are used to analyze the results of the sessions and the decision on the improvement of the educational process.

In the media (newspapers, magazines, television stations), staff of the department annually update information stands "Information" chairs "Our Life", "TEACHING STAFF

chairs", published in hard copy by banners and portable rolapy (stands), shot videos and create presentations, also updated booklets on all the educational programs, which are distributed throughout the territory of Kazakhstan in general education schools. The University is open to the society, establishing contacts with the city authorities, educational institutions, groups, industries, NGOs, etc.

### **Analytical part**

However, the Commission notes the lack of a systematic approach to the collection and analysis of internal and external documentation, lack of electronic documents. The university provides a low use of modern information and communication technologies for information management, as well as the timeliness and completeness of the information for decision-making to improve.

The university is not fully uses the resources of the web space on the university website from 55 undergraduate programs, only 25 did not present complete information about the contents of EP. Description postgraduate education online experts have found. It is necessary to provide the public with information about the presence of CAU faculty members.

According to the results of questioning the usefulness of the web site completely satisfied with 41% of students in part - 53%.

#### **The Commission recommends that:**

- 1 Increase public awareness of the results of the Central Asian University;
- 2 Place an online university information on teaching staffs in the context of personnel;
- 3 Place an online information about ongoing education at the university level for training programs;
- 4 Provide accommodation on the university's website for information on the results of an external evaluation of the university.

***EEC notes that for all accredited programs of 11 criteria of the standard high school has a satisfactory position, 6 position requires improvement.***

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

#### **Evidence of the**

Development and approval of educational programs at the University is carried out in accordance with the provisions of legal acts in the sphere of higher and postgraduate education, as well as documentation that has the university to ensure the implementation of the directions of development strategy.

Accredited EP provided documentation teaching methods in accordance with the requirements of the MES: state mandatory educational standards; typical and working curricula of specialties; standard and working curricula of disciplines.

Evaluation of the quality of educational programs based on the analysis of curricula, the catalog of elective courses, schedules, individual plans of students, the internal regulations governing the implementation of educational programs, the survey of students.

The following types of curricula in universities: the standard curriculum, the curriculum. Curricula are developed on the basis of model curricula in the field for the entire period of study, the State obligatory standards of education and the organization of educational process on the Regulation of credit technology. In accordance with the SES of the RK in the curriculum maintained the ratio of cycles of disciplines volume Ltd., DB majors.

The content and structure of accredited EP formed in accordance with the requirements of the Model Regulations on the activities of organizations of higher and postgraduate education, approved by the Government of the Republic of Kazakhstan from May 17, 2013 No.499 (as amended on April 07, 2017), SES of the RK approved by the Government Resolution No.1080 dated August 23, 2012 (with amendments dated August 15, 2017), Rules of the organization of educational process on credit technology, approved by Order of the Minister of education and

science No.152 dated April 20, 2011 with corresponding changes to them (as of January 28, 2016).

Formation of individual educational trajectories of the student is carried out by advisors for each academic year based SES RK standard Curricula, individual Curricula.

Special Department annually compiles and maintains working curricula, catalogs of elective disciplines (CED). CED provides a brief description of the subjects, indicating prerequisites and postrequisites of discipline. CED available on chairs and on the educational portal.

The curriculum provides a modular study courses in compliance with logical sequence of study subjects, based on the model curriculum specialty, graduates models. Curricula, modular educational programs (MOS) are designed for the entire period of training and contain a complete list of academic disciplines that are grouped into cycles of general education (GE), base (DB) and the majors (PD) both mandatory and for elective components. Indicated the complexity of cycles of disciplines in the Kazakh and ECTS credits and hours, with the release of lectures, practical (seminar) classes, independent work of students under the guidance of a teacher and independent work of students, all kinds of professional practice, interim certification.

The department developed a special program all types of practices. For the passage of practice contracts with various agencies and organizations: LLP "Inox Ltd", BPH on PVC "Technopark", LLP "Zhaken-Culshaw" NTK "Aul Nur."

By developing educational and methodical documentation: curriculum; working curricula, catalogs of elective courses, programs of all kinds of practices, subjects of the graduation projects and master's theses involved employers, teaching staff. So for accredited EP were involved employers in the face of "SATTI" Research and Manufacturing Complex, the National Academy of Sciences of RK, LLP scientific-technical and innovative corporation "Aul Nur", which proposed changes to the course content in a number of disciplines: "Interaction of road transport with other modes Transport "(Transport, transport equipment and technology); "Organization, planning and management of production" (Mechanical Engineering); "The technology of biological objects" (Biotechnology); «IT Project Management" (Instrument), and others.

### **Analytical part**

EEC experts point out that the accredited EP management attracts employers' representatives to harmonize and external review EP, but in some cases there is duplication of reviewers and external experts for EP.

In the analysis of the studied documents, as well as on the results of interviews with students, faculty, alumni and employers found that the defined objectives for the implementation of accredited EP is not fully reflected in the structure and content of the EP, developed by graduates of models.

The graduates developed models of EP is not presented competencies that graduates need to master at the end of training. It did not fully consider the influence of disciplines and professional practices on the formation of learning outcomes. In this regard, there is need to review the content of the graduates of the models in the practical skills and competencies. In discussing the graduate model involved a limited number of employers (not represented various industries, taking into account ongoing learning paths).

Analysis of the structure and content of the EP and EMCS educational programs that PD cycle discipline does not sufficiently have the practice-oriented.

Do not put the work on the certification of professional achievements of students, which confirms the presence of graduate competencies recognized by the professional community as necessary to perform certain professional functions. Chair of the ad hoc practical exercises using the demo versions of programs.

Students take part in scientific student conferences, organized by both the University and other universities, also chair the scientific circle "Transport", and the students are not involved in

funded research projects, R&D departments, executed by teaching staff. The Commission recommended a greater involvement of students, undergraduates in the department of research relevant to their theses, master's theses.

By accredited EP is not actually implemented together with foreign universities EP. However, the university is negotiating with universities in the European countries in this direction.

Questioning of students conducted during the visit EEC IAAR, showed that: the level of responsiveness to feedback from teachers about the learning process "completely satisfied" - 71.1%; partially satisfied - 20%; "Not satisfied" - 3.7%. Satisfied with the quality of teaching "completely" - 66.7%, "partially satisfied" - 20%, "not satisfied" - 7.4% "undecided" - 1.5%.

#### **Strengths / best practice**

The complexity of EP is clearly defined in the Kazakhstan credits and ECTS.

#### **Recommendations of EEC**

1 Refresh purpose of realization of educational programs 5B070100 / 6M070100 - "Biotechnology", 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies", 5B071600 / 6M071600 - "Instrument-making" to ensure their compliance with the anticipated labor market needs, realistically achievable learning outcomes, taking into account the resource base and personnel potential of the university.

2 Refresh models alumni-specific paths implemented in educational programs 5B070100 / 6M070100 - "Biotechnology", 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies", 5B071600 / 6M071600 - "Instrument-making".

3 When forming cycle majors accredited by EP in practice-use switch disciplines as a priority.

4 Involve the students to work together with the teachers of the department of special research.

5 To carry out the work on the implementation of joint educational programs with foreign educational institutions.

***EEC conclusions on criteria for the EP 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies", 5B070100 / 6M070100 - "Biotechnology", 5B071600 / 6M071600 - "Instrument-making": strong - 1, satisfactory - 9 for improvement - 2.***

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

##### **Evidence of the**

Methodical instructions "Organization, planning and monitoring of the Central Asian University educational process" for the organization and control for continuous monitoring and periodic evaluation of the cluster accredited educational programs developed by the university.

To determine the level of satisfaction with domestic consumers at the university annually surveys concerned university officials. During the reporting period were carried out at the university:

- questioning students about the faculty teaching activities;
- satisfaction of university faculty;
- satisfaction of students to support them.

Permanent monitoring and periodic evaluation of accredited EP carried out taking into account the proposals of the Department faculty, employers, students, chairmen of the SJC.

EP processed in connection with the change in the MES regulations, the introduction of new destinations and elective courses. Update EP carried out in accordance with employers' demands, which is reflected in the catalog of elective subjects in the respective academic year.

The proposed changes are approved at the meeting of EDUCATIONAL AND METHODOLOGICAL BOARD chair, faculty and the university, the University Academic Council. The procedure for amending the EP is regulated by the following documents:

- GNI CAU 20-17 "Guidelines curriculum development of undergraduate specialties of the classifier 2016";
- GNI 21-17 "Guidelines for the development of modular educational programs CAU";
- ABM CAU 704-17 "Planning the learning process."

Based on the analysis and evaluation of monitoring indicators developed measures to improve the quality of implementation of the EP.

university administration, faculty, department demonstrated its accessibility to students, faculty, employers with any questions.

### **Analytical part**

EEC notes that the University provides a review of the content and structure of educational programs with the participation of employers. The Commission draws attention to the instruments used to detect changes in the labor market and the structure of attracted employers and recommends that the labor market analysis using the SWOT analysis method to take account of the expected learning outcomes in the contents of EP, exclude the possibility of risks in the implementation of EP. In developing the EP need to increase the representation of employers for various industries.

Employers participating in the development of EP by introducing its proposals for new elective courses. At the university, there are acts of harmonization of accredited education programs with employers on training and methodological documents on the list of readable disciplines. But it is not designed for regular monitoring of employers' satisfaction with graduates of the procedure that would allow to identify the strengths and weaknesses of the learning outcomes and content of the EP.

Participation of students in the revision of the EP is limited to monitoring their satisfaction with the quality of the educational process, therefore, the Commission recommends a wider consideration to the opinions of students in the design phase and discussion EP by incorporating them into the Scientific and Methodological Council or other collective bodies.

Informing students, faculty, employers amending the EP is carried out not in full, which was revealed at interviewing of stakeholders. Such information is not published on the website of the University. In this regard, the Commission considers that it is necessary to provide continuous and timely information to students, faculty, employers across the different communication channels of any changes made in the EP

In the study of the state of affairs on the accounting results of the analysis of labor market changes, the requirements of employers and social demands of society, were given letters from employers about the inclusion of new elective courses, however, labor market monitoring on a permanent basis is not carried out. The Commission therefore recommended to carry out ongoing monitoring of the labor market, the impact of environmental factors to determine the expected learning outcomes in the development and updating of the content and structure of the EP.

Following the results of the survey level of availability and responsiveness of management "fully satisfied" with the university - 68,9% of students. The guide is available to teachers rated as "very good" - 63% "good" - 32.0% teaching staff.

### **Recommendations EEC**

1 On an ongoing basis to monitor the results of the implementation of EP exposure to changes in the labor market, the external environment.

2 Activate the participation of students in the procedures for continuous monitoring and periodic evaluation of EP by incorporating them in a collegial body of the University.

