EI «Alikhan Bokeikhan University»

Reviewed at the meeting of the Academic Council on Quality of the Faculty No. 1 dated 12.02.2020. reassigned No. 1 dated 21.09.2022

"I approve"
Dean of the Faculty of Information Technology and Economics
_____ Bidelmanova M.A
«_____» 2022 y.

DEVELOPMENT PLAN OF THE EDUCATIONAL PROGRAM 6B07125 "ELECTRIC POWER INDUSTRY" for 2020-2025

Reviewed at an expanded meeting of the Department of Information and Technical Sciences
Protocol no. __1_ of ___29.08.22 y._____
Head of the department.
KurmangalievaN.K._____

Semey, 2022 y.

Development plan of EP
6B07125 "Electric power Industry"
for 2020-2025 years

1. General provisions

The educational program (EP) 6B07125 "Electric Power Industry" is compiled in accordance with the requirements of the State Mandatory Standard of Higher Education, approved by the Order of the Ministry of Education and Science of the Republic of Kazakhstan dated July 20, 2022 No. 2., the Rules for organizing the educational process for the credit system of education, methodological recommendations for the development of modular educational programs of educational specialties (bachelor's degree) (MP. 01.02/2018).

The EP is designed as a set of consecutive training courses for the entire period of study and is aimed at mastering the competencies necessary for awarding the academic degree Bachelor of Engineering and Technology according to the educational program 6B07125 "Electric Power Industry".

Training of specialists is carried out on the basis of the State license of the KZ04LAA00032042 series dated 17.09.2021, issued by the Committee for Quality Assurance in the Field of Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan.

Preparation of the educational program 6B07125 "Electric Power Industry" is carried out on the basis of regulatory documents of the Ministry of Education and Science of the Republic of Kazakhstan, in accordance with the mission and internal regulatory documentation of IE «Alikhan Boleikhan University».

In 2019, the educational program was included in the Register of Educational Programs of the Unified Higher Education Management System of the Ministry of Education and Science of the Republic of Kazakhstan.

One of the quantitative indicators of achieving the goal of an educational program is its ranking in various ratings. Thus, according to the results of the 2019 ranking of the Independent Agency for Quality Assurance in Education 6B07125 "Electric Power Industry" ranks 21st among 29 universities.

According to the results of the 2020 ranking of the Independent Agency for Quality Assurance in Education 6B07125 "Electric Power Industry" ranks 23rd among 29 universities.

The purpose of the educational program development plan is the efficient and safe distribution and use of energy resources. Power grid design, selection, installation and commissioning, diagnostics and maintenance of electrical networks. Development of devices involved in the production and consumption of electricity.

Based on the learning objectives, the educational program has been developed taking into account the student-centered learning technology within the competence approach. External and internal stakeholders, social partners and students of various levels of education, leading university scientists, and other interested persons were involved in the formation of the educational program.

The composition of the developers was reviewed and approved at a meeting of the Academic Quality Council of the Faculty of ITE (Protocol No. 2 of 02/20/2020). The compilers were: Head of the Department of "Information and Technical Sciences" Ph.D. Aukenov B. M., leading scientists and teachers of the department: Bochkareva G.V., Ph.D., Associate Professor, Sitnikova E.B., Ph.D., social partners of the university - Mukhanov B.M - Director of Partner Energo LTD LLP", Sergey Alexandrovich Zakharov, Candidate of Technical Sciences. Associate Professor, Head of the Department of Power Supply of Mining and Industrial Enterprises, Kuzbass State Technical University named after T.F. Gorbachev, representatives of the student contingent - Kaliakbar A. - student of OP 6B07125 "Electric Power Industry".

1. Analysis of the current situation and trends in the development of the labor market and educational services

Educational activities

Students of the educational program have the opportunity to acquire theoretical knowledge and practical skills, both in the course of lectures, and in practical and laboratory classes. For this purpose, EP "Electric Power Industry" has a classroom fund equipped with modern technical training facilities; specialized classrooms equipped with modern equipment.

