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PROVISION

**ON THE SCIENTIFIC ACTIVITY PROCESSES MANAGEMENT OF
STUDENTS**

Internal Activity Provision VI-04-2022

Developed by: Leader of the Research Activity Department
L.V. Qvsishcher

L.V. Qvsishcher

Karaganda

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1 Field of application

This Provision establishes requirements for the processes of scientific activity management of students, sets goals and objectives of involvement of the students in research work, determines a general approach and basic principles of organizing students’ research work at the NPJSC “Abylkas Saginov Karaganda Technical University” (hereinafter University).

This Provision is applied by all divisions of Abylkas Saginov Karaganda Technical University and is included in the documents of quality management system.

2 Normative references

This Provision uses references to the following normative documents:

- Standard of the Republic of Kazakhstan ISO 9001-2016 (ISO 9001:2015) “Quality Management System. Requirements”.
- Standard of the Republic of Kazakhstan ISO 9000:2017 (ISO 9000:2015) “Quality Management System. General provisions and glossary”.
- Documented procedure V – 01 - Documented information management.

3 Terms, definitions and abbreviations

Terms, definitions and abbreviations are used in this Provision, according to the Standard of the Republic of Kazakhstan ISO 9001-2017 (ISO 9001:2015) “Quality Management System. General provisions and glossary”:

- ST RK – Standard of the Republic of Kazakhstan;
- QMS – Quality Management System;
- DP – documented procedure;
- RWS – research work of students;
- ERWS – educational and research work of students;
- S&ID – Science and Innovation Department;
- RW – research work;
- SW – scientific work;
- RI – research institute;
- RL – research laboratory;
- RA – research activity;
- AWD – Administrative Work Department;
- STP – scientific and technical program;
- IT – international ties;
- ATS – academic teaching staff;
- QMR – quality management representative;

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- QMS – Quality Management System;
- DAA — Department for Academic Affairs;
- STC – Scientific and Technical Council;
- CQM&A – Center of Quality Management and Accreditation;
- QM – quality manual.

4 Responsibility and authority

4.1 A quality management representative (QMR) and a developer are responsible for introducing the Provision.

4.2 The developer of this Provision is a leader of the Research Activity Department, who is responsible for compliance of the provisions of this Provision with the requirements of the standard ISO 9001 and for managing a procedure.

4.3 Responsibility for organization and coordination of the activities of specific stages fulfillment of the document management process and quality of the final results is born by the leaders of divisions, who are participants of the specific stage execution.

4.4 The leaders of divisions are responsible for safety, unauthorized copying the documents of the quality management system (QMS), located in the division and leakage of restricted information.

5 General provisions

5.1 The research work of students should meet the final goals of training specialists with higher professional education, be a part of the unified educational and scientific complex of the University and be the first stage in the realization of the State program in the field of science.

5.2 A topic of the students' scientific research should be inextricably linked with an educational process, its continuation. As a rule, the topic of the scientific research should be applied, focused on the follow-up professional (production or scientific) activity of a university graduate and solve specific production problems.

5.3 The direct organization of the research work of students at the University is entrusted to the heads of departments, who are guided by the Laws of the Republic of Kazakhstan in this activity: “On Education” [1], “On Science” [2], “Patent Law of the Republic of Kazakhstan” [3]; the Charter of NPJSC “Abylkas Saginov Karaganda Technical University” [4], other normative legal acts of the Republic of Kazakhstan in the field of education and science.

Management of the research work of students at the department (faculty) is carried out by a person, who is responsible for RWS, appointed by the head of department (dean of the faculty) from the teachers of the department, who are on the staff.

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5.4 Organizational and methodological supervision and direct control over the research work of students are carried out by S&ID and DAA.

A map of the research process of students is presented in the Appendix A.

5.5 A purpose and the main tasks of the research work of students.

5.5.1 The purpose of the students' research work is to improve the quality of training specialists with higher education, ensuring their demand in the conditions of market economy.

5.5.2 The research work of students should be aimed at the formation of students' skills in the research work, development of the creative initiative and an ability to apply achievements of the scientific and technological progress in practice, that meets the requirements of training a modern specialist as a researcher (scientist), manager and practitioner.

Involving students in the scientific work allows to receive, in addition to the above, real assistance in the execution of contractual and state budgetary topics of the University, as well as improving a laboratory base, development of the methodological support and solving other problems of the educational process.