3 Promptly inform employers, learners and other stakeholders about changes in the EP.

**EEC conclusions on criteria for the EP 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies", 5B070100 / 6M070100 - "Biotechnology", 5B071600 / 6M071600 - "Instrument-making": strong - 0 satisfactory - 9 for improvement - 1.**

### 6.5. Standard "Studentotsentrirovannoe learning, teaching and evaluation of progress"

#### **Evidence of the**

In general practice student oriented university education, by taking into account the personal characteristics and needs of students.

Manual EP provides equal opportunities to students regardless of the language of instruction for the formation of individual educational program aimed at formation of professional competence. According to EP accredited educational process is implemented in the context of the languages of instruction (the state language and Russian language).

As noted by the students during the meeting, the leadership of EP with respect and consideration relates to the different groups of students. The university is a place for social support of students achieved the learning outcomes, in particular, during an interview with University faculty noted that students scored on the results of UNT more than 80 points, have a discount on the tuition fees of up to 50%.

The educational process is carried out using a separate interactive teaching methods. So when working with undergraduates' multimedia system used to work with scientific information in on-line mode with access to Internet resources.

All disciplines of the department of EP "Basic Sciences and the oil and gas industry," in part provided presentations. Over the past three years, staff of the department was created 19 titles of electronic publications, including electronic books and video lectures.

Teachers of the department of special uses active methods of training - binary lectures solution case studies, essay writing, search labs, and others.

Teaching disciplines is carried out using demos programs. Licensed software is not accredited EP.

The university develop guidance on the organization of independent work of students of the Central Asian University. Programme Development and Evaluation Section is held on a separate schedule, drawn up by a special department.

During his visit to the bases of practice leaders' practices of EP celebrated sufficient theoretical and practical level of preparedness of students at EP "Machinery" and "Transport, transport equipment and technology".

teaching staff EP carried out certain work aimed at the study and improvement of educational disciplines teaching methodology EP.

As noted by students in the course of the interview, they have the opportunity to address their requests to the rector of the university, the dean of the Faculty, Head of the Chair and other members of the administration.

Students have the opportunity to form their own learning path by choosing elective courses and drawing up their individual curriculum.

Manual EP aims to provide attention to different groups of students and their needs, giving them a flexible learning paths and using various forms and methods of teaching and learning. Special Department did not provide information on their own research in the field of educational disciplines teaching methodology EP.

To monitor the effectiveness and efficiency of teaching carried out a survey among students, "Students of teaching staff educational activities." As the results of this survey, students are satisfied with the quality of training in high school.

Working within the loan program, a special department was created favorable conditions for the development of disciplines studying EP. For this purpose, developed:

- work training in the disciplines of the program;
- on subjects' course (Syllabus) for students;
- guidelines for implementation of independent work of students;
- catalogs of elective courses.

Students are informed about the possibilities of the formation of individual educational trajectory, as well as assistance in its implementation through the «Lotos» system, as well as with the help of advisors.

Monitor the progress of students on educational trajectory is carried out "Office-registrar" on the basis of the results of the assessment system of students and staff of the department reports.

assessment mechanism includes monitoring, control landmark, intermediate and final assessment. Assessment of knowledge, skills and professional competencies enrolled in credit technology, carried out on 100-point scale with the final result of the conversion in the alphanumeric equivalent. This rating takes into account attendance, level of activity in class, timely and independent execution of all tasks types, the ability to formulate the problem correctly, to find the answers. All educational achievements of students are reflected in the transcript.

Monitoring of knowledge of undergraduates presented more complex forms and methods, required from students the ability to analyze, identify common features compared objects, finding the differences, be analytical reviews, catalogs. Thus, the study of the discipline "Organization and planning of scientific research" by accredited EP the lesson "Working with the scientific and technical literature» undergraduates must be the example of various scientific publications (review papers, theses, abstracts) to evaluate how to use the reference unit and citations and make a survey on the topic "New transport technologies".

To appeal the results of academic achievement of students at the university, creates the appeal commission.

In order to improve the quality and efficiency of the organization of educational process, control the degree of independence of performance of learners theses (projects), Master's theses, as well as improve their self-discipline and respect for the intellectual property rights of all work tested for plagiarism.

During the interview with the students they have been suggested, EP management should focus on conducting practice-sessions.

feedback study teaching quality classic tool (content, forms, methods) is survey students.

Feedback forms are also meeting with the rector of the university management, the dean and the head of the department.

### **Analytical part**

During the visit, the experts EEC established that no conditions for inclusive education in the educational process are not actively used various modern with multimedia equipment, including interactive forms and methods of employment.

There is a low proportion of their research in the field of teaching disciplines EP and demonstrated the presence of feedback on the use of different teaching methods and assessment of learning outcomes system.

Questioning of students conducted during the visit EEC IAAR, showed that the level of teaching quality "fully satisfied" - 66.7%, "partly satisfied" - 20% "not satisfied" - 7.4% of students. Full satisfaction of justice exams and certification expressed 74.1%, and conducted tests and examinations - 77% of students.

### **Recommendations of the EEC**

- 1 Ensure that the conditions for inclusive education.
- 2 Continue to work on creation of teaching materials for faculty teaching disciplines.
- 3 Increase the share of employment conducted with the use of interactive and innovative teaching methods.

*EEC conclusions on criteria for the EP 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technology", "Biotechnology", 5B071600 / 6M071600 - "Instrument-making": strong - 0, satisfactory - 5 for improvement - 5.*



## 6.6. "Students' Standard"

### **Evidence**

Manual EP demonstrates the policy of creating a contingent of students from admission to EP output and ensures the transparency of its procedures. For the formation of a contingent of students, staff of the department spends most professional work in the secondary schools of the city of Almaty and in other regions of Kazakhstan.

Additional conditions to the applicants high school does not show.

Despite the ongoing university and professional work of the department of special low set observed on BD 5B071600 - "Instrument-making". In the 2016/2017 and 2017/2018 academic years a set of students to the first year did not take place and the total contingent of students to this educational program is 2 people.

For newly admitted to study at the University of planned organizational weeks, during which students get acquainted with the university structure, meet with the guidance of faculty and special departments, advisors.

University are working on providing an opportunity for academic mobility of students, developed "Regulations on Credit Transfer ECTS by type in the Central Asian University"

However, in 2016/2017 and 2017/2018 academic years, in the framework of academic mobility, students of accredited educational programs do not traveled to study in other universities.

Passage of graduate scientific training is realized on the basis of contracts and agreements with foreign universities. During the period analyzed in the framework of external academic mobility passed scientific training 2 undergraduates in the Russian Federation in St. Petersburg. To advise graduate students, lectures, master-classes at the Department of "Basic Sciences and the oil and gas industry" was invited professor Abozau AD (Kyrgyz State Technical University. A. Razakova, Bishkek).

EP leadership created the conditions for studying quality of practice, the University entered into a contract with companies for all types of practices.

University Guide provides representation of students in student government, the committee on youth affairs.

Successfully solved issues of social protection of students. Studying on a contract basis are able to get discounts on the results of examinations in connection with the material and family situation. Students who receive the results of UNT 80 points, can get discounts for paying tuition fees of up to 50%. In this case, the main contract between the university students and a supplementary agreement concluded.

In order to ensure the employability of graduates is conducted at the University Annual Teaching scientific and practical conference "Education, employment, career" with graduates of the faculty and employers, the Department informs the graduates on the labor market in the city and the region, provides graduates participate in the general university, the city and regional job fairs and et al.

Student scientific society of the department "Fundamental Sciences and the oil and gas industry" - "Transport" includes in its membership of students accredited EP.

Topics Develop training initiatives correspond to the direction of scientific research of the department - "Technical and economic bases of the organization of transport and logistics centers in the regions of Kazakhstan" - reg. No.0117RKI0019 National Center for STI RK; "Research and development of the electronic manual processes and devices", "New principles of estimation hardness mass parts of machines quality control", "Process Intensification magnesium isolation of reservoir waters hydrocarbon deposits."

Students research result are scientific articles, all the projects and term papers and theses, acts implementations.

Students accredited EP participate in the Olympiads, participate in university and republican competitions of scientific works.

Organization of extra-curricular activities of the university is carried out through creative circles, clubs and interest groups. Educational work is conducted in the following areas: conducting traditional activities; civil-patriotic education; prevention of crimes; healthy lifestyle (HLS); spiritual and moral education; environmental education; aesthetic education, and others.

### **Analytical part**

During the visit the experts at EEC this standard is established that the University is not cooperating with the national centers of the European network of national information centers on academic recognition and mobility with a view to ensuring a comparable recognition of qualifications.

By accredited EP for the period for undergraduate lack of academic mobility of students, which requires the attention of the EP management. No actual results to attract a number of students of foreign nationals, although some work in this direction is carried out.

There is the presence of small-size groups, the educational program 5B071600 - "Instrument" contingent of students for the entire period of study is 2 people, on the EP 6M071600 - "Instrument" - studying there.

Students express their full satisfaction the availability of academic counseling (76.2%); Access to health care (59.5%); availability library resources (76.2%); existing training resources (78.6%); general curriculum quality (76.2%); relationship between student and teacher (88.1%).

### **Strengths / best practice**

University policy demonstrates the formation of a contingent of students from admission to release and ensures transparency of its procedures.

### **Recommendations of the EEC**

1 Cooperate with the national centers of the European network of national information centers on academic recognition and mobility.

2 Provide an opportunity for external and internal mobility of students.

***EEC conclusions on criteria for the EP 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies": strong - 1, satisfactory - 7 for improvement - 4.***

***EEC Conclusions on criteria for EP 5B070100 / 6M070100 - "Biotechnology", 5B071600 / 6M071600 - "Instrument": strong - 0, satisfactory - 7 for improvement - 5.***

### 6.7. Standard "Teaching Staff"

#### **Evidence of the**

Implementation of educational programs 5B070100 / 6M070100 - "Biotechnology", 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies", 5B071600 / 6M071600 - "Instrument-making" provides the department of "Basic Sciences and the oil and gas industry" faculty "Innovative technologies and techniques".

State special chair comprises 39 people, including 9 doctors (23%), 16 candidates (41%), 5 PhD (13%) and 9 masters (23%). Manual EP demonstrates the use of high school personnel policy according to the strategy at CAU 2017-2021 years for teaching staff involved in implementing EP. Recruitment is based on the analysis of the educational needs of the program, the results of which announced a contest for the vacant positions. Assessment of competence of teachers at the university to match the post held by the passage of full-time employees competitive replacement of posts of the faculty and certification in accordance with the requirements of the tender committee and in accordance with the current legislation of RK.

The main provisions of the personnel policy of the University are the appropriate types of qualifying characteristics for the approved order of the MES employees of educational institutions, having a higher or postgraduate education in relevant specialties, as well as competence and competitiveness. qualitative and quantitative composition of the teaching staff

figures confirm the presence of human capacity needed for the implementation of accredited educational programs.