- On the basis of the Department of Information and Technical Sciences, an IT LAB ACCELERATOR was launched for teaching staff and students in the IT direction. The purpose of the accelerator is to increase the intellectual potential of students and develop skills in the IT field for everyone. The latest equipment is designed for in-depth study of subjects included in the curriculum, as well as for creative work in the process of creating start-up projects. The total training area used corresponds to the normative indicators, the norms of the sanitary and fire service.
- Innovative and interactive forms of education are widely used in the classroom, students' participation in research work and creative competitions in the specialty is achieved. Practitioners and foreign qualified lecturers are invited to give lectures and conduct seminars.
- Every year foreign scientists are invited to give lectures to students. For example, within the framework of academic mobility and the establishment of partnerships with foreign universities that correspond to the interests of the strategic development of the University, from April 3-7, 2017, 2nd and 3rd year students attended a course of lectures on "Electricity Supply". Invited scientist of the Kuzbass State Technical University named after T.F. Gorbachev, Head of the Department of "Power Supply of Mining and Industrial Enterprises", Candidate of Technical Sciences, Associate Professor S.A. Zakharov made a speech.
- Every year, on an ongoing basis, the content of educational programs and the catalog of elective disciplines is reviewed by social partners and potential employers.
- Students have the opportunity to receive additional competencies in Minor programs for university students as part of the development of the Major basic educational program;
- Strengths:
- the use of innovative teaching methods on an ongoing basis;
- attracting employees of enterprises to give lectures and conduct practical and laboratory classes;
- the demand for graduates of the educational program in the labor market both at the regional level and at the national level;
- the opportunity to continue studying at foreign partner universities under joint programs;
- ample opportunities to support talented youth at various levels.
- For the strategic development of educational activities in the EP "Electric Power Industry", it is necessary to strengthen the following aspects:
- to increase the number of foreign students attracted to the educational program;
- to increase the level of teaching staff proficiency in foreign languages;
- to activate the work of scientific circles, workshops, laboratories for instilling SoftSkills and WorldSkills skills in children with further involvement of students of secondary general education and secondary vocational institutions in various university events and further admission to the EP;
- open new classrooms, including with the involvement of social partners and other stakeholders.

Research activities.

Research work is reflected: in the implementation of research projects carried out by the university and its scientific and structural units; in the organization and conduct of scientific and practical events that gather famous scientists and practitioners, young scientists, students within the walls of the university; in published scientific papers, the results of conferences and round tables. The scientific work

of students is a continuation and deepening of the educational process and is organized directly at the departments, in student scientific and technical associations (scientific circles, centers, etc.). EP 6B07125 "Electric Power Industry" is provided with scientific infrastructure, within the department there are three scientific circles, including the circle "Creative Energy" with a quantitative composition of more than 10 students annually.

The circles are held according to a drawn-up plan, taking into account the interests of students, individual abilities and inclinations. The purpose of the work of the circles is to improve the quality of training of highly qualified specialists and the formation of students' scientific search skills. The result of the work of the circle is active participation in student scientific and practical conferences, according to the results of which participants take prizes.

The forms of attracting students to research activities are expressed in the form of students' participation in the implementation of research projects.

The Department of "ITN" conducts active research work of teachers and students. Research work is a mandatory, integral part of the training of qualified specialists at the university, as an inseparable component of a single process: educational and scientific-innovative.

Work is underway on the initiative topics of the department, registered in the National Center of NTI RK:

- "Research of algorithms for the development of a smart mobile application for testing based on the Kotlin programming language" scientific supervisor PhD Karipzhanova A.Zh. (Department of Information Technology Sciences);

- Development and implementation of an innovative component model of a digital medical textbook (0119RKI0173) - Supervisor Candidate of Physical and Mathematical Sciences E.A. Kurmanbayev (Department of Information Technology Sciences);

- Modern problems and prospects for the development of digital technologies (0119RKI0174) - scientific supervisor Candidate of Physical and Mathematical Sciences Kurmanbaev E.A. (Department of Information Technology Sciences).

