NON-PROFIT JOINT STOCK COMPANY "KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY NAMED AFTER K.I. SATPAEV"

Mining and Metallurgical Institute named after O.A. Baikonurov

"I affirm"
Director of the Mining and
Metallurgical Institute named after O.A.
Baikonurov
_____ **Rysbekov K.B.**
"__" _____ **2023**

Annual report
Mining and Metallurgical Institute named after O.A. Baikonurov
for the 2022 – 2023 academic year

2023

Content

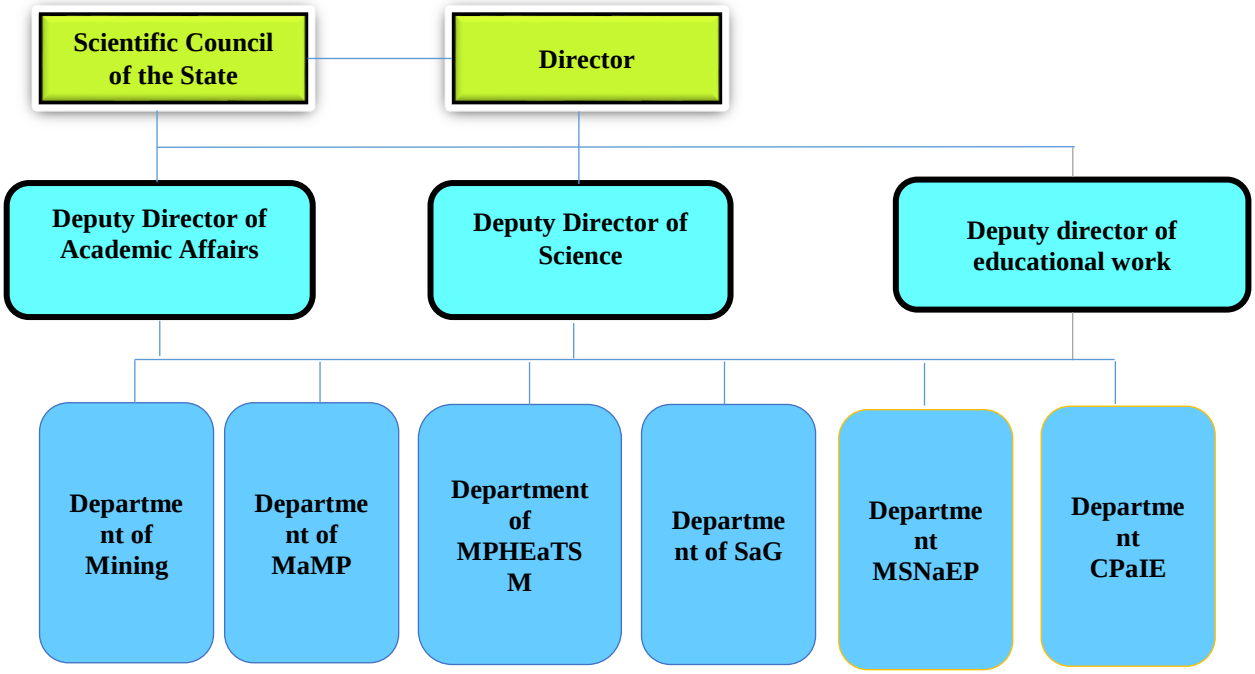
1 General characteristics of the Institute

1.1Structure of the Mining and Metallurgical Institute

The Mining and Metallurgical Institute named after O.A. Baikonurov is a structural unit of the NJSC "Kazakh National Research Technical University named after K.I. Satpayev", which implements the main educational programs of higher and postgraduate education, carries out training of scientific and pedagogical personnel, research, international , educational, methodological and other types of activities.

Currently, the Institute has six departments: “Mining”, “Metallurgy and mineral processing”, “Metallurgical processes, heat engineering and technology of special materials”, “Mine surveying and geodesy”, “Materials science, nanotechnology and engineering physics” and “ Chemical processes and industrial ecology.”