To improve the quality of teaching, ensuring a close relationship with the production of the learning process involved professionals with experience in the relevant industries.

So teachers with practical experience, conducting classes in the subject "Fundamentals of Technical Operations and Technology" Article. teacher Ryskulbekov L. (EP 5B071300 "Transport, transport equipment and technologies"), on the subject "Fundamentals of automatic control theory" - Art. teacher Zheksembayev EK (EP 5B071200 "Engineering").

Recruitment, registration of admission, transfer and dismissal, preparation of documents for approval to the office employees engaged in Human Resources. Workflow associated with the teaching staff (private affairs, employment records, orders, regulations, etc.) are systematically updated as necessary.

Confirmation of the competence of teachers in favor the efficiency and quality of teaching, the university estimated through open training sessions, reciprocal attendance of the classes, as well as conducting the survey "Teacher of the eyes of the student." The results of these activities serve as a basis for the extension of labor teaching staff contracts, promotion, participation in the annual republican competition "The best teacher of the university".

Teaching staff of department "Fundamental Sciences and the oil and gas industry", has state awards, honors, diplomas for merits in the field of Education.

During the 2014-2017 lecturers in "Basic Sciences and the oil and gas industry", have developed and implemented in the educational process of teaching and 49 training manuals, guidelines, courses, lectures, workshops.

Manual EP ensures the completeness and adequacy of individual work planning teaching staff for all activities, monitoring the effectiveness and efficiency of individual plans, demonstrated evidence of fulfillment of all teachers scheduled load.

Working teaching staff specialties load includes educational, methodical, scientific, organizational and methodological work, enhancing professional competence.

For all disciplines of the department developed educational-methodical complexes.

Manual EP demonstrates mechanisms to promote personal and professional development of teachers and workers. One of the key areas of management of EP is to create favorable conditions for personal and professional development of teaching staff.

Department of "Basic Sciences and the oil and gas industry" together KazSRI IICA conducts research on the basis of a grant for commercializing the results of scientific (or) scientific and technical activities on November 21, 2017 No.428 on "" The organization of the production of machinery for the resource-tillage technologies and fodder ". Funding from the Foundation for Science is 240 mln. KZT. At the expense of CAU to do that, threads allocated 60 mln. KZT.

teaching staff work planning is carried out in accordance with the internal regulations about the "planning of the educational process" and "Regulations on the norms for calculating the amount of educational work carried out by the faculty of the CAU. The annual average load of teaching staff is approved by the Academic Council of the university. On the 2017/2018 academic year it is in the bachelor 750 hours, a master's degree - 650 hours.

### **Analytical part**

During the inspection of this standard is set, that is not described accredited EP EP contribution to the teaching staff in the implementation of the university's development strategy and other strategic documents. Not providing accurate information about opportunities for career growth and professional development of teaching staff EP.

It was also revealed that most of the specialized disciplines EP Biotechnology reads only teacher, Ph.D. Zhaylybay K., and subjects such as "genetic biotechnology", "genetically modified food additives" and "Inorganic and Analytical Chemistry" read all non-core specialist Candidate of Physical and Mathematical Sciences Bulekbayeva A., and such subjects as

"Biochemistry" and "Biotransformation of organic compounds in the genes" - candidate of geological and mineralogical sciences Lukmanova M.

It is necessary to develop measures for the development of academic mobility of teaching staff in the framework of accredited EP.

According to the results of the questionnaire IAAR faculty expressed complete satisfaction with the availability of the university management level - 63%; promoting innovation - 54.3%, the level of stimulation of young specialists to the educational process - 58.7%, the recognition of the potential and abilities of teachers - 54.3%. teaching staff estimates supplied by the work of the university academic mobility - 45.7% and the training of teachers - 54.3%.

#### **Recommendations of the EEC**

1 Develop measures to attract the best foreign and domestic teachers to participate in the educational process and conducting joint research;

2 Take on the organization of academic mobility of teaching staff measures within accredited EP.

3 Management should develop a Regulation on material incentives teaching staff, including scientific publications, the use of ICT and innovative teaching methods.

4 Management is required to bring to Teach EP teaching staff Biotechnology with basic education.

EEC conclusions on criteria for the EP 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies": strong - 0, satisfactory - 5 for improvement - 7.

*EEC Conclusions on criteria for EP 5B070100 / 6M070100 - "Biotechnology", 5B071600 / 6M071600 - "Instrument-making": strong - 0, satisfactory - 3 for improvement - 9.*

#### 6.8. Standard "Educational resources and student support systems"

##### **Evidence of the**

During the EEC experts made sure that the university has the logistical, information and library resources used for the organization of the process of training and education of students and the implementation of the mission, goals and objectives CAU.

An important factor in ensuring the quality of education and guarantee the sustainable development of the university is the constant improvement of material-technical and human resources. The university created the conditions for studying, research, publication of research results.

It operates a system of support for students, medical office work, food area, a gym, a library, a dormitory.

Logistical and social base, located in the operational management CAU is located in Almaty consists of 6 buildings, the total area of 27508m<sup>2</sup> per student training reduced contingent useful area of 13.75 sq.m.

At the University are available all the necessary documents confirming the right to immovable property. In particular: the act of transfer and acceptance of buildings and structures in the operational management. All buildings, which are classes that meet sanitary standards and fire safety requirements and the requirements of the state obligatory standards implemented specialties.

Evaluation of the quality of functioning of the university information system revealed the fullness of AIS «Lotos» teaching materials for the realization of the educational process.

Fund educational, methodical and scientific literature is 520000 copies of books.

In terms of accredited EP library resources of the university are: 5B070100 / 6M070100 - "Biotechnology" 1454 copies, incl. in the official language 145 copies of books; 5B071200 - "Engineering" in 1945 copies, incl. in the official language 185 copies of books;

5B071300 "Transport, transport equipment and technologies" 16411 copies, incl. in the official language in 2131 copies of books;

5B071600 / 6M071600 - "Instrument-making" 1033 copies of books.

The bulk of the funds - 85.5% of educational literature, scientific - 14.2%, supplementary literature - 7.22%. Fund additional literature is represented by official publications, reference and bibliographic publications (specialized dictionaries, encyclopedias), scientific publications, electronic publications, electronic information databases. From 2013 to 2018 the fund of textbooks published by the university teachers is 260 copies, including in the national language - 177 copies.

Scientific Library is a member of the project "Kazakhstan National Electronic Library" [www.kaznet.kz](http://www.kaznet.kz), which entitles the user to receive different types of library services: information search in electronic catalogs; view electronic copies in reading mode; Copy the formation of bookmarks in the books; download the full version in the manner determined by the current legislation of RK. Since February 2012, the National Bank has access to full-text resources of Thomson Reuters «Web of Knowledge» (<http://wokinfo.com>), Springerlink. Access is possible only in the scientific hall (Hall catalogs) library and the computer labs of the University.

CAU library has access to the Digital Library of the publishing house "Lan» ([www.e.lanbook.com](http://www.e.lanbook.com)), plenipotentiary. Directories - Media Review. (Russia) - <http://polpred.com>. Students have the opportunity to work on the Internet, to conduct a literature search on the electronic catalog in the library automation program Kabisov have access to RMEB (Republican Interuniversity electronic library of Kazakhstan), as well as "NARBK" (National Academic Library of the Republic of Kazakhstan), JSC "Republican Scientific technical library "to the multidisciplinary electronic research platform," Motto ", including multidisciplinary and highly specialized database

Purchase of educational, methodical and scientific literature carried out at the request of the Department and in accordance with the literature fund acquisition plan. Information institution ensure compliance with EP, the library contains the necessary materials for training: educational, technical, reference and general literature, a variety of periodicals.

The campus is equipped with free WI-FI.

In general, logistical, information and library resources that are used to organize the process of training and education, are sufficient to fulfill the stated mission, goals and objectives, and meet the requirements of ongoing educational programs. To assess the quality of the material and technical and information resources used in the implementation, EP conducted interviews and surveys of students, teaching staff.

### **Analytical part**

As a result, a visual inspection of the members of the EEC objects material base, it was found that to ensure the educational process accredited university educational program has all the necessary training and material assets. Buildings and facilities of the University meet the sanitary standards and fire safety requirements.

The CAU has 5 computer classes, where there are 250 personal computers. In lecture halls and computer labs installed interactive equipment. There are 18 laboratories specialized audiences, offices, workshops total area of 1752.3 m<sup>2</sup>. In a place with those found in laboratories obsolete equipment, therefore majors accredited BD demand of modern laboratory equipment. According to EP 5B071600 / 6M071600 - "Instrument-making" is practically no laboratory equipment for laboratory classes. Applications for purchase of the equipment of the department has been given.

All disciplines of the department of EP "Basic Sciences and the oil and gas industry," partially or fully provided presentations. Over the past three years, staff of the department was created 19 titles of electronic publications, including electronic textbooks, video lectures and classes video laboratory work.

Theses and master's thesis are checked for plagiarism, which carries a commission set up order of the dean, the result of which is to conclude with the indication of the final evaluation of the originality (originality percentage should not be less than 70).

The fund educational, methodical literature on accredited EP found obsolete literature. In this connection, it is recommended to pay attention to the constant updating of the literature fund.

According to the results of the survey of students of library resource availability are completely satisfied - 85.2%; classrooms, auditoria Educational and methodical board for large groups - 77.8%; rooms for small groups - 75.6%; rest rooms for students - 48.1%; computer classes and Internet resources 56.3%. Existing computer classes are completely satisfied - 58.5%; research laboratories - 51.1%. Ensuring full satisfaction enrolled dormitory is 64.4%.

#### **Recommendations of the EEC**

1 Ensure that the required number of classrooms equipped with modern technical facilities;

2 In order to strengthen the technological support of students and academic staff to update the material and technical base EP through the acquisition of licensed software by accredited majors EP.

3 Ensure that the training equipment used in the learning process by BD similar to the practice of industrial enterprises.

*EEC conclusions on criteria for EP 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies": strong - 0, satisfactory - 5 for improvement - 4.*

*EEC Conclusions on criteria for EP 5B070100 / 6M070100 - "Biotechnology", 5B071600 / 6M071600 - "Instrument-making": strong - 0, satisfactory - 3 for improvement - 6.*

#### 6.9. Standard "Information to the public"

##### **Evidence**

Effective feedback with the students is carried out by - the feedback service on the personal pages of students, teaching staff in the educational portal of the University of AIS «Lotos», where they have access to the academic calendar, the curriculum of the specialty and the formation of the individual curriculum (on disciplines of information and teachers), information resources and databases of the Institute library, educational materials provided by teachers of subjects studied. The results of current, intermediate and final control of the student can be found in your personal account. At the end of the academic period the student receives the full information about the progress on the studied subjects (transcript).