5.5.3 The main tasks of RWS are:

- learning scientific methods of obtaining knowledge by students;
- acquaintance of students with research methods, experimental techniques and decision theory;
- acquisition of skills for independent solution of scientific and practical problems;
- acquisition of the work skills in research teams, acquaintance with the methods of organizing their work;
- educating in students the need for creativity, self-education, constant improvement of their knowledge, in-depth and creative learning an education material;
- formation of skills and the need for constant work with native and foreign literature, the ability to work with a patent collection;
- learning modern information technologies and methods of information communication (Internet, e-mail, etc.);
- formation of the scientific approach to assessing the relevance of scientific fields (works), providing real economic, social or spiritual progress of society.

5.5.4 Competitions of the scientific works of students, student scientific conferences, exhibitions of scientific and scientific and technical creativity of students, academic competitions take an important place in the development, improvement of the organization and summing up the results of RWS.

5.6 Organization and planning the students' research work.

5.6.1 The research work of students is directly organized at the departments and scientific divisions of the University (RI, RL).

5.6.2 Academic advising is carried out by academic teaching staff of the

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departments of the University. Researcher workers, engineers, graduate students and doctoral students can also be involved as research advisers of RWS.

5.6.3 The research work of students is divided into an educational and research work, which is included in the educational process and RWS, performed during extracurricular time.

5.6.4 The research work of students, included in the educational process, includes:

- a work of in-depth studying individual sections of the educational program with preparation of papers by students;
- fulfillment of tasks, laboratory works, term and graduation projects (works), containing elements of scientific research;
- fulfillment of the specific non-typical tasks of a research area during the period of job placement or training practice;
- studying theoretical bases of the methodology, organization and execution of the scientific research, planning and organization of a scientific experiment, scientific data processing, etc. as per the course “Fundamentals of Scientific Research”.

The most important type of RWS in the educational process is conducting the scientific research, when carrying out term and graduation projects (works).

5.6.5 The research work of students, carried out during extracurricular time, is organized in the form of:

- a work in the students’ scientific circles;
- group or individual participation of students in the execution of contractual or state budgetary topics, in the works of creative cooperation, carried out at the departments and in the scientific divisions of the University;
- a work in the student design, project, economic, technological, scientific and information, translation and other bureaux, in the creative workshops and studios;
- lectures for the spread of knowledge in the field of science, technology and culture.

5.6.6 The students’ scientific circles are the main, most massive form of involvement of the students in the scientific work during extracurricular time. The students’ scientific circle is a relatively small creative team, united with a work at one or several scientific tasks (problems) and is a part of the research group.

5.6.7 The students’ scientific circles are organized in the general scientific and special departments. Students draw up abstracts and summaries for native and foreign special literature, acquire the skills of making an experiment and processing the obtained results, design and make visual aids, laboratory installations and technical teaching aids, prepare reports which they speak with at the meetings of circles, scientific seminars of the department. The most prepared students are involved in solving more difficult scientific and technical problems. As a rule, the research work of students ends with providing an appropriate report of the performed work and the obtained results in circles.

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The scientific circle can be formed as a subject circle or in speciality.

The subject scientific circle is aimed at solving more difficult problems than those, which are solved in the order of usual studying any discipline, according to a curriculum. Members of the circle can be 1-4 year students.

The students conduct research on scientific topics of the departments in the research circle in speciality. The scientific circles on speciality are mainly organized at the graduating and field-specific departments.

Tasks for scientific research of students must meet general didactic requirements of scientificity, relevance, novelty, correspond to the student's experience, knowledge, skills and abilities.

5.6.8 The organization of the students' scientific circles is mandatory in all departments of the University.

5.6.9 Participation of students in the execution of contractual and state budgetary works is carried out in accordance with the Provision of Science and Innovation Department of the University. Moreover, students-executors can be appointed to the position of a laboratory assistant, technical or engineering staff, depending on the work, which they perform and a training course at the University.

5.6.10 Student design bureaux are created at the University as independent scientific divisions to provide practical assistance to the departments and laboratories of the University, enterprises, scientific organizations in the execution of research, design and other works.

5.6.11 Research, design and creative works, successfully performed by students during extracurricular time and meeting the requirements of the educational programs, can be credited as appropriate laboratory and term works, and other educational tasks.