Institute structure



1.2 Educational programs,on which training is conducted at the Institute

Table1–List of educational programs

No.	Code and name of the educational program group	Code and name of the educational program
Bachelor's degree		
1	B051 – Environment	6B05206 – Engineering ecology
2	B060 – Chemical Engineering and Processes	6B07110 – Chemical and biochemical engineering
3		6B07116 – Technology of main production and new materials
4	B061 – Materials Science and Technology	6B07109 – Engineering physics and materials science
5	B069 – Production of materials	6B07207 – Engineering physics and materials

	(glass, paper, plastic, wood)	science
6	B071 – Mining and mineral extraction	6B07203 – Metallurgy and mineral processing
7		6B07205 – Mining engineering
8		6B07213 – Mineral Processing
9	B074 – Urban planning, construction work and civil engineering	6B07303 – Geospatial digital engineering
10	B075 – Cadastre and land management	6B07304 – Geospatial digital engineering
Master's degree		
1	M090 – Physics	7M05301–Applied and engineering physics
2	M097 – Chemical Engineering and Processes	7M07110–Chemical processes and production of chemical materials
3		7M07143–Chemical technology of inorganic substances
4	M101 – Materials Science and New Materials Technology	7M07103–Materials science and technology of new materials
5	M116 – Mining Engineering	7M07203–Mining Engineering
6	M117 – Metallurgical Engineering	7M07204–Metallurgy and mineral processing
7		7M07201–Automation and digitalization of metallurgical processes
8	M118 – Mineral beneficiation	7M07226 – Mineral processing
9	M120 – Mine Surveying	7M07210 – Geospatial digital engineering
10		7M07227 – Mine surveying
11	M123 – Geodesy	7M07306 – Geospatial digital engineering
Doctoral studies		
1	D087 – Environmental Technology	8D05201 – Bioecological ecology
2	D090 – Physics	8D05301 – Applied and engineering physics
3	D097 – Chemical Engineering and Processes	8D07109 – Innovative technologies and new inorganic materials
4	D101 – Materials Science and Technology of New Materials	8D07103 – Materials science and engineering
5	D108 – Nanomaterials and nanotechnologies	8D07114 – Nanomaterials and nanotechnologies"
6	D116 – Mining Engineering	8D07203 – Mining engineering
7	D117 – Metallurgical Engineering	8D07204 – Metallurgical engineering
8	D118 – Mineral beneficiation	8D07201 – Mineral processing
9	D123 – Geodesy	8D07306 – Geospatial digital engineering

Note. Fill out the table for the reporting period

1.3 Staff of the Institute

The department is the main educational and scientific structural unit of the institute, carrying out educational, methodological and research work in one or more related disciplines, educational work among students, as well as training of scientific and pedagogical personnel and improving their qualifications.

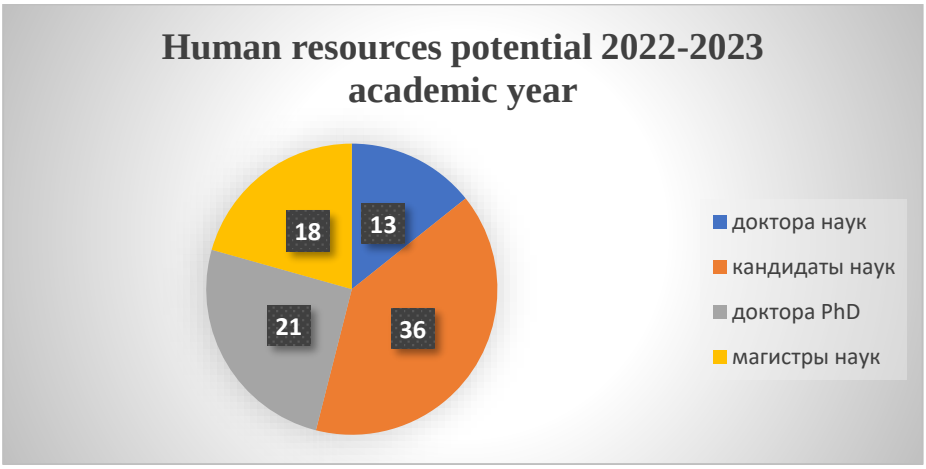
The teaching staff of the institute's departments of basic education and scientific specialty corresponds to the profile of undergraduate, master's and doctoral programs.

The staff of the department is determined based on the standard teaching load and current methodological recommendations for planning the teaching load.