The main channel for informing the public (students, parents, students, graduates and employers) is the official University website.

Defined media for publication - is regional newspapers and television and radio. All publications are informative, fashion, expository nature.

To inform the students of the university foyer placed information boards, posters, displays, banners.

University holds an annual job fair, which allows graduates and employers to make contact for the selection of the necessary staff.

##### **Analytical part**

EEC notes the lack of audited financial statements on the website of the University.

Analysis of the information provided on the site, showed that the results of the university is not reflected in full. Not enough information is reflected on the expected learning outcomes for EP, on teaching, assessment procedures, of the educational opportunities provided to students.

Evaluation of satisfaction with the information about the activities of the university, and the specifics of the implementation of the EP is held annually by means of questionnaires and interviews with stakeholders.

Questioning of students conducted during the visit EEC IAAR, showed that satisfaction inform students about the courses, EP, and academic degrees of "fully satisfied" - 68.9%, "partly satisfied" - 20.7%, "not satisfied" - 4 4% enrolled.

#### **Recommendations of the EEC**

1 Carry out the work on updating the information on the website of the University in terms of ongoing EP, with specific learning outcomes, cooperation with research and educational organizations, business partners, the social partners and organizations, etc.

2 Increase public awareness of the results of the activities of the university and educational programs.

3 Add the official website of the University's financial statements as a result of an external audit.

4 Add information about graduate employment opportunities.

**EEC conclusions on criteria for the EP 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies", 5B070100 / 6M070100 - "Biotechnology", 5B071600 / 6M071600 - "Instrument": strong - 0 satisfactory - 6 for improvement - 7.**

#### 6.10. Standard "standards in the context of individual specialties"

##### **Evidence**

The educational process in the accredited programs of undergraduate and graduate programs carried out by the annual updating of teaching materials, updating the theme theses and master's theses, as well as the introduction of new elective courses based on employers' recommendations. Students have access to all library resources, which are updated and supplemented annually.

Monitoring the impact of innovation in the learning process to learning outcomes is carried out at different levels. At the department - through a system of training sessions reciprocal attendances, discussions on methodological seminars. To improve the quality of the educational process for students organized guest lectures, including foreign teachers.

In order to familiarize students with the professional environment and current issues in the field of specialization, as well as the acquisition of practical skills through theoretical training education program provided various kinds of practices: training, production, pre-diploma. All kinds of practices are carried out in accordance with the standard, curriculum, according to the academic calendar and methodically provided. Students practice in accordance with the Higher Education Rector's order, which indicates the base of the practice, the timing of its passage and practice managers from the institution. At the end of practice students pass the reports on the approved form.

University annually organizes and conducts job fairs. As a result of this preliminary work before the students get an idea of the release of the labor market, current job openings and requirements to them.

##### **Analytical part**

Based on the results of the analysis, EEC members came to the following conclusion.

Not traced conduct certain activities or entire courses at specialized enterprises, as well as seminars for solving practical problems of relevance to businesses. It was found that a number of specialized disciplines specialty Biotechnology is no full-time teaching staff with long experience of working full-time employee in enterprises in the field of biotechnology.

It does not provide information about the presence of branches of chairs for them practice oriented employment with employer involvement in the educational process.

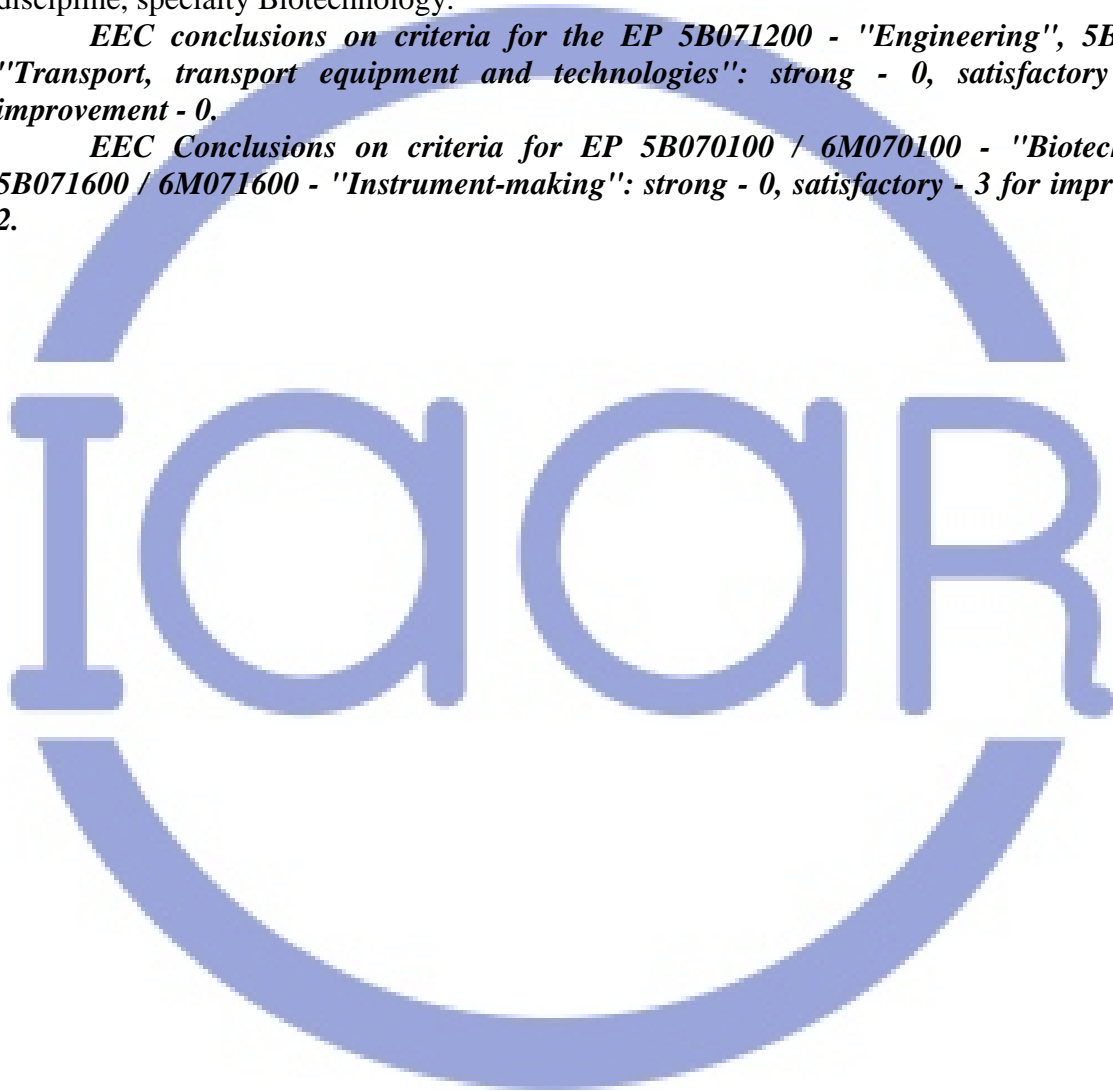
Developed leadership graduates EP models are descriptive, not specified in the objectives and learning outcomes. The graduates of the model not represented by the competence that the trainee must master after graduation. In this connection, the Commission recommends the development of a matrix of competencies in each discipline in accordance with the objectives of each EP.

#### **Recommendations of the EEC**

- 1 Develop training plans for teaching staff-based enterprises.
- 2 Consider the possibility of opening branches of the department at the enterprises.
- 3 Systematic analysis of labor market of accredited professions.
- 4 It is recommended to increase the percentage of qualified full-time faculty with long experience in full-time employee in enterprises in the field of biotechnology reading specialized discipline, specialty Biotechnology.

*EEC conclusions on criteria for the EP 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies": strong - 0, satisfactory - 5 for improvement - 0.*

*EEC Conclusions on criteria for EP 5B070100 / 6M070100 - "Biotechnology", 5B071600 / 6M071600 - "Instrument-making": strong - 0, satisfactory - 3 for improvement - 2.*





## **VII SUMMARY Strengths / BEST PRACTICES**

**Strengths / best practice** for EP 5B070100 / 6M070100 - "Biotechnology", 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies", 5B071600 / 6M071600 - "Instrument-making":

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

The complexity of EP is clearly defined in the Kazakhstan credits and ECTS.

According to "learn" standard:

University policy demonstrates the formation of a contingent of students from admission to release and ensures transparency of its procedures.



## VIII REVIEW OF RECOMMENDATIONS TO IMPROVE QUALITY

In order to further develop and improve the activities of the University to implement the accredited EP based on the findings of the Report on the results of the IAAR EEC recommends:

### **By the standards of "Management of the educational program":**

1 Systematic positioning EP followed by the application of its results in the development of EP Development Plan.

2 Taking into account the changes in the external environmental factors to implement corrective and preventive actions aimed at continuous improvement of BD, including by amending the development plan EP.

3 Manual EP conduct systematic work on the identification and formulation of individuality, uniqueness of educational programs in accordance with the national development priorities of the country's economy.

4 Carry out regular review of the development plan of the educational program and monitoring its implementation.

5 Activate the work of filling the site of the University of information about the content and implementation of the EP instruments.

6 Analyze the risk management system of strategic university management.

### **According to the standard "Information management and reporting":**

1 Increase public awareness of the results of the Central Asian University;

2 Place an online university information on teaching staffs in the context of personnel;

3 Place an online information about ongoing education at the university level for training programs;

4 Provide accommodation on the university's website for information on the results of an external evaluation of the university.

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

1 Refresh purpose of realization of educational programs 5B070100 / 6M070100 - "Biotechnology", 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies", 5B071600 / 6M071600 - "Instrument-making" to ensure their compliance with the anticipated labor market needs, realistically achievable learning outcomes, taking into account the resource base and personnel potential of the university.

2 Refresh models alumni-specific paths implemented in educational programs 5B070100 / 6M070100 - "Biotechnology", 5B071200 - "Engineering", 5B071300 - "Transport, transport equipment and technologies", 5B071600 / 6M071600 - "Instrument--making".

3 When forming cycle majors accredited by EP in practice-use switch disciplines as a priority.

4 Involve the students to work together with the teachers of the department of special research.

5 To carry out the work on the implementation of joint educational programs with foreign educational institutions.

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

1 On an ongoing basis to monitor the results of the implementation of EP exposure to changes in the labor market, the external environment.

2 Activate the participation of students in the procedures for continuous monitoring and periodic evaluation of EP by incorporating them in a collegial body of the University.