For the period 2017-2020 . The teaching staff of the department published 39 articles in journals recommended in the KKSON of the Ministry of Education and Science of the Republic of Kazakhstan - 2, articles in international rating journals – 2, 2 textbooks with a volume of 18.25 p.l

. In the Department of "Information and Technical Sciences" on 02/15/2020, the defense of the doctoral dissertation of Karipzhanova A.Zh. on direction 6D070300 "Information technologies" on the topic "Methods and algorithms for creating distributed databases of an information system".

In December 2020, an IT LAB ACCELERATOR for teaching staff and students in the IT field was launched on the basis of the Department of Information and Technical Sciences. The purpose of the accelerator is to increase the intellectual potential of students and develop skills in the IT field for everyone. The latest equipment is designed for in-depth study of subjects included in the curriculum, as well as for creative work in the process of creating start-up projects.

With the positive dynamics of improving the quality of scientific research, searching for opportunities to commercialize the results of scientific activity, increasing the scientific activity of teaching staff and students, the following points remain relevant:

- a decrease in the proportion of teachers who have completed scientific training, advanced training in research centers, far and near abroad, at enterprises

- there is a lack of involvement of students in research work;

- weak participation in republican student subject Olympiads and R & D competitions;

- insufficient connection of science, education and production, low level of implementation of research results in production;

- insufficient level of research effectiveness and citation of scientists and the university.

Educational and social activities.

The priority task of the state and the university is to create conditions for the intellectual, spiritual, moral and physical development of students.

Educational work at the Department of "Information and Technical Sciences" is carried out according to the approved plans of educational work. The goal-setting basis of educational work at the department is the creation of conditions for the active life of students, for civil self-determination and self-realization, for maximum satisfaction of the needs of students in intellectual, cultural and moral development.

Patriotic education, its urgent need is recognized in any state and is one of the main directions of education in IE «Alikhan Boleikhan University». The curators of the groups conducted curatorial hours in the following areas: ideological-political and civil-patriotic education; ideological and moral education, measures for the formation of a healthy lifestyle. Students of the department participated in city (intra-university) clean-up days, gardening, in the actions "Students against AIDS", "Youth without drugs".

Assessment of the level of involvement of students in creative activity is a priority indicator for assessing the effectiveness of the organization of educational work. The main indicator of involvement is the increase in students involved in the organization of educational activities in the EP "Electric Power Industry".

The system for assessing the level of involvement is based on the monitoring and reporting mechanisms of faculties. The main performance indicators are: information about the achievements of students who are participants of city, regional, republican and international competitions, competitions, festivals; information about the involvement of students in the work of the Youth Affairs Committee. The level of involvement is monitored at the end of each half-year and the final report is submitted to the educational department of the university at the end of each academic year. So, an example of the indicators of involvement, taking an active part in the implementation of activities in the field of creative and personal development of students: in 2018 – 81%, in 2019 - 84%. In 2020, due to the pandemic, the number of participants decreased and amounted to 72%.

The university has an incentive system, expressed in the approval of the annual budget for conducting educational work by students.

But at the same time, some issues require further improvement:

- weak participation in regional, republican student competitions and sports events;
- decrease in the proportion of students employed in youth organizations and creative associations associated with restrictive measures;
- reduction of the number of students participating in city, regional, national and international creative competitions.

International activities.

The results of international cooperation in the field of scientific research of the department and the international department of IE «Alikhan Boleikhan University» with partner universities are reflected in the signed cooperation agreements with other educational organizations.

The Department of Information and Technical Sciences cooperates with the following universities of the near and far abroad:

1. University of Economics and Management (Czech Republic, Prague)
2. Irkutsk State Agricultural Academy
3. University of Nebraska at Omaha
4. Kuzbass State Technical University named after T.F. Gorbachev
5. KNOW HPE "Siberian Academy of Finance and Banking" Novosibirsk, Russia
6. Novosibirsk State Technical University
7. Financial University under the Government of the Russian Federation, Barnaul branch
8. Novosibirsk State University of Economics and Management
9. Kharkiv National University
10. Pamukkale University
11. Non-governmental educational institution "Moscow Institute of Technology" (Moscow, Russia)