The number of teaching staff for the 2021-2022 academic year was only 78, of which 63 are full-time, 9 doctors of science, 25 candidates of science, 16 PhD doctors, 13 masters. Degree of teaching staff -79.3% (excluding masters), average age – 49.9.

The number of teaching staff for the 2022-2023 academic year is only 110, of which 88 are full-time, 13 doctors of science, 36 candidates of science, 21 PhD doctors, 18 masters.76.6% (excluding masters), average age – 46.5.

Both in terms of personal experience in scientific and pedagogical work, and in terms of age composition, teaching staff of departments are capable of conducting fruitful research activities.



Problems: Not a high degree of regularity in certain departments

Table2 – Quantitative and qualitative composition of the teaching staff

Name of the department	TotalTeaching staff/ of them staff	Acceptedto a university on a contract basis		Doctors of Science, professors/of them full-time	Candidatessciences, associate professors/of them full-time	% with academics degrees and titles/ of which staff.	Doctor PhD	Part-timers		Hourly workers	Members of the nationalAcademy of Sciences	Teaching staff with basic education	Full staffing of teaching staff. disp. V %	Experience in scientific and pedagogical work			Averageage teaching staff		
		Total	with academic degrees and					Total	with academic degrees and					Up to 5 years	5-15 years	Over15 years	Up to 35 years old	35-50 years	Over50 years / of which pension
Mining	18/16	18	14	4/3	8/8	89/94	4	2	1		1	100	100	2	6	10	4	8	0/6

Materials Science, Nanotechnology and Engineering Physics	12/7	7	5	1/1	5/3	66/ 71.4	2	5	3	1	-	100	100	1	7	4	2	9	1/1
Mine surveying and geodesy	33/25	25	17	4/4	7/7	50/63.6	6	9	2	4	-	100	100	3	4	2	6	8	1/6
Metallurgy and mineral processing	16/13	13	13	-	8/8	81.2/100	5	3	0	2	-	100	100	0	6	7	3	6	0/5
Metallurgical processes, heat engineering and	11/7	7	7	1/1	2/2	63/85.7	3	4	1	2		11	100	0	4	7	2	5	0/1
Department of Chemical Processes and Industrial Ecology	20/20	20	13	4/4	8/8	64/64	1	1	-	3	-	100	100	-	6	15	2	7	3/6
Total for the institute	**110/88**	**90**	**69**	**14/13**	**38/36**	**69/79.8**	**21**	**24**	**7**	**12**	**1**	**100**	**100**	**6**	**33**	**45**	**19**	**43**	**5/19**

Personnel composition of the State Medical Institute for the 2022-2023 academic year

No.	Job title	Mining	MaMP	MPHEaTSM	MSNaEP	SaG	CPaIE	TOTAL
Staff members								
1	Head of the department	1.50	1.50	1.25	1.00	1.50	1.00	7.75
2	Professor	4.75	3.50	0.25	1.00	4.75	4.00	18.25
3	Associate Professor	7.50	4.25	2.75	1.75	11.50	5.50	33.25
4	Senior Lecturer	5.50	4.50	2.00	1.50	8.75	4.50	26.75
5	Teacher					1.50	4.00	5.50
6	Assistant				3.00	1.50		4.50
	Total:	19.25	13.75	6.25	8.25	29.50	19.00	96.00
Part-timers								
1	Professor	0.50			1.00			1.50
2	Associate Professor			0.25	0.50	0.50		1.25
3	Senior Lecturer			0.25	0.50	3.50		4.25
4	Teacher	0.25	0.50					0.75
5	Assistant		0.75	0.50	0.50			1.75
	Total:	0.75	1.25	1.00	2.50	4.00	0.00	9.50
Directorate								
1	Director					1.25		1.25

2	Deputy Director					3.50		3.50
	Total:	**20.00**	**15.00**	**7.25**	**10.75**	**38.25**	**19.00**	**110.25**
	average age as of 09/01/2022	49	49	45	41	44	51	
	number of full-time teaching staff	16	13	7	7	22	22	87

The main target in the field of human capital development of the institute is to reduce the average age and maintain a high degree of teaching staff.