3 Promptly inform employers, learners and other stakeholders about changes in the EP.

### **According to the standard "Student oriented learning, teaching and assessment of progress":**

1 Ensure that the conditions for inclusive education.

2 Continue to work on creation of teaching materials for faculty teaching disciplines.

3 Increase the share of employment conducted with the use of interactive and innovative teaching methods.

**According to "learn" standard:**

1 Cooperate with the national centers of the European network of national information centers on academic recognition and mobility.

2 Provide an opportunity for external and internal mobility of students.

**According to the standard "Teaching Staff":**

1 Develop measures to attract the best foreign and domestic teachers to participate in the educational process and conducting joint research;

2 Take on the organization of academic mobility of teaching staff measures within accredited EP.

3 Management should develop a Regulation on material incentives teaching staff, including scientific publications, the use of ICT and innovative teaching methods.

4 Management shall attract to classes conduction the teaching staff Biotechnology with basic education on EP.

**According to the standard "Educational resources and student support system":**

1 Ensure that the required number of classrooms equipped with modern technical facilities;

2 In order to strengthen the technological support of students and academic staff to update the material and technical base EP through the acquisition of licensed software by accredited majors EP.

3 Ensure that the training equipment used in the learning process by BD similar to the practice of industrial enterprises.

**According to the "Public awareness" standard:**

1 Carry out the work on updating the information on the website of the University in terms of ongoing EP, with specific learning outcomes, cooperation with research and educational organizations, business partners, the social partners and organizations, etc.

2 Increase public awareness of the results of the activities of the university and educational programs.

3 Add the official website of the University's financial statements as a result of an external audit.

4 Add information about graduate employment opportunities.

**According to the standard "Standards in the context of individual specialties":**

1 Develop training plans for teaching staff-based enterprises.

2 Consider the possibility of opening branches of the department at the enterprises.

3 Systematic analysis of labor market of accredited professions.

4 It is recommended to increase the percentage of qualified full-time faculty with long experience in full-time employee in enterprises in the field of biotechnology reading specialized discipline, specialty Biotechnology.

**Appendix 1. Scorecard "PARAMETERS BY PROFILE" (5B071300-Transport, transport equipment and technology, 5B071200-Engineering)**

| No.  | No. | Criteria for evaluation   | The position of the organization of education |              |                       |                  |
|--|-----|---|---|--------------|-----------------------|------------------|
|  |     |   | strong  | Satisfactory | It involves improving | DISSATISFIED-ing |
| <b>standard "Educational Program Management"</b> |     |   |   |              |                       |                  |
| 1  | 1.  | University shall have published policy of quality assurance.  |   | +            |                       |                  |
| 2  | 2.  | Policy of quality assurance shall reflect connection between research work, teaching and education.   |   | +            |                       |                  |
| 3  | 3.  | University shall indicate culture development of quality assurance including in relation Educational Program.   |   | +            |                       |                  |
| 4  | 4.  | Commitment to quality assurance should apply to all activities performed by contractors and partners (outsourcing), including the implementation of joint / double diploma education and academic mobility.   |   |              | +                     |                  |
| 5  | 5.  | Manual EP provides transparency Subdivision development plan based on an analysis of its functioning, the real position of the university and the orientation of its activities to meet the needs of the state, employers, stakeholders and students.   |   | +            |                       |                  |
| 6  | 6.  | Manual EP shows the functioning of the mechanisms of formation and regular review of the development plan for EP and monitoring its implementation, assessing the achievement of learning objectives, meet the needs of learners, employers and the public, decision-making, aimed at continuous improvement of EP. |   | +            |                       |                  |
| 7  | 7.  | Educational Program Management shall attract representatives of interest groups including employers, students and teaching staff to formation of development plan of the Educational Program.   |   | +            |                       |                  |
| 8  | 8.  | Manual EP must demonstrate the individuality and uniqueness of the Plan of Subdivision, its consistency with national development priorities and strategies of the organization of education.   |   | +            |                       |                  |
| 9  | 9.  | The university must demonstrate a clear definition of those responsible for the business processes within the EP, a clear distribution of duties of personnel, differentiation collegiate organs.   |   |              | +                     |                  |
| 10   | 10. | Manual EP must provide evidence of the transparency of the educational program of the control system.   |   | +            |                       |                  |
| 11.  | 11. | Manual EP must demonstrate the successful functioning of the internal quality assurance system EP, including its design, management and monitoring of their improvement, adoption of evidence-based decisions.  |   | +            |                       |                  |

|  |     |   |  |  |           |          |
|--|-----|---|--|--|-----------|----------|
| 12   | 12. | Manual EP must implement risk management.   |  |  | +         |          |
| 13   | 13. | Manual EP should ensure the participation of representatives of the interested parties (employers, faculty, students) as part of peer education program's management bodies, as well as their representation in decision-making on the management of the educational program. |  |  | +         |          |
| 14   | 14. | The university must demonstrate innovation management within the EP, including the analysis and implementation of innovative proposals.   |  |  | +         |          |
| 15   | 15. | Manual EP must show proof of openness and accessibility for students, faculty, employers and other stakeholders.  |  |  | +         |          |
| 16   | 16. | Manual EP must be trained in the management of education programs.  |  |  |           | +        |
| 17   | 17. | Manual EP should strive to ensure that the progress made since the last external quality assurance procedures are taken into account when preparing for the next procedure.   |  |  |           | +        |
| <b>Total standard</b>                                  |     |   |  |  | <b>12</b> | <b>5</b> |
| <b>standard "Information management and reporting"</b> |     |   |  |  |           |          |
| 18   | 1.  | University should ensure the functioning of data collection, analysis and management of information on the basis of modern information and communication technology and software tools.   |  |  | +         |          |
| 19   | 2.  | Manual EP should demonstrate the use of the system treated, adequate information to improve the internal quality assurance system.  |  |  | +         |          |
| 20   | 3.  | As part of the EP should be a system of regular reporting, reflecting all levels of the structure, including the assessment of the effectiveness and efficiency of the units and departments, scientific research.  |  |  | +         |          |
| 21   | 4.  | The institution must establish the frequency, forms and methods of evaluation of EP management activities of collegial bodies and departments, senior management, the implementation of scientific projects.  |  |  |           | +        |
| 22   | 5.  | The university must demonstrate determination of the order and the protection of information, including the identification of those responsible for the accuracy and timeliness of the information and analysis of data.  |  |  | +         |          |
| 23   | 6.  | An important factor is the involvement of students, staff and faculty in the process of collecting and analyzing information, as well as the adoption of the decisions based on them.   |  |  | +         |          |
| 24   | 7.  | Manual EP must demonstrate that the communication mechanism with the students, employees and other stakeholders, including the availability of conflict resolution mechanisms.  |  |  | +         |          |
| 25   | 8.  | University should provide a measure of the degree of satisfaction of the needs of faculty, staff and students within the framework of EP and demonstrate proof of address identified deficiencies.  |  |  | +         |          |
| 26   | 9.  | The university must evaluate the effectiveness and efficiency of operations, including in the context of EP.  |  |  |           | +        |

|  |     |   |   |  |           |          |
|--|-----|---|---|--|-----------|----------|
|  |     | Information collected and analyzed institution, must take into account:   |   |  |           |          |
| 27   | 10. | key performance indicators;   |   |  | +         |          |
| 28   | 11. | dynamics contingent of students in the context of forms and types;  |   |  | +         |          |
| 29   | 12. | level of performance, achievements of students and deductions;  |   |  | +         |          |
| thir ty  | 13. | satisfaction of students and the quality of implementation of the EP training in high school;   |   |  | +         |          |
| 31   | 14. | the availability of educational resources and support systems for students;   |   |  | +         |          |
| 32   | 15. | employment and career development of graduates.   |   |  |           | +        |
| 33   | 16. | Students, staff and faculty need to document their consent to the processing of personal data.  |   |  |           | +        |
| 34   | 17. | Manual EP must promote all the necessary information in the relevant fields of science.   |   |  |           | +        |
| <b>Total standard</b>  |     |   |   |  | <b>11</b> | <b>6</b> |
| <b>standard "Development and approval of educational programs"</b> |     |   |   |  |           |          |
| 35   | 1.  | University must define and document procedures for the development and approval of EP at the institutional level.                                   |   |  | +         |          |
| 36   | 2.  | Manual EP should ensure that developed EP stated objectives, including the expected learning outcomes.  |   |  | +         |          |
| 37   | 3.  | Manual EP should ensure that the developed models EP graduate describing learning outcomes and personal qualities.                                  |   |  | +         |          |
| 38   | 4.  | Manual EP must demonstrate conduct external examinations EP.  |   |  | +         |          |
| 39   | 5.  | The qualification obtained upon completion of EP, should be clearly defined, explained and meet a certain level of NSC.                             |   |  | +         |          |
| 40   | 6.  | Manual EP should determine the impact of disciplines and professional practices on the formation of learning outcomes.                              |   |  | +         |          |
| 41   | 7.  | An important factor is the ability to prepare students for professional certification.  |   |  |           | +        |
| 42   | 8.  | Manual EP must provide evidence of the participation of students, faculty, and other stakeholders in the development of EP, ensuring their quality. |   |  | +         |          |
| 43   | 9.  | The complexity of EP should be clearly defined in the Kazakhstan credits and ECTS.  | + |  |           |          |
| 44   | 10. | Manual EP should ensure that the content of academic disciplines and the level of learning outcomes of study (bachelor, master, doctorate).         |   |  | +         |          |

|  |     |  |          |          |          |  |
|--|-----|--|----------|----------|----------|--|
| 45   | 11. | In the structure of EP should provide a variety of activities related to learning outcomes.  |          | +        |          |  |
| 46   | 12. | An important factor is the presence of the joint EP with foreign educational institutions.   |          |          | +        |  |
| <b>Total standard</b>  |     |  | <b>1</b> | <b>9</b> | <b>2</b> |  |
| <b>standard "Permanent monitoring and periodic evaluation of educational programs"</b> |     |  |          |          |          |  |
| 47   | 1.  | The university should conduct monitoring and periodic assessment of the EP in order to achieve the goals and meet the needs of students and society. The results of these processes are aimed at continuous improvement of the EP. |          | +        |          |  |
|  |     | Monitoring and periodic assessment of EP should consider:  |          |          |          |  |
| 48   | 2.  | content of the programs in the light of the latest scientific achievements in a specific discipline to ensure the relevance of taught discipline;  |          | +        |          |  |
| 49   | 3.  | changing needs of society and the professional environment;  |          | +        |          |  |
| 50   | 4.  | load, performance and release of students;   |          | +        |          |  |
| 51   | 5.  | effectiveness evaluation procedures of students;   |          | +        |          |  |
| 52   | 6.  | expectations, needs and satisfaction of students training for EP;  |          | +        |          |  |
| 53   | 7.  | educational environment and support services and their compliance with the objectives of EP.   |          | +        |          |  |
| 54   | 8.  | The institution and the management EP must provide evidence of the participation of students, employers and other stakeholders in the revision of the EP.  |          |          | +        |  |
| 55   | 9.  | All interested persons should be informed about any planned or action taken in respect of EP. All changes made to the EP, should be published.   |          | +        |          |  |
| 56   | 10. | Manual EP should ensure the review the content and structure of the EP, taking into account changes in the labor market, employers' requirements and social demands of society.  |          | +        |          |  |
| <b>Total standard</b>  |     |  |          | <b>9</b> | <b>1</b> |  |
| <b>standard "Student oriented learning, teaching and assessment of progress"</b>       |     |  |          |          |          |  |
| 57   | 1.  | Manual EP should ensure respect and consideration for the different groups of students and their needs, providing them with flexible learning paths.   |          | +        |          |  |
| 58   | 2.  | Manual EP should ensure that the use of various forms and methods of teaching and learning.  |          | +        |          |  |
| 59   | 3.  | An important factor is the availability of our own research in the field of educational disciplines teaching methodology EP.   |          |          | +        |  |
| 60   | 4.  | Manual EP must demonstrate the existence of a feedback system for the use of different teaching methods and assessment of learning outcomes.   |          |          | +        |  |