5.6.12 The research work of students is included in the individual work plans of teachers and general plans of the educational and scientific work of the department. A plan of RWS (Appendix B) is provided to S&ID. The results of the research work of students are specified in the annual report of the University (faculties, departments), in the section “Research work of students” (Appendix C, item 10).

The report of the departments should contain complete information:

- work of the scientific circles (topics of the circles, information about leaders of the circles and students, performed work);
- information about term and graduation projects on the scientific topics (or with elements of scientific research);
- information about held contests, academic competitions, conferences, participation of the students in the contractual and state budgetary works;
- information about publications, submitted applications for inventions and received patents, as well as information about other results of RWS.

5.6.13 The organization and planning the students' research work in the departments must meet the requirements of a multifaceted approach and close

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interconnection of all forms and methods of the scientific work of students, implemented in the educational process and during extracurricular time, as well as the unity of goals and continuity of the research work, when a student transfers from one academic year to another one.

The organization of RWS should provide the continuous participation of students in the scientific work during the entire period of studying at the University.

First year students are involved in the work in the scientific circles at the departments of social sciences and general scientific disciplines.

Second year students are involved in the work of the circles of certain general technical departments of the University. The students can also continue to work on social and economic topics.

Third year students can conduct small independent research and tasks of a creative nature in the scientific areas of the graduating department along with the research in social sciences and fundamental disciplines.

Forth year students study major disciplines and have a closer contact with the teachers of the graduating department, that allows to involve students in the more serious scientific research, to carry out the term project on the scientific topics and the scientific graduation project (work) as the final stage of studying at the University.

5.7 Material support of the students’ research work.

5.7.1 The students, participating in RW, use equipment, instruments and tools of the educational laboratories of the departments and the scientific divisions of the University, where they perform a work.

5.7.2 Necessary material costs, associated with conducting the research work are covered in the prescribed manner, using the funds of the University or using the funds of customers with whom contracts have been concluded.

5.8 Incentives of the students and the research advisers of RWS.

5.8.1 The students and their research advisers can be recommended, in the prescribed manner, for rewarding with cash awards, mementos, diplomas and commendations of the University, gratitude of the Chairman of the Management Board – Rector of the University for success in the research work.

Students-laureates of the republican competition of the scientific works of students are awarded by the Ministry of Education and Science of the Republic of Kazakhstan in accordance with the Provision of the competition.

5.8.2 The students, who combine an active research work with high academic progress, can study according to individual schedules of the curriculum fulfillment, approved by a dean of the faculty.

5.8.3 The students, who have shown abilities in the research work, can be recommended for admission to the master’s degree program.

5.9 Duties of the research adviser and a person, being responsible for RWS at the department.

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5.9.1 The research adviser of RWS forms the scientific circle, determines its direction, draws up a work plan of the circle and tasks for students, assists students in developing a plan and research methodology, recommends literature, monitors and consults students, checks and evaluates a paper (scientific report), assists in preparation of the information for publication of the research results and drawing up applications for inventions.

5.9.2 The research adviser of RWS is responsible for correct scientific and methodological formulation and efficiency of the organization of the work of each student; ensures the participation of students in the scientific conferences of the University, their publication and submitting the applications for inventions, if significant results are received.

5.9.3 The research adviser of RWS must report at the meeting of the department about his work from time to time (at least once a year).

5.9.4 The person, who is responsible for RWS at the department, forms the plan of RWS of the department, determines quantity and direction of the scientific circles together with the head of the department. He carries out the general management of RWS, coordinates the work of research advisers on behalf of the head of the department.