Holders of the titleThe Republican competition “Best University Teacher - 2022” was:

1. Rysbekov Kanai Bakhytovich;
2. Chepushtanova Tatyana Aleksandrovna;
3. Orynbasarova Elmira Orynbasarovna;
4. Abildina Ainaz Kairatovna;
5. Koishina Gulzada Myngyshkyzy

A total of 775 applicants from 71 higher educational institutions of the country took part in the competition. The competition assessed such indicators as the development and publication of electronic educational resources, educational materials, scientific publications in domestic and international journals, the presence of patents for inventions, etc. The quality of the applicant’s teaching, his work in training personnel in bachelor’s, master’s and doctoral programs were also assessed.”

The academic title “Professor” in the field of Metallurgy was awarded to Nurlan Kalievich Dosmukhamedov (Order No. 92 of November 24, 2022 “On the award of the academic title”).

Awarded the academic title of “Professor” in the fieldGeodesy and surveyingRysbekov Kanai Bakhytovich (Order No. 10 of January 19, 2023 “On the award of an academic title”).

The academic title “Associate Professor” in the field of Environmental Engineering was awarded to Madina Bogembaevna Barmenshinova (Order No. 126 of March 17, 2023 “On the award of the academic title”).

Table3–Promotionqualifications by specialists of the Institute

Calendaryear	Quantitypeople who have undergone advanced training			
	Totalteaching staff	Totalpersonnel	Completed advanced trainingin leading universities, enterprises, organizations	
			teaching staff	Staff
2022	16 Mining	4 Mining	1	-
2023	16 Mining	4 Mining	7	-
2022	9 MaMP	2 MaMP	23	4
2023	9 MaMP	2 MaMP	15	-
2022	7 MPHEaTSM	2 MPHEaTSM	1	2
2023	7 MPHEaTSM	2 MPHEaTSM	3	-

2022	7 (MSNaEP)	2 (MSNaEP)	14	4
2022	26 (SaG)	3 (SaG)	16	-
2023	26 (SaG)	3 (SaG)	25	-
2023	12 (CPaIE)	8 (CPaIE)	23	27
TOTAL	**77 (PPS)**	**21 (UVP)**	**128**	**37**

MaMI teaching staff actively undergo advanced training at enterprises and leading foreign universities, such as: Guedik University (France), Ohio State University (USA), New Delhi (India), Freiberg Mining Academy (Germany).

1.4 Implementation of the plan for the transition to trilingual education

Preparation for admission of students to the 1st year of study in the 2023-2024 academic year in the English-language department will be introduced according to the following educational programs:

- 6B07205 – Mining engineering;
- 6B07303 – Geospatial digital engineering;
- 6B07310 – Land management and cadastre;
- 7M07103 – Materials science and technology of new materials (2 g);
- 7M07203 – Mining engineering (2 g);
- 7M07201 – Automation and digitalization of metallurgical processes (2 g);
- 7M07204 – Metallurgy and mineral processing (2 g);
- 8D07103 – Materials science and engineering;
- 8D07114 – Nanomaterials and nanotechnologies;
- 8D07203 – Mining engineering;
- 8D07204 – Metallurgical engineering

1.5 Introduction of elements of dual training

According to the instructions announced by the Minister of Education and Science on May 20, 2021 regarding the implementation of dual training, the departments of “Metallurgy and Mineral Processing”, “Metallurgical Processes, Heat Engineering and Technology of Special Materials”, “Chemical Processes and Industrial Ecology” concluded Agreements onorganizing dual training and practice with KazFerroStal LLP, Balausa Firm LLP,Shin-Line Company, Kazphosphate LLP.

No.	Business name	Agreement (agreement number, date)	Department	Note
1	KazFerro Steel LLP	No. 744 dated November 2, 2021	MaMP	for OP6B07203 and7M07204– Metallurgy and mineral processing
2	Firma Balausa LLP	No. 26 11/16/2022	MPHEaTSM	for OP6B07203 and7M07204– Metallurgy and mineral processing
3	Shin-Line Company	Memorandum No. 08-118IR dated 08/31/2021	CPaIE	20 students from 13.03-17.03.2023
4	Kazphosphate LLP	No. 686/4577/21-IR	CPaIE	2 students from 27.03-08.04.2023

		dated 01.11.2021		
5	Leica Geosystems Kazakhstan LLP	No. 416 from 08/25/2021	SaG	Students undergo practical classes according to schedule
6	NPP Interrin LLP	No. 03-03 from 03/01/2022	Mining	Training in bachelor's, master's, MBA, EMBA, doctoral programs and advanced training for employees of ANTAL LLP, INTERRIN LLP
7	Antal LLP	No. 08-33 from 08/22/2022	Mining	

1.6 Double degree programs

One of the priority areas for the integration of Kazakhstani higher education into the international educational space is certainly double-diploma education.