12. Tomsk State University of Control Systems and Radioelectronics (Tomsk, Russia)
13. Sofia University named after Clement of Orchids
14. Novosibirsk State University of Architecture and Civil Engineering (Sibstrin), Novosibirsk, Russia
15. Sofia Technical University (Bulgaria, Sofia)
16. International University of Kyrgyzstan
17. New Bulgarian University (Bulgaria, Sofia)
18. International University Final (Turkish Republic of Northern Cyprus)
19. Moscow City Pedagogical University (Russian Federation, Moscow)
20. Varna Free University (Bulgaria, Varna)

Within the framework of academic mobility, the ITN Department cooperates with three universities of the near and far abroad: Sofia Technical University (Bulgaria, Sofia), Kuzbass State Technical University named after T.F. Gorbachev, Novosibirsk State University of Architecture and Civil Engineering (Sibstrin) (Novosibirsk, Russia).

Despite the achievements in this area, some issues require urgent solutions, in particular:

- insufficient knowledge of a foreign language by students of the EP, as well as teaching staff, for the implementation of academic mobility;
- insufficient funding for the development of academic mobility programs for students.
- low motivation of teaching staff to improve language competencies.
- a low proportion of attracting foreign students to study under the EP;

Resource support of the educational program.

The difference and uniqueness of the EP is that there is a good material and technical base that meets modern requirements. This is the availability of specialized offices and laboratories, further work is underway to purchase modern computers and special equipment for laboratories.

All buildings are equipped with the necessary number of lecture halls, many of which are equipped with projectors and interactive whiteboards, which gives teachers ample opportunities for high-quality classes. Practical and seminar classes are also held in specialized classrooms. There are educational and scientific laboratories, the equipment of which is reviewed and improved annually. So, to ensure the quality of the educational process within the framework of the EP "Electric Power Industry" in building No. 2, classrooms 211, 102 are equipped with multimedia projectors.

Acting within the framework of the credit system of education, favorable conditions have been created for students to master all disciplines of the educational program and obtain an academic degree in accordance with the requirements of the SES and has modern information and communication bases (AIS University, broadband Internet access, electronic library), contributing to the intensification of the educational process and the conduct of the educational process and research.

Teaching staff of the ITN department use innovative educational technologies and modern teaching technologies. For the application of these technologies in the educational process, specialized classrooms are used, such as 112, 117. For information and technical support of the main production processes (educational, scientific, managerial, etc.), the university has a sufficient fleet of computers located in structural divisions, computer classrooms, laboratories and classrooms.

At annual meetings with employers and social partners, questions are raised about the use of various software products that are used in practice, as well as graduates in their questionnaires indicated the need to use various software tools in the educational process.

Strengths:

- good material and technical base used in the educational process;
- availability of specialized classrooms and laboratories for the formation of additional competencies in EP;
- modern information and communication bases contributing to the educational process.

But at the same time, it is necessary to supplement the educational process with software products, similar to those used in production.

3. Directions of the EP development plan, goal, objectives, expected results, target indicators, implementation measures

- Strategic directions of the EP development plan:

Strategic direction 1. Improving the quality of educational activities. The direction corresponds to the adopted "State Program for the development of education and science of the Republic of Kazakhstan for 2020-2025".

Strategic direction 2. Development and improvement of the quality of research and innovation activities. This direction affects the main objectives of the state program "Digital Kazakhstan", as amended by the Decree of the Government of the Republic of Kazakhstan dated 20.12.2019 No. 949.

Strategic direction 3. Improvement of educational and social work of students. The principles and main provisions in this area are implemented within the framework of the National Program "Rukhani Zhangyru" – a look into the future.

Strategic direction 4. Expansion of international cooperation.

The purpose of the development plan of EP 6B07125 "Electric Power Industry" is an efficient and safe distribution and use of energy resources. Power grid design, selection, installation and commissioning, diagnostics and maintenance of electrical networks. Development of devices involved in the production and consumption of electricity.

The main objectives of the implementation of the development plan of EP 6B07125 "Electric power Industry":

- Provision of educational services for the development of professional skills;
- Formation of the main professional competencies of future bachelors in the specialty "Electric Power Engineering";
- Acquisition of the ability to work with scientific and technical literature, use domestic and foreign experience in professional activities, systematize and summarize the information received;
- Training in the ability to analyze and process the results obtained; analyze the state and dynamics of objects of activity; in creating theoretical models that allow predicting the properties and behavior of objects of activity; in developing plans, programs and methods for testing technological systems and electrical equipment; in using computer technology to process the results of experimental and theoretical studies; in developing energy-efficient equipment, installations and complexes.