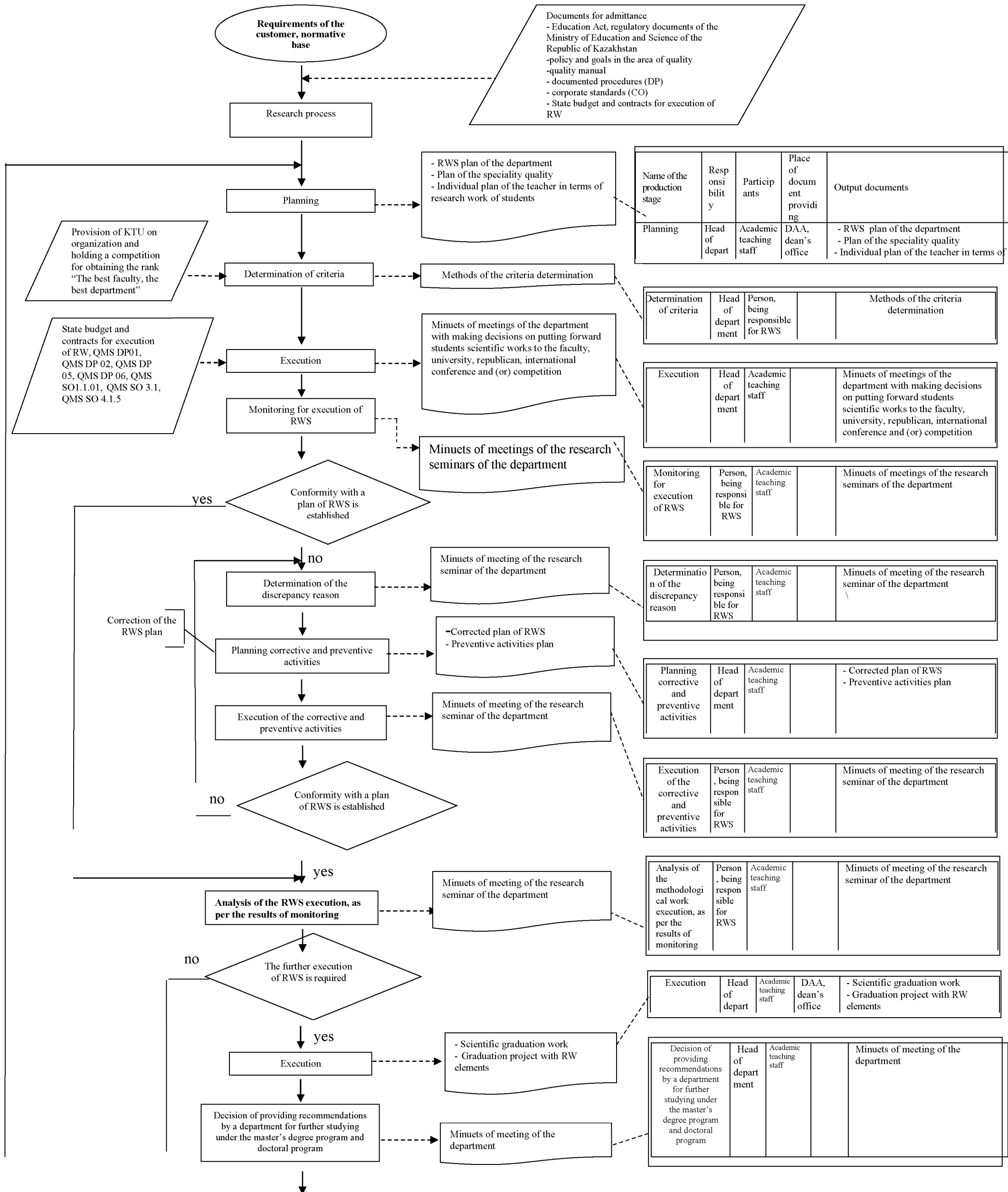
A choice of the scientific field of the department and, as a result, the research work of students should be determined by prioritized and "breakthrough" areas of science, approved for the near future, have a close connection with academic and scientific and technical programs, and projects of various levels, production requests.

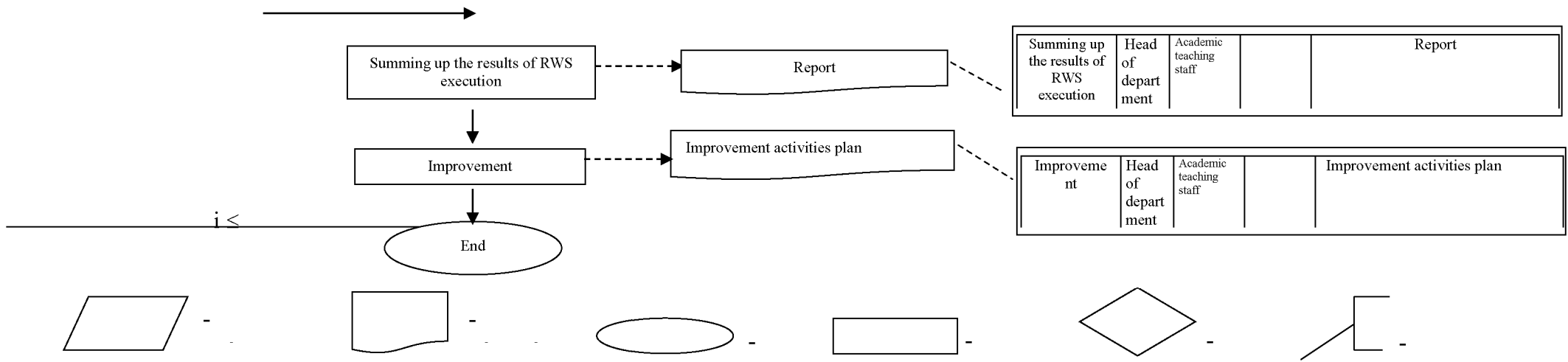
5.9.5 The person, who is responsible for RWS at the department (faculty), organizes the student scientific conferences, the academic competitions and the contests, ensures the active participation of students in the faculty, institute and republican competitions (academic competitions), maintains necessary documents of RWS at the department, prepares references and reports of RWS at the department (faculty).