In 2023, the Mining and Metallurgical Institute entered into agreements with Tomsk Polytechnic University (RF) for the following joint EP double-degree education:

- 7M07103 – Materials science and technology of new materials;
- 7M07110 – Chemical processes and production of chemical materials;
- 7M07204 – Metallurgy and mineral processing;
- 7M07226 – Mineral processing.

In 2024, it is planned to conclude agreements with the following foreign universities.

1. Technical University Freiberg Mining Academy /Technische Universität Bergakademie Freiberg;
2. Pennsylvania State University;
3. Istanbul Technical University / Istanbul Technical University;
4. National Technical University of Athens / Εθνικό Μετσόβιο Πολυτεχνείο.

in the following double-diploma educational programs:

- 7M05202 – Bioecological engineering.
- 7M07103 – Materials science and technology of new materials;
- 7M07203 – Mining engineering;
- 7M07204 – Metallurgy and mineral processing;
- 7M07226 – Mineral processing;
- 7M07227 – Mine surveying;
- 7M07306 – Geospatial digital engineering;

List of joint double-degree educational programs with foreign universities

No.	Code and name of OP	Partner university
1	7M07103 – Materials science and technology of new materials	National Research Tomsk Polytechnic University, 2023. (RF) (Top - 398 QS rating)
	7M07204 – Metallurgy and mineral processing	
	7M07226 – Mineral processing	
	7M07110–Chemical processes and production of chemical materials	
2	7M07204 – Metallurgy and mineral processing	NUST MISIS (Moscow Institute of Steel and Alloys) (in progress).

2 Educational and methodological work

According to the approved Work Plan of the departments and the Mining and Metallurgical Institute for the 2022-2023 academic year, the following activities for educational and educational work were carried out:

- Calculation of hours was carried out for the disciplines of the departments;
- the teaching load of teachers was distributed;
- Individual work plans for teaching staff of departments were drawn up;
- Work is constantly being carried out to form and update the staff of teaching staff and departments of higher education;
- monthly meetings of the Institute's Academic Council were held, where current and future issues were discussed;

At the meetings of the departments and the Academic Council of the Institute, the following issues were considered:

- On the tasks of the department and institute to improve educational and educational work;
- Approval of the Syllabus for the disciplines of the fall and spring semesters;
- Making changes to the working curricula of educational programs;
- Discussion, approval of individual work plans for teachers, advisers and reports on their implementation.
- Discussion, approval and reports on the implementation of the organizational work plan for graduation design.
- Discussion of the results of the internal review and approval of test questions for final exams in the disciplines of the fall and spring semesters.
- Discussion of the results of midterm control of students' knowledge.
- On preparation for the winter and spring examination sessions of the 2022-2023 academic year.
- Analytical reports on the results of the examination session of the autumn and spring semesters.
- Organization of educational, industrial and pre-diploma internships for students.

Currently, working curricula (RUP) and Modular educational programs (MEP) for the 2023-2024 academic year have been developed and prepared for approval in the areas of training levels: bachelor's, master's and PhD doctoral studies.

The Institute takes all necessary measures to improve the quality of training of personnel in the industrial sector of the Republic of Kazakhstan. To achieve this, fundamental changes have been made to the educational process of the institute.

As part of the Atlas of New Professions, departments have developed new EPs approved by ESUVO experts.

6B07116 – Technology of main production and new materials;
6B07218 – Foundry technology;
6B07213 – “Mineral prossesing”;
6B07217 – Technology of rare and radioactive elements;
6B07212 – Recycling in metallurgy;
6B07219 – Metallurgy of non-ferrous metals;

7M07143 – Chemical technology of inorganic substances;
7M07324 – Land management.
7M07229 – Extractive metallurgy (process)

The departments have prepared three Additional educational programs (Minor).