Expected results on EP 6B07125 "Electric Power Industry"

- formulate mathematical methods of calculations and calculations, basic concepts of analytical geometry at a professional level; demonstrate knowledge and skills of using fundamental physical laws and theories, as well as methods of physical research; solve typical problems;
- to describe the analytical and numerical analysis of electrical circuits under any influences in the time and frequency domain; to evaluate transients in linear circuits; to determine the parameters of four-poles under different operating modes; to analyze the transmission of energy over long lines;
- demonstrate knowledge of the documentation requirements adopted in professional communication; understanding of oral speech within professional topics; distinguish the necessary information from foreign language sources;
- design of installations of renewable and non-traditional energy sources; develop and properly execute technical and design documentation for installations of renewable energy sources;
- create diagrams and drawings based on the AutoCAD computer graphics program; choose methods for processing measurement results; evaluate measurement error in accordance with the standards and technical regulations of the Republic of Kazakhstan; choose measuring instruments, organize measurement and evaluate the measurement result of various electrical quantities; use modern measuring instruments;

- selection of basic and additional dielectric means of protection; first aid in case of electric shock; determination of the safety procedure during operation of electrical installations, admission to work and supervision during work in electrical installations up to and above 1000 V
- calculate and describe the physical processes occurring in electrical circuits; evaluate the efficiency and choose the type of electrical devices for specific conditions; conduct elementary tests of electrical devices; describe the preliminary calculation of parameters and selection of electrical devices; calculate typical electrical calculations for various types of protections and automation, for specific electrical networks to choose the type of relay protection devices; make and analyze relay protection schemes, perform maintenance, monitoring and verification of relay protection devices;
- calculate the steady-state modes of open electrical networks; solve the steady-state modes of closed electrical networks; analyze the modes of a section of the electrical network; select a set of electrical installations for the transmission and distribution of electrical energy, consisting of substations, switchgear, current lines, overhead and cable transmission lines;
- to calculate short-circuit currents in networks with voltages up to and above 1000 V, to assess the effects of transients on the stability of the energy system; to interpret the economic characteristics of production types; to analyze and calculate the duration of the production cycle; to analyze the circuits of electrical connections of RC under various operating modes; to calculate and select the main elements of the electrical part of stations and substations; to offer rational layout of electrical equipment of open and closed switchgears; analyze and select the main circuits of power plants; select electric motors for working mechanisms and check them according to the conditions of start-up and self-start;
- to calculate lighting and colorimetric calculations and measurements; to choose the methods necessary for measurements; to predict regulated levels of electromagnetic compatibility by steady-state voltage deviation; to determine the parameters and characteristics of electronic devices and devices; to measure electrical quantities in semiconductor devices;
- determine the design parameters of electric machines and transformers; calculate and build static and operating characteristics of machines; interpret the electrical circuit of the machines; calculate the magnetic circuits of electric machines; explain the nature of electromagnetic processes; determine the design parameters in the EP system; calculate and build static and operating characteristics of machines; make electrical control circuits of the EP; calculate the given moments inertia and forces in the EP;
- to choose power electrical equipment and control circuits of electrical installations in accordance with environmental conditions; to install, adjust, evaluate the effective use and maintenance of power supply facilities and systems; to determine the properties of electrical insulating, dielectric, conductive, semiconductor magnetic, electrical materials; apply electromechanical, electronic and microprocessor automation tools to control the values of electrical quantities in order to control electric power facilities; choose automation tools for energy facilities;
- describe the technical characteristics of electrical equipment; predict equipment malfunctions and take measures to prevent and eliminate them; calculate the electrical strength of the simplest insulation structures; apply methods to protect various electrical equipment from external and internal overvoltages;
- analyze the capabilities and select a microcontroller for process control, describe an algorithm and a program for process control; calculate and select the main elements of the circuits of power converting devices; make a preliminary calculation of parameters and select a serial converter for a specific application;

– systematize, summarize legal and economic information for use in professional, including entrepreneurial activities. Analyze, summarize economic information and systematize safety standards for use in professional activities.