5.9.6 Conducting the scientific conferences, the academic competitions and the contests at the departments (faculties) is carried out by the faculties independently. A schedule and procedure of conducting, as proposed by the faculties, are approved by relevant orders of the Chairman of the Management Board – Rector of the University.

Appendix A
(informative)

MAP OF THE STUDENTS' RESEARCH PROCESS





RW – research work; RWS – research work of students; P – Provision of NPJSC “Abylkas Saginov Karaganda Technical University”; i – quantity of terms

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Appendix B
(mandatory)

F.IAP- VIII-02-01

Form of the students’ research work plan

PLAN
of the students’ research work of the
department _____ for _____

Item No.	Activities	Period of execution	Executor
1.	Work of the scientific circles <small>(write a name of the scientific circle, full name of the research advisor, work plan)</small>		
2.	Participation in the republican competition of the research works of students		
3.	Holding department’s scientific seminars and conferences		
4.	Publication of the scientific articles		
5.	Participation in the international, republican and regional student conferences		
6.	Participation in the academic competitions, exhibitions		
7.	Preparation of the applications for inventions		
8.	Writing term works and graduation works on scientific topics		

Head of department _____

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Appendix C
(mandatory)

F.IAP- VIII-02-02

Form of the departments’ research activity report

REPORT
of the research activity of the
department _____ for _____

1. Performed scientific works

1) Name of the topic _____

Reason for execution _____

Research advisor _____

Main results _____

2)
(information of all topics of the department)

2. Publication of the research work results

2.1 Books (monographs)

1) _____
(author*, name, publishing house, year, quantity of pages)

2)

2.2 Articles

2.2.1 Publishing office of NPJSC “Abylkas Saginov Karaganda Technical University”

Journal “Works of the University” No. 1, 2022

1) _____
(author*, name, pages)

2)

Journal “Works of the University” No. 2, 2022

1) _____
(author*, name, pages)

2)

*** if there are co-authors (not workers of the department), a place of work of each co-author is specified in brackets after surname, but for students – the group, where they study is specified.**

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Continuation of the Appendix C

Journal “Automation and informatics” No.1, 2022

- 1) _____
(author*, name, pages)
- 2)

2.2.2 Journals, published in the Republic of Kazakhstan

Journal “Industry of Kazakhstan” No.10, 2022

- 1) _____
(author*, name, pages)
- 2)

.....

2.2.3 Journals, published in CIS

Journal “Coal of Ukraine” No.3, 2014

- 1) _____
(author*, name of the article, pages)
- 2)

.....

2.2.4 Journals, published in the countries outside the former Soviet Union

- 1) _____
(author*, name of the article, pages)
- 2)

2.2.5 Collections

- 1) _____
(author*, name of the article, name of the collection, publishing house, year, pages)
- 2)

2.2.6 Deposited materials

- 1) _____
(author*, name of the article (manuscript), number, year, quantity of pages)
- 2)

2.2.7 Advertising leaflets

- 1) _____
(author*, name, publishing house, year, quantity of pages)

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2)

Continuation of the Appendix C
3. Participation in the conferences

3.1. General information

Name of conference	Status	Venue and date	Quantity of presented reports				
			Total	among them			
				with publication	without publication	co-authored with students	student
1. “Science and education is the leading factor of the strategy “Kazakhstan - 2030”	International	Karaganda, NPJSC “Abylkas Saginov Karaganda Technical University”, June, 2022	5	4	1	2	1
.....							
“Student and scientific and technical progress”	Student, inter-university, regional	Karaganda, NPJSC “Abylkas Saginov Karaganda Technical University”, May, 2022	7	5	2	—	7