|                            |     |   |   |          |          |  |
|----------------------------|-----|---|---|----------|----------|--|
| 61                         | 5.  | Manual EP should show support for the autonomy of the students, while guidance and assistance from the instructor.  |   | +        |          |  |
| 62                         | 6.  | Manual EP must demonstrate that they have procedures for responding to complaints from students.  |   | +        |          |  |
| 63                         | 7.  | The university should ensure consistency, transparency and objectivity of the evaluation mechanism of learning outcomes for each EP, including an appeal.   |   | +        |          |  |
| 64                         | 8.  | University must ensure that the learning outcomes assessment procedures EP students planned learning outcomes and program objectives. Criteria and evaluation methods in the framework of EP must be published in advance.  |   | +        |          |  |
| 65                         | 9.  | The university should be defined mechanisms for the development of each graduate EP learning outcomes and ensure the completeness of their formation.   |   |          | +        |  |
| 66                         | 10. | Evaluating a person must possess modern methods of assessment of learning outcomes and regularly improve their qualifications in this field.  |   |          | +        |  |
| <b>Total standard</b>      |     |   |   | <b>6</b> | <b>4</b> |  |
| <b>standard "Students"</b> |     |   |   |          |          |  |
| 67                         | 1.  | The university must demonstrate a policy of formation of a contingent of students from admission to the issue and to ensure the transparency of its procedures. Procedures governing life cycle enrolled (from receipt to completion) must be determined approved published.                                  | + |          |          |  |
| 68                         | 2.  | Manual EP must demonstrate conduct special adaptation and support programs for newly admitted and foreign students.   |   | +        |          |  |
| 69                         | 3.  | The university must demonstrate compliance with the actions of the Lisbon Recognition Convention.   |   | +        |          |  |
| 70                         | 4.  | The university should cooperate with other organizations and national education centers "of the European Network of National Information Centers on academic recognition and mobility / National Academic Recognition Information Centers» ENIC / NARIC to ensure a comparable recognition of qualifications. |   | +        |          |  |
| 71                         | 5.  | Manual EP must demonstrate the existence and application of the mechanism for the recognition of the results of academic mobility of students, as well as additional results of formal and informal learning.   |   | +        |          |  |
| 72                         | 6.  | University should provide an opportunity for external and internal mobility of students EP, as well as to assist them in obtaining external grants for training.  |   |          | +        |  |
| 73                         | 7.  | Manual EP should make the maximum amount of effort to ensure students practice sites, promote the employment of graduates maintain contact with them.   |   |          | +        |  |
| 74                         | 8.  | The university should provide graduates EP documents confirming the qualification, including learning outcomes achieved and the context, content and status of education and evidence of its completion.  |   | +        |          |  |
| 75                         | 9.  | An important factor is the placement and monitoring of professional activity of graduates EP.   |   |          | +        |  |



|   |     |   |          |          |          |  |
|---|-----|---|----------|----------|----------|--|
| 76  | 10. | Manual EP should actively encourage students to self-education and development is the main program (extracurricular activities).  |          | +        |          |  |
| 77  | 11. | An important factor is the presence of existing Association / alumni association.   |          |          | +        |  |
| 78  | 12. | An important factor is the availability of a mechanism to support gifted students.  |          | +        |          |  |
| <b>Total standard</b>   |     |   | <b>1</b> | <b>7</b> | <b>4</b> |  |
| <b>standard "Faculty"</b>   |     |   |          |          |          |  |
| 79  | 1.  | University must have an objective and transparent personnel policy, including recruitment, professional growth and development, ensuring the professional competence of all staff.  |          | +        |          |  |
| 80  | 2.  | The university must demonstrate compliance with the human resource capacity of the university teaching staff development strategy and specific EP.  |          |          | +        |  |
| 81  | 3.  | Manual EP should demonstrate an awareness of responsibility for its employees and providing them favorable conditions of work.  |          | +        |          |  |
| 82  | 4.  | Manual EP must demonstrate the changing role of the teacher in connection with the transition to student oriented education.  |          | +        |          |  |
| 83  | 5.  | Institution must determine the contribution to the implementation of teaching staff EP university development strategy, and others. Strategic documents.  |          |          | +        |  |
| 84  | 6.  | The university should provide opportunities for career growth and professional development of teaching staff EP.  |          |          | +        |  |
| 85  | 7.  | Manual EP should involve teaching practices of the trade.   |          |          | +        |  |
| 86  | 8.  | Manual EP should ensure that concerted action on the development of young teachers.   |          |          | +        |  |
| 87  | 9.  | The university must demonstrate motivation for professional and personal development of teachers EP, including the promotion of the integration of scientific and educational activities, and the use of innovative teaching methods.                                   |          | +        |          |  |
| 88  | 10. | An important factor is the use of an active teaching staff information and communication technologies in the educational process (e.g., on-line training, e-portfolio MEP et al.).  |          |          | +        |  |
| 89  | 11. | An important factor is the development of academic mobility in the framework of the EP, to attract the best foreign and domestic lecturers.   |          |          | +        |  |
| 90  | 12. | An important factor is the involvement of teaching staff EP to society (teaching staff role in the education system, in the development of science in the region, creating a cultural environment, participation in exhibitions, art contests, charity programs, etc.). |          | +        |          |  |
| <b>Total standard</b>   |     |   |          | <b>5</b> | <b>7</b> |  |
| <b>Standard "Educational resources and student support systems"</b> |     |   |          |          |          |  |

|   |    |  |  |          |          |  |
|---|----|--|--|----------|----------|--|
| 91  | 1. | Manual EP must demonstrate sufficient financial and technical resources and infrastructure.  |  |          | +        |  |
| 92  | 2. | Manual EP must demonstrate that procedures to support different groups of students, including information and counseling.  |  | +        |          |  |
|   |    | Manual EP must demonstrate compliance with the specifics of information resources EP, including compliance with:   |  |          |          |  |
| 93  | 3. | technological support for students and teaching staff in accordance with the educational programs (eg, online training, simulation, database, data analysis program);                        |  |          | +        |  |
| 94  | 4. | library resources, including educational fund, methodical and scientific literature in general, basic and majors on paper and electronic media, periodicals, access to scientific databases; |  | +        |          |  |
| 95  | 5. | examination of the results of R&D, final papers, theses for plagiarism;  |  |          | +        |  |
| 96  | 6. | WI-FI functioning on the territory of the organization of education.   |  | +        |          |  |
| 97  | 7. | The university should strive to ensure that the training equipment and software tools used to develop the EP, were similar to those used in their respective industries.                     |  |          | +        |  |
| 98  | 8. | The institution shall ensure compliance with safety requirements in the learning process.  |  | +        |          |  |
| 99  | 9. | The university should strive to take into account the needs of different groups of students in the context of EP (adults, workers, foreign students, and students with disabilities).        |  | +        |          |  |
| <b>Total standard</b>                       |    |  |  | <b>5</b> | <b>4</b> |  |
| <b>Standard "Information to the public"</b> |    |  |  |          |          |  |
|   |    | Published by the university as part of EP information must be accurate, objective, relevant and should include:  |  |          |          |  |
| 100   | 1. | implemented the program, with an indication of the expected learning outcomes;   |  | +        |          |  |
| 101   | 2. | information about the possibility of giving a qualification at the end of EP;  |  | +        |          |  |
| 102   | 3. | information about teaching, learning, assessment procedures;   |  | +        |          |  |
| 103   | 4. | information on the passing scores and educational opportunities provided to students;  |  | +        |          |  |
| 104   | 5. | information on graduate employment opportunities.  |  | +        |          |  |
| 105   | 6. | Manual EP should use a variety of methods of disseminating information (including media, web resources, information networks, etc..) To inform the public and interested parties.            |  |          | +        |  |
| 106   | 7. | Public awareness should provide support and clarification of national programs for the country's development and of higher and postgraduate education.                                       |  |          | +        |  |
| 107   | 8. | The university is required to publish on their own web resource audited financial statements.  |  |          | +        |  |
| 108   | 9. | The university must demonstrate reflection on a web resource of information that characterizes the university as a whole and in the EP section.  |  |          | +        |  |

|   |     |  |          |           |           |          |
|---|-----|--|----------|-----------|-----------|----------|
| 109   | 10. | An important factor is the availability of adequate and objective information about the teaching staff EP, in the context of the staff.  |          |           | +         |          |
| 110   | 11/ | An important factor is public awareness of cooperation and interaction with partners in the EP, including research / consulting organizations, business partners, the social partners and education institutions.  |          |           | +         |          |
| 111   | 12. | University must post information and links to external resources of the external evaluation procedures.  |          |           | +         |          |
| 112   | 13. | An important factor is the participation of the University and EP implemented in a variety of procedures for external evaluation.  |          |           | +         |          |
| <b>Total standard</b>                             |     |  |          |           | <b>6</b>  | <b>7</b> |
| <b>Standards sectional individual specialties</b> |     |  |          |           |           |          |
| <b>Engineering and technology</b>                 |     |  |          |           |           |          |
|   |     | <i>Educational programs in areas of "engineering and technology", such as "Transport, transport equipment and technology", "Engineering", etc., must meet the following requirements:</i>  |          |           |           |          |
| 113   | 1.  | In order to familiarize students with the professional environment and current issues in the field of specialization, as well as for the acquisition of skills through theoretical training education program should include subjects and activities aimed at obtaining practical experience and skills for the whole profession and majors in particular t.ch :<br>- excursions to the enterprises in the area of specialization (factories, workshops, research institutes, laboratories, educational and experimental farms, etc.)<br>- carrying out specific studies or entire disciplines of specialization enterprise,<br>- seminars for solving practical problems of relevance to companies in the field of specialization, etc. |          |           | +         |          |
| 114   | 2.  | The teaching staff involved in the education program should include full-time teachers with a long experience of working full-time employee in the enterprises in the area of specialization education program.  |          |           | +         |          |
| 115   | 3.  | The contents of all disciplines EP must in one way or another based and include a clear link with the content of the fundamental natural sciences, such as mathematics, chemistry, physics.  |          |           | +         |          |
| 116   | 4.  | Manual EP should provide measures to enhance practical training in the field of specialization.  |          |           | +         |          |
| 117   | 5.  | Manual EP should provide training for students in the application of modern information technologies.  |          |           | +         |          |
| <b>Total standard</b>                             |     |  |          |           | <b>5</b>  |          |
| <b>TOTAL</b>                                      |     |  | <b>2</b> | <b>75</b> | <b>40</b> |          |