2.1 Informationabout admission, student population and graduation by levels of training

The main contingent of the institute (90%) studies on an educational state grant, (10%) - on a paid basis.

Table 4 – Indicators of enrollment of students in the Institute's EP

Educational programs		Acceptance rates								
		2020-2021 academic			2021-2022			2022-2023		
Code	Name	Totalapplications to reception.com.	Enrolledto university	Average UNT or CT score	Totalapplications to reception.com.	Enrolledto university	Average UNT or CT score	Totalapplications to reception.com.	Enrolledto university	Average UNT or CT score
Bachelor's degree										
6B05206 – Engineering ecology		-	-	-	21	21	-	40	40	-
6B07109 – Engineering physics and materials science		20	20	-	18	18	-	8	8	-
6B07203 – Metallurgy and mineral processing		41	41	-	36	36	-	25	25	-
6B07205 – Mining engineering		40	40	-	46	46	-	26	26	-
6B07213 – Mineral Processing		-	-	-	-	-	-	16	16	-
6B07303 – Geospatial digital engineering		28	28	-	70	70	-	44	44	-
6B07304 – Geospatial digital engineering		172	172	-	251	251	-	201	201	-
Master's degree										
7M05301 – Applied and engineering physics		-	-	-	3	3	-	3	3	-
7M07103 – Materials science and technology of new materials		6	6	-	6	6	-	4	4	-
7M07110 – Chemical processes and production of chemical materials		-	-	-	6	6	-	3	3	-
7M07143 – Chemical technology of inorganic substances		-	-	-	-	-	-	1	1	-
7M07201 – Automation and digitalization of metallurgical processes		-	-	-	-	-	-	4	4	-
7M07203 – Mining engineering		-	-	-	18	18	-	28	28	-
7M07204 – Metallurgy and mineral processing		5	5	-	5	5	-	9	9	-
7M07210 – Geospatial digital engineering		4	4	-	2	2	-	-	-	-

7M07223 – Metallurgy and mineral processing	12	12	-	5	5	-	2	2	-
7M07226 – Mineral processing	-	-	-	-	-	-	6	6	-
7M07227 – Mine surveying	-	-	-	-	-	-	6	6	-
7M07306 – Geospatial digital engineering	16	16	-	18	18	-	13	13	-
Doctoral studies									
8D05201 – Bioecological engineering	4	4	-	2	2	-	-	-	-
8D05301 – Applied and engineering physics	-	-	-	2	2	-	2	2	-
8D07103 – Materials science and engineering	3	3	-	3	3	-	3	3	-
8D07109 – Innovative technologies and new inorganic materials	2	2	-	2	2	-	3	3	-
8D07203 – Mining engineering	5	5	-	7	7	-			
8D07204 – Metallurgical engineering	6	6	-	6	6	-	7	7	-
8D07306 – Geospatial digital engineering	4	4	-	6	6	-	5	5	-
Total for the Institute:	**368**	**368**	**-**	**533**	**533**	**-**	**459**	**459**	

The graduation rate in 2022 was: 181 bachelors, 71 masters, 20 PhD students.

The graduation rate in 2023 was: 265 bachelors, 47 summer master's students, 24 PhD students.

Table5 – Characteristics of the student population by specialty of higher and postgraduate education

Level:Bachelor's/Master's/Doctoral studies Form:full-time

Educational programs		Acceptance rates								
		2020-2021			2021-2022			2022-2023		
Code	Name	Total	Grant	Paid student	Total	Grant	Paid student	Total	Grant	Paid student
Bachelor's degree										
6B07203	Metallurgy and mineral processing	41	31	10	32	30	2	25	22	3
6B07205	Mining Engineering	49	49	-	50	48	2	26	21	5
6B07109	Engineering Physics and Materials Science	20	20	-	18	18	-	8	8	0
6B07303	Geospatial Digital Engineering	31	27	4	76	76	0	44	43	1
6B07304	Geospatial Digital Engineering	217	202	15	278	271	7	201	195	6
6B05206	Engineering ecology							40	36	4
6B07213	Mineral Processing							16	14	2
Master's degree										
7M05301	Applied and engineering physics							3	3	
7M07103	Materials science and technology of new materials	6	6	-	6	6	-	4	2	2