3.2 Publication of the scientific reports

Works of the international scientific conference “Science and Education is the leading factor of the strategy “Kazakhstan -2030”

1) _____
(author*, name of the scientific report, pages)

2)

Works of the international scientific and practical conference “Topical problems of the mining and metallurgical complex of Kazakhstan”

1) _____
(author*, name of the scientific report, pages)

2)

3.3 Information about scientific reports without publication

(name of the conference)

1) _____
(author*, name of the scientific report)

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2)

3.4 Awards, received at the conferences

1) _____
(author*, name of the conference, type of award)

2)

Continuation of the Appendix C 4. Participation in the exhibitions

Specify:

- a name of the exhibition, its status, venue;
- a name of the exhibit;
- full names of the designers;
- results of participation in the exhibitions.

5. Inventive activity

a) Submission of the applications

Name	Author*	Applicant	Date of the application submission
1. Rail bending device	Ivanov P.S., Zhakenov N.S. (st. PT-98-1)	NPJSC “Abylkas Saginov Karaganda Technical University”	02.05.2022

b) Receipt of patents

Name	Author*	Patentee	Number of the patent (precautional patent), country
1. Method of water purification	Karelin D.Z., Travkin S.K. (Karaganda Buketov University)	Karaganda Buketov University	10537 RK

6. Defense of the dissertations

Specify a surname of the person, who defended a dissertation and his research advisor, where and when the dissertation was defended, a topic of the dissertation and a code of the specialty.

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7. Academic degrees, ranks, election in the academy of sciences and awards, received by the staff of the department

Specify surnames and academic degrees, ranks and so on, which were received by them.

8. Participation in competitions of the execution of research works

Specify a name of the competition, a name of the project, a full name of the research advisor.

9. International activity

Contracts, relations, results

10. Research work of students

A short description of the research work of students (circles, research advisors, results). The introduction of scientific achievements into the educational process. Execution of the term and graduation projects, related to scientific topics. Organization and participation in the academic competitions, contests and conferences, received awards.

Continuation of the Appendix C

Quantitative indicators of the research activity

department _____ for _____

Item No	Full name of the teachers, graduate students, postgraduate students and research workers of the department (full staff of the department)	position	academic degree	academic rank	Participation in the research work, quantity of topics			Publication of the research work results,* quantity								Participation in the conferences,* quantity of scientific reports			Inventions*		Research work of students				
					as per contracts	from the state budget	within the framework of department	books (monographs)	in the periodicals		collections	depositing	advertising leaflets	regional	republican	international		submitted applications	received patents	quantity of students in the student scientific society	quantity of competition works				
									Republic of Kazakhstan	journals of the Republic of Kazakhstan						Republic of Kazakhstan	CIS					countries outside the former Soviet Union	Republic of Kazakhstan	CIS	countries outside the former Soviet Union
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
EXAMPLE																									

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1	Ivanov P.F.	asso ciate prof essor	k	d	3	1	-	-	-	-	-	-	-	-	-	1/-	1/-	1/1	-	-	1/-	1/-	-	1	2
2	Sidorov I.Y.	prof essor	d	p	2	2	1	1	4/1	1/-	1/-	1/-	-	-	-	1/-	-	-	-	-	1/-	2/-	-	4	1
TOTAL on department																									
			6	6	5	3	1	1	8/2	4/1	5/1	1/-	-	-	2/-	3/1	2/1	5/4	4/2	1/1	3/-	4/1	2/-	6	4

Head of department _____

* The total number of publications, scientific reports, applications (patents) are specified in the numerator;
the denominator includes the works, co-authored with someone or authors of which are students.

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List of literature

- [1] Education Act of the Republic of Kazakhstan, dated June 27, 2007 No.319
(with amendments and additions as of 04.07.2022);
- [2] Science Act of the Republic of Kazakhstan, dated February 18, 2011 No.408-
IV *(with amendments and additions as of 04.07.2022)*;
- [3] Law of the Republic of Kazakhstan, dated July16, 1999 No. 427-I. “Patent
Law of the Republic of Kazakhstan” *(with amendments and additions as of
04.07.2022)*;
- [4] Charter of NPJSC “Abylkas Saginov Karaganda Technical University”.