**Appendix 2. Scorecard "SPECIALIZED PROFILE PARAMETERS" (5B071600, instrumentation, 6M071600, instrumentation, 5B070100-Biotechnology, 6M070100-Biotechnology)**

| Number   | Number | Criteria for evaluation   | The position of the organization of education |              |                       |                  |
|--|--------|---|---|--------------|-----------------------|------------------|
|  |        |   | strong  | Satisfactory | It involves improving | DISSATISFIED-ing |
| <b>standard "Educational Program Management"</b> |        |   |   |              |                       |                  |
| 1  | 18.    | University shall have published policy of quality assurance.  |   | +            |                       |                  |
| 2  | 19.    | Policy of quality assurance shall reflect connection between research work, teaching and education.   |   | +            |                       |                  |
| 3  | 20.    | University shall indicate culture development of quality assurance including in relation Educational Program.   |   | +            |                       |                  |
| 4  | 21.    | Commitment to quality assurance should apply to all activities performed by contractors and partners (outsourcing), including the implementation of joint / double diploma education and academic mobility.   |   |              | +                     |                  |
| 5  | 22.    | Manual EP provides transparency Subdivision development plan based on an analysis of its functioning, the real position of the university and the orientation of its activities to meet the needs of the state, employers, stakeholders and students.   |   | +            |                       |                  |
| 6  | 23.    | Manual EP shows the functioning of the mechanisms of formation and regular review of the development plan for EP and monitoring its implementation, assessing the achievement of learning objectives, meet the needs of learners, employers and the public, decision-making, aimed at continuous improvement of EP. |   | +            |                       |                  |
| 7  | 24.    | Manual EP should involve representatives of stakeholder groups, including employers, students and faculty to the formation of EP Development Plan.  |   | +            |                       |                  |
| 8  | 25.    | Manual EP must demonstrate the individuality and uniqueness of the Plan of Subdivision, its consistency with national development priorities and strategies of the organization of education.   |   | +            |                       |                  |
| 9  | 26.    | The university must demonstrate a clear definition of those responsible for the business processes within the EP, a clear distribution of duties of personnel, differentiation collegiate organs.   |   |              | +                     |                  |
| 10   | 27.    | Manual EP must provide evidence of the transparency of the educational program of the control system.   |   | +            |                       |                  |
| 11.  | 28.    | Manual EP must demonstrate the successful functioning of the internal quality assurance system EP, including its design, management and monitoring of their improvement, adoption of evidence-based decisions.  |   | +            |                       |                  |
| 12   | 29.    | Manual EP must implement risk management.   |   |              | +                     |                  |

|  |     |   |  |           |          |  |
|--|-----|---|--|-----------|----------|--|
| 13   | 30. | Manual EP should ensure the participation of representatives of the interested parties (employers, faculty, students) as part of peer education program's management bodies, as well as their representation in decision-making on the management of the educational program. |  | +         |          |  |
| 14   | 31. | The university must demonstrate innovation management within the EP, including the analysis and implementation of innovative proposals.   |  | +         |          |  |
| 15   | 32. | Manual EP must show proof of openness and accessibility for students, faculty, employers and other stakeholders.  |  | +         |          |  |
| 16   | 33. | Manual EP must be trained in the management of education programs.  |  |           | +        |  |
| 17   | 34. | Manual EP should strive to ensure that the progress made since the last external quality assurance procedures are taken into account when preparing for the next procedure.   |  |           | +        |  |
| <b>Total standard</b>                                  |     |   |  | <b>12</b> | <b>5</b> |  |
| <b>standard "Information management and reporting"</b> |     |   |  |           |          |  |
| 18   | 18. | University should ensure the functioning of data collection, analysis and management of information on the basis of modern information and communication technology and software tools.   |  | +         |          |  |
| 19   | 19. | Manual EP should demonstrate the use of the system treated, adequate information to improve the internal quality assurance system.  |  | +         |          |  |
| 20   | 20. | As part of the EP should be a system of regular reporting, reflecting all levels of the structure, including the assessment of the effectiveness and efficiency of the units and departments, scientific research.  |  | +         |          |  |
| 21   | 21. | The institution must establish the frequency, forms and methods of evaluation of EP management activities of collegial bodies and departments, senior management, the implementation of scientific projects.  |  |           | +        |  |
| 22   | 22. | The university must demonstrate determination of the order and the protection of information, including the identification of those responsible for the accuracy and timeliness of the information and analysis of data.  |  | +         |          |  |
| 23   | 23. | An important factor is the involvement of students, staff and faculty in the process of collecting and analyzing information, as well as the adoption of the decisions based on them.   |  | +         |          |  |
| 24   | 24. | Manual EP must demonstrate that the communication mechanism with the students, employees and other stakeholders, including the availability of conflict resolution mechanisms.  |  | +         |          |  |
| 25   | 25. | University should provide a measure of the degree of satisfaction of the needs of faculty, staff and students within the framework of EP and demonstrate proof of address identified deficiencies.  |  | +         |          |  |
| 26   | 26. | The university must evaluate the effectiveness and efficiency of operations, including in the context of EP.  |  |           | +        |  |

|  |     |   |  |  |                    |          |
|--|-----|---|--|--|--------------------|----------|
|  |     | Information collected and analyzed institution, must take into account:   |  |  |                    |          |
| 27   | 27. | key performance indicators;   |  |  | +                  |          |
| 28   | 28. | dynamics contingent of students in the context of forms and types;  |  |  | +                  |          |
| 29   | 29. | level of performance, achievements of students and deductions;  |  |  | +                  |          |
| 30.  | 30. | satisfaction of students and the quality of implementation of the EP training in high school;   |  |  | +                  |          |
| 31   | 31. | the availability of educational resources and support systems for students;   |  |  | +                  |          |
| 32   | 32. | employment and career development of graduates.   |  |  |                    | +        |
| 33   | 33. | Students, staff and faculty need to document their consent to the processing of personal data.  |  |  |                    | +        |
| 34   | 34. | Manual EP must promote all the necessary information in the relevant fields of science.   |  |  |                    | +        |
| <b>Total standard</b>  |     |   |  |  | <b>elev<br/>en</b> | <b>6</b> |
| <b>standard "Development and approval of educational programs"</b> |     |   |  |  |                    |          |
| 35   | 13. | University must define and document procedures for the development and approval of EP at the institutional level.                                   |  |  | +                  |          |
| 36   | 14. | Manual EP should ensure that developed EP stated objectives, including the expected learning outcomes.  |  |  | +                  |          |
| 37   | 15. | Manual EP should ensure that the developed models EP graduate describing learning outcomes and personal qualities.                                  |  |  | +                  |          |
| 38   | 16. | Manual EP must demonstrate conduct external examinations EP.  |  |  | +                  |          |
| 39   | 17. | The qualification obtained upon completion of EP, should be clearly defined, explained and meet a certain level of NSC.                             |  |  | +                  |          |
| 40   | 18. | Manual EP should determine the impact of disciplines and professional practices on the formation of learning outcomes.                              |  |  | +                  |          |
| 41   | 19. | An important factor is the ability to prepare students for professional certification.  |  |  |                    | +        |
| 42   | 20. | Manual EP must provide evidence of the participation of students, faculty, and other stakeholders in the development of EP, ensuring their quality. |  |  | +                  |          |
| 43   | 21. | The complexity of EP should be clearly defined in the Kazakhstan credits and ECTS.  |  |  | +                  |          |
| 44   | 22. | Manual EP should ensure that the content of academic disciplines and the level of learning outcomes of study  |  |  | +                  |          |

|  |     |  |          |          |          |  |
|--|-----|--|----------|----------|----------|--|
|  |     | (bachelor, master, doctorate).   |          |          |          |  |
| 45   | 23. | In the structure of EP should provide a variety of activities related to learning outcomes.  |          | +        |          |  |
| 46   | 24. | An important factor is the presence of the joint EP with foreign educational institutions.   |          |          | +        |  |
| <b>Total standard</b>  |     |  | <b>1</b> | <b>9</b> | <b>2</b> |  |
| <b>standard "Permanent monitoring and periodic evaluation of educational programs"</b> |     |  |          |          |          |  |
| 47   | 11. | The university should conduct monitoring and periodic assessment of the EP in order to achieve the goals and meet the needs of students and society. The results of these processes are aimed at continuous improvement of the EP. |          | +        |          |  |
|  |     | Monitoring and periodic assessment of EP should consider:  |          |          |          |  |
| 48   | 12. | content of the programs in the light of the latest scientific achievements in a specific discipline to ensure the relevance of taught discipline;  |          | +        |          |  |
| 49   | 13. | changing needs of society and the professional environment;  |          | +        |          |  |
| 50   | 14. | load, performance and release of students;   |          | +        |          |  |
| 51   | 15. | effectiveness evaluation procedures of students;   |          | +        |          |  |
| 52   | 16. | expectations, needs and satisfaction of students training for EP;  |          | +        |          |  |
| 53   | 17. | educational environment and support services and their compliance with the objectives of EP.   |          | +        |          |  |
| 54   | 18. | The institution and the management EP must provide evidence of the participation of students, employers and other stakeholders in the revision of the EP.  |          |          | +        |  |
| 55   | 19. | All interested persons should be informed about any planned or action taken in respect of EP. All changes made to the EP, should be published.   |          | +        |          |  |
| 56   | 20. | Manual EP should ensure the review the content and structure of the EP, taking into account changes in the labor market, employers' requirements and social demands of society.  |          | +        |          |  |
| <b>Total standard</b>  |     |  |          | <b>9</b> | <b>1</b> |  |
| <b>standard "Students' learning, teaching and assessment of progress"</b>              |     |  |          |          |          |  |
| 57   | 11. | Manual EP should ensure respect and consideration for the different groups of students and their needs, providing them with flexible learning paths.   |          | +        |          |  |
| 58   | 12. | Manual EP should ensure that the use of various forms and methods of teaching and learning.  |          | +        |          |  |
| 59   | 13. | An important factor is the availability of our own research in the field of educational disciplines teaching methodology EP.   |          |          | +        |  |