- Target indicators and measures for their implementation in the framework of EP 6B07125 "Electric Power Industry"

Target indicators	Unit of measurement	in the planned period					
		2021	2022	2023	2024	2025	2026
1	2	3	4	5	6	7	8
Increase in the share of graduates who studied under the University's Bachelor's degree program, employed in the first year after graduation	%	65	70	70	75	75	80
Number of dual programs within the framework of memorandums of cooperation with external stakeholders	Qty	-	1	1	2	2	3
The percentage of teaching staff who have completed advanced training courses on new teaching methods to improve and master new competencies according to the EP.	%	25	35	55	60	75	95
Coverage of students participating in research from the total contingent of full-time students (without distance learning)	%	25	30	35	45	50	60
Growth of university publications in rating publications (based on information resources on the Web of Science (ClarivateAnalytics) and Scopus (Elsevier), jStore, etc.)	%	5	10	10	15	20	20
Percentage of teaching staff who have completed language competence improvement courses (from full-time teaching staff);	%	-	5	10	15	15	20

Number of joint educational programs with partner universities	Qty	-	-	-	-	-	-
The share of students covered by participation in public organizations of the university and the region	%	-	5	5	10	10	15
Measures to achieve the target indicators		2020	2021	2022	2023	2024	2025
Implementation of dual education programs for students			X	X	X	X	X
Conclusion of agreements and memoranda on creative cooperation within the framework of the EP		X	X	X	X	X	X
Allocation of financial resources for the University teaching staff to take advanced training courses on new digital technologies to improve and master new knowledge		X	X	X	X	X	X
Involvement of students, undergraduates and doctoral students in research		X	X	X	X	X	X
Participation of scientists in joint research projects with universities of Kazakhstan and abroad			X	X	X	X	X
Conclusion of agreements and memoranda on joint programs		-	X	X	X	X	X
Participation of students and young personnel in various events of the university, city and region			X	X	X	X	X
Improvement of the EP based on a competent approach and the introduction of modern educational technologies and methods into the educational process. Coordination and development of educational standards in accordance with the needs of employers and social partners. Creation of new EP adapted to modern conditions, taking into account new achievements in science, technology and industry, as well as the requirements of employers.							
Improving the rating of the department and establishing contacts with employers. Conclusion of agreements on interaction and cooperation with leading IT companies. Annual participation in the job fair with the invitation of business representatives to employ graduates in priority sectors of the							

economy of the Republic of Kazakhstan						
Monitoring of customer satisfaction with the quality of educational services provided. Annual survey: former graduates, last-year students who have completed practical training. Monitoring of employers' satisfaction with the quality of training of faculty specialists with positive feedback on the quality of training of specialists						
Development of continuing education at the university. Carrying out activities aimed at the continuity of education levels in the context of continuity: bachelor's degree- Master's degree. Orientation of trainees to the values of continuing education: personal meanings, readiness, interests, etc. Formation of a qualitative contingent of students at the department						
Activation of scientific activity of trainees. Attracting students to work on research projects Participation in student conferences, creative work competitions, in the presentation of the results of their own research at interuniversity conferences. Involvement of trainees in the performance of cathedral scientific research. Organization of annual student conferences, Olympiads, contests, round tables, business and role-playing games.						
Strengthening and expanding the department's interaction with external organizations. Support of business contacts with scientists from other cities of the Republic of Kazakhstan in the following areas: reviewing and opposing dissertations, scientific articles, methodological manuals. preparation and publication of articles, joint textbooks, collective monographic publications, conducting joint scientific research and scientific events, examination of documents, projects, problem situations, participation in the work of editorial boards of scientific publications, participation in conferences, Olympiads, round tables, congresses						