|                            |     |   |  |  |          |          |
|----------------------------|-----|---|--|--|----------|----------|
| 60                         | 14. | Manual EP must demonstrate the existence of a feedback system for the use of different teaching methods and assessment of learning outcomes.  |  |  | +        |          |
| 61                         | 15. | Manual EP should show support for the autonomy of the students, while guidance and assistance from the instructor.  |  |  | +        |          |
| 62                         | 16. | Manual EP must demonstrate that they have procedures for responding to complaints from students.  |  |  | +        |          |
| 63                         | 17. | The university should ensure consistency, transparency and objectivity of the evaluation mechanism of learning outcomes for each EP, including an appeal.   |  |  | +        |          |
| 64                         | 18. | University must ensure that the learning outcomes assessment procedures EP students planned learning outcomes and program objectives. Criteria and evaluation methods in the framework of EP must be published in advance.  |  |  | +        |          |
| 65                         | 19. | The university should be defined mechanisms for the development of each graduate EP learning outcomes and ensure the completeness of their formation.   |  |  | +        |          |
| 66                         | 20. | Evaluating a person must possess modern methods of assessment of learning outcomes and regularly improve their qualifications in this field.  |  |  | +        |          |
| <b>Total standard</b>      |     |   |  |  | <b>5</b> | <b>5</b> |
| <b>standard "Students"</b> |     |   |  |  |          |          |
| 67                         | 13. | The university must demonstrate a policy of formation of a contingent of students from admission to the issue and to ensure the transparency of its procedures. Procedures governing life cycle enrolled (from receipt to completion) must be determined approved published.                                  |  |  | +        |          |
| 68                         | 14. | Manual EP must demonstrate conduct special adaptation and support programs for newly admitted and foreign students.   |  |  | +        |          |
| 69                         | 15. | The university must demonstrate compliance with the actions of the Lisbon Recognition Convention.   |  |  | +        |          |
| 70                         | 16. | The university should cooperate with other organizations and national education centers "of the European Network of National Information Centers on academic recognition and mobility / National Academic Recognition Information Centers» ENIC / NARIC to ensure a comparable recognition of qualifications. |  |  | +        |          |
| 71                         | 17. | Manual EP must demonstrate the existence and application of the mechanism for the recognition of the results of academic mobility of students, as well as additional results of formal and informal learning.   |  |  | +        |          |
| 72                         | 18. | University should provide an opportunity for external and internal mobility of students EP, as well as to assist them in obtaining external grants for training.  |  |  | +        |          |
| 73                         | 19. | Manual EP should make the maximum amount of effort to ensure students practice sites, promote the employment of graduates maintain contact with them.   |  |  | +        |          |
| 74                         | 20. | The university should provide graduates EP documents confirming the qualification, including learning outcomes achieved and the context, content and status of education  |  |  | +        |          |



|                           |     |   |  |          |          |  |
|---------------------------|-----|---|--|----------|----------|--|
|                           |     | and evidence of its completion.   |  |          |          |  |
| 75                        | 21. | An important factor is the placement and monitoring of professional activity of graduates EP.   |  |          | +        |  |
| 76                        | 22. | Manual EP should actively encourage students to self-education and development is the main program (extracurricular activities).  |  | +        |          |  |
| 77                        | 23. | An important factor is the presence of existing Association / alumni association.   |  |          | +        |  |
| 78                        | 24. | An important factor is the availability of a mechanism to support gifted students.  |  | +        |          |  |
| <b>Total standard</b>     |     |   |  | <b>7</b> | <b>5</b> |  |
| <b>standard "Faculty"</b> |     |   |  |          |          |  |
| 79                        | 13. | University must have an objective and transparent personnel policy, including recruitment, professional growth and development, ensuring the professional competence of all staff.  |  |          | +        |  |
| 80                        | 14. | The university must demonstrate compliance with the human resource capacity of the university teaching staff development strategy and specific EP.  |  |          | +        |  |
| 81                        | 15. | Manual EP should demonstrate an awareness of responsibility for its employees and providing them favorable conditions of work.  |  | +        |          |  |
| 82                        | 16. | Manual EP must demonstrate the changing role of the teacher in connection with the transition to studentotsentrirovannomu training.   |  |          | +        |  |
| 83                        | 17. | Institution must determine the contribution to the implementation of teaching staff EP university development strategy, and others. Strategic documents.  |  |          | +        |  |
| 84                        | 18. | The university should provide opportunities for career growth and professional development of teaching staff EP.  |  |          | +        |  |
| 85                        | 19. | Manual EP should involve teaching practices of the trade.   |  |          | +        |  |
| 86                        | 20. | Manual EP should ensure that concerted action on the development of young teachers.   |  |          | +        |  |
| 87                        | 21. | The university must demonstrate motivation for professional and personal development of teachers EP, including the promotion of the integration of scientific and educational activities, and the use of innovative teaching methods.                                   |  | +        |          |  |
| 88                        | 22. | An important factor is the use of an active teaching staff information and communication technologies in the educational process (e.g., on-line training, e-portfolio MEP et al.).  |  |          | +        |  |
| 89                        | 23. | An important factor is the development of academic mobility in the framework of the EP, to attract the best foreign and domestic lecturers.   |  |          | +        |  |
| 90                        | 24. | An important factor is the involvement of teaching staff EP to society (teaching staff role in the education system, in the development of science in the region, creating a cultural environment, participation in exhibitions, art contests, charity programs, etc.). |  | +        |          |  |

|   |    |  | <b>Total standard</b> | <b>3</b> | <b>9</b> |  |
|---|----|--|-----------------------|----------|----------|--|
| <b>Standard "Educational resources and student support systems"</b> |    |  |                       |          |          |  |
| 91  | 1. | Manual EP must demonstrate sufficient financial and technical resources and infrastructure.  |                       |          | +        |  |
| 92  | 2. | Manual EP must demonstrate that procedures to support different groups of students, including information and counseling.  |                       |          | +        |  |
|   |    | Manual EP must demonstrate compliance with the specifics of information resources EP, including compliance with:   |                       |          |          |  |
| 93  | 3. | technological support for students and teaching staff in accordance with the educational programs (eg, online training, simulation, database, data analysis program);                        |                       |          | +        |  |
| 94  | 4. | library resources, including educational fund, methodical and scientific literature in general, basic and majors on paper and electronic media, periodicals, access to scientific databases; |                       |          | +        |  |
| 95  | 5. | examination of the results of R&D, final papers, theses for plagiarism;  |                       |          | +        |  |
| 96  | 6. | WI-FI functioning on the territory of the organization of education.   |                       | +        |          |  |
| 97  | 7. | The university should strive to ensure that the training equipment and software tools used to develop the EP, were similar to those used in their respective industries.                     |                       |          | +        |  |
| 98  | 8. | The institution shall ensure compliance with safety requirements in the learning process.  |                       | +        |          |  |
| 99  | 9. | The university should strive to take into account the needs of different groups of students in the context of EP (adults, workers, foreign students, and students with disabilities).        |                       | +        |          |  |
| <b>Total standard</b>   |    |  |                       | <b>3</b> | <b>6</b> |  |
| <b>Standard "Information to the public"</b>                         |    |  |                       |          |          |  |
|   |    | Published by the university as part of EP information must be accurate, objective, relevant and should include:  |                       |          |          |  |
| 100   | 1. | implemented the program, with an indication of the expected learning outcomes;   |                       | +        |          |  |
| 101   | 2. | information about the possibility of giving a qualification at the end of EP;  |                       | +        |          |  |
| 102   | 3. | information about teaching, learning, assessment procedures;   |                       | +        |          |  |
| 103   | 4. | information on the passing scores and educational opportunities provided to students;  |                       | +        |          |  |
| 104   | 5. | information on graduate employment opportunities.  |                       |          | +        |  |
| 105   | 6. | Manual EP should use a variety of methods of disseminating information (including media, web resources, information networks, etc..) To inform the public and interested parties.            |                       |          | +        |  |
| 106   | 7. | Public awareness should provide support and clarification of national programs for the country's development and of higher and postgraduate education.                                       |                       |          | +        |  |
| 107   | 8. | The university is required to publish on their own web resource audited financial statements.  |                       |          | +        |  |

|   |     |  |          |           |           |  |
|---|-----|--|----------|-----------|-----------|--|
| 108   | 9.  | The university must demonstrate reflection on a web resource of information that characterizes the university as a whole and in the EP section.  |          |           | +         |  |
| 109   | 10. | An important factor is the availability of adequate and objective information about the teaching staff EP, in the context of the staff.  |          |           | +         |  |
| 110   | 11. | An important factor is public awareness of cooperation and interaction with partners in the EP, including research / consulting organizations, business partners, the social partners and education institutions.  |          |           | +         |  |
| 111   | 12. | University must post information and links to external resources of the external evaluation procedures.  |          |           | +         |  |
| 112   | 13. | An important factor is the participation of the University and EP implemented in a variety of procedures for external evaluation.  |          |           | +         |  |
| <b>Total standard</b>                             |     |  |          | <b>4</b>  | <b>9</b>  |  |
| <b>Standards sectional individual specialties</b> |     |  |          |           |           |  |
| <b>Engineering and technology</b>                 |     |  |          |           |           |  |
|   |     | <i>Educational programs in areas of "engineering and technology", such as "Instrument", "Biotechnology", etc., must meet the following requirements:</i>   |          |           |           |  |
| 113   | 1.  | In order to familiarize students with the professional environment and current issues in the field of specialization, as well as for the acquisition of skills through theoretical training education program should include subjects and activities aimed at obtaining practical experience and skills for the whole profession and majors in particular including:<br>- excursions to the enterprises in the area of specialization (factories, workshops, research institutes, laboratories, educational and experimental farms, etc.)<br>- carrying out specific studies or entire disciplines of specialization enterprise,<br>- seminars for solving practical problems of relevance to companies in the field of specialization, etc. |          |           | +         |  |
| 114   | 2.  | The teaching staff involved in the education program should include full-time teachers with a long experience of working full-time employee in the enterprises in the area of specialization education program.  |          |           | +         |  |
| 115   | 3.  | The contents of all disciplines EP must in one way or another based and include a clear link with the content of the fundamental natural sciences, such as mathematics, chemistry, physics.  |          |           | +         |  |
| 116   | 4.  | Manual EP should provide measures to enhance practical training in the field of specialization.  |          |           | +         |  |
| 117   | 5.  | Manual EP should provide training for students in the application of modern information technologies.  |          |           | +         |  |
| <b>Total standard</b>                             |     |  |          | <b>3</b>  | <b>2</b>  |  |
| <b>TOTAL</b>                                      |     |  | <b>1</b> | <b>66</b> | <b>50</b> |  |