Qualitative restructuring of the teaching staff of the department. Development and approval of the professional development plan of the teaching staff of the department. Participation of teaching staff in international summer schools and seminars on IT technologies						
Updating the personnel potential of the department. Conducting competitions to fill vacant positions of the department on the basis of competitive selection and an objective approach to evaluating the activities of employees. Updating the staff of the teaching staff of the department on the basis of continuity: attracting the most competent graduates of the university, as well as specialists in the practical field of activity to teaching and scientific activities						
Development of infrastructure and material and technical base: expansion of the classroom fund of the department for educational and scientific activities. Carrying out measures to form a modern educational and laboratory base: creation of the IT infrastructure of the department; acquisition of modern software; updating of the computer park through the acquisition of a new generation of computers; acquisition of modern multimedia equipment.						
To improve dual training to create additional opportunities to improve the effectiveness of training in the field of engineering and technology. Organization of internships and research practices for graduate students in advanced IT universities and research institutes of the near and far abroad						

4. Mechanisms of implementation of the EP development plan

The development of the EP development plan provides an integrated approach to the implementation of activities aimed at achieving the set goal through the solution of formulated specific tasks, contributes to the full implementation of planned activities

At the end of the academic year, at the meeting of the department, the monitoring of EP 6B07125 "Electric Power Industry" is carried out, with the participation of all interested parties, the results achieved, the effectiveness and efficiency of the implementation of EP are discussed. The analysis of the achievement of target indicators is considered at a meeting of the department with the participation of leading teaching staff, other interested persons.

The monitoring results are submitted for discussion to the Academic Quality Council of the Faculty. Based on the analysis of the monitoring results, adjustments are made to the EP development plan, but no

more than 2 times a year.

Monitoring of the implementation of the Development Plan is carried out by analyzing and summarizing information on the implementation of development indicators in the following areas. Based on the results of the monitoring, the management of EP 6B07125 "Electric Power Industry" is preparing a conclusion on the implementation of the Development Plan.

The conclusion is drawn up in any form and sent to the Dean of the Faculty and is the basis for drawing up the annual report of the faculty within the framework of strategic indicators and results for evaluating the Development Strategy of the university as a whole.

The processes of formation, monitoring and implementation of the EP development plan should be based on the principles of openness and transparency. The EP development plan is posted on the official website of the university.

5. Risk management arising in the process of implementing EP 6B07125 "Electric Power Industry"

Name of possible risk	Possible consequences in case of failure to take risk management measures	Risk management measures
1	2	3
Reduction of the contingent of students in the EP	Reduction of the number of students, reduction of the staff of teaching staff	It is necessary to carry out active work on the attractiveness of this specialty in order to attract a new contingent of students on the basis of attracting grants and scholarships to students
Decrease in the output of educational and methodological literature in the state language in specialized disciplines	A possible decrease in the quality of graduates and the assimilation of students in the state language.	Increase in the production of own publications of the UMR faculty of the department according to the content of the EP courses and their acquisition from outside
The outflow of personnel from the education and science system caused by the discrepancy between the level of wages in the industry and the average level of wages in the country	Reduction of scientific potential of teaching staff	Training of scientific personnel through master's and doctoral studies (PhD) on the basis of attracting grants and other sources of funding. Involvement of practical programmers, heads of leading organizations, large companies, etc. in the educational process.
Weak motivation of teaching staff to publish scientific papers in journals with a high citation index	Decrease in the share of teaching staff who have the opportunity to manage scientific projects and graduate works on OPTIMIZATION	To make a plan for publications of teaching staff in foreign publications with a non-zero impact factor with the search for funds from grant projects from the state budget, receiving scholarships for scientific research (the best university teacher)
Decrease in the proportion of students covered by external academic mobility	Reducing the attractiveness of the EP, not mastering the target indicators	Ensuring academic mobility of students and teaching staff on a permanent basis, through joint educational programs with partner

		universities
Insufficient volume of orders for research work from the enterprises of the region	Reduction of the level of commercialization of research works at the university	Expand the search for potential customers for research and development, expand the range of research directions offered by the university

5. Financial support of the EP development plan

Financial support for the implementation of the Development Plan of EP 6B07125 "Electric Power Industry" for 2020-2025 will be provided from the funds of the university, as well as by attracting funds from state and other sources of financing.

Capital and operating costs are assumed.