7M07110	Chemical processes and production of chemical materials							3	1	2
7M07143	Chemical technology of inorganic substances							1	1	
7M07201	Automation and digitalization of metallurgical processes							4	4	
7M07203	Mining Engineering	-	-	-	18	18	-	28	28	
7M07204	Metallurgy and mineral processing	5	5	-	5	5	-	9	9	
7M07223	Metallurgy and mineral processing	12	12	-	5	5	-	2	2	
7M07226	Mineral beneficiation							6	6	
7M07227	Surveying business							6	6	
7M07215	Mining Engineering (1 year)	5	5	-	-	-	-			
7M07306	Geospatial Digital Engineering	16	16	-	18	18	-	13	13	
7M07210	Geospatial Digital Engineering	4	4	-	2	2	-			
Doctoral studies										
8D05301	Applied and engineering physics	-	-	-	2	2	-	2	2	-
8D07103	Materials Science and Engineering	3	3	-	3	3	-	3	3	-
8D07109	Innovative technologies and new inorganic materials	2	2		2	2		3	3	-
8D07203	Mining Engineering	5	5	-	7	7	-	7	7	
8D07204	Metallurgicalengineering	6	6	-	6	6		8	8	
8D07306	Geospatial Digital Engineering	4	4	-	6	6	-	5	5	

Table7 – Number of graduates in the specialty of the Institute of full-time study

Level:Bachelor's/Master's/Doctoral studies

Name of OP	Academic year		
	2020-2021 academic year	2021-2022 academic year	2022-2023 academic year
Bachelor			
5B070700 – “Mining”	100	54	-
5B070900 – “Metallurgy”	12	28	-
5B071100 – “Geodesy and cartography”	18	80	-
5B072300 – “Technical physics”	5	9	-
5B073700– “Beneficiation of mineral resources”	2	1	-
6B07207 – “Engineering physics and materials science”	8	6	4
6B05205 – “Chemical and biochemical engineering”	-	-	18
6B07109 –"Engineering Physics and Materials Science"	-	-	32
6B07203 – “Metallurgy and mineral processing”	-	-	62
6B07205 – “Mining engineering”	-	-	70
6B07207 – “Engineering physics and materials science”	-	-	4
6B07303 – “Geospatial digital engineering”	-	-	28
6B07304 – “Geospatial digital engineering”	-	-	51
Master's degree			
7M05301 – “Applied and engineering physics”	8	7	3
7M07203 – Mining engineering	-	20	10
7M07204–Metallurgy and mineral			10

processing			
7M07210 – Geospatial digital engineering			1
7M07223–Metallurgy and mineral processing	6	4	5
7M07306 – Geospatial digital engineering			12

Table8 – Movement of the contingent of full-time andremoteforms of education

Indicators	For the academic
Total number of students arrived:	3
including: - transferred from other universities	-
- restored and others	3
- on academic leave	6
Dropped outtotal students:	63
including: - transferred to other universities	15
- transferred to other forms of education in this educational institution	1
- at your own request	39
- due to poor academic performance	7
- other	-
- for violation of academic discipline and terms of the contract	-

Note. Fill out the table for the reporting period

Academic leave – 13 students (Tursunova Zh.U., Paltusheva Zh.U., Mendigali A.K., Mukhanbediyarova A.M., Saduev A.O., Mukashev E.S., Zhambyl K.O., Bulat A.N., Uspanova A. M., Sisenov A.B., Rabaev A.Ə., Sarsenova S.A., Zakenov T.K., Zhumabaeva A.A.)

Table9 – Students' ability to graduate (full-time study)

No.	Code and name of OP	Accepted for 1st year	Arrived during the training period	release	in % of the admitted contingent for 1st year	Note
1	6B07110 – Chemical and biochemical engineering	20		18	90%	
3	6B07109 – Engineering physics and materials science	40		34	85%	
4	6B07207 – Engineering physics and materials science	10		4	40%	
5	6B07203 – Metallurgy and mineral processing	68		61	90%	
6	6B07205 – Mining engineering	75		69	92%	
7	6B07303 – Geospatial digital engineering	30		28	93%	
8	6B07304 – Geospatial digital engineering	51		49	96%	
9	7M05301–Applied and engineering physics	3		2	67%	

10	7M07110–Chemical processes and production of chemical materials	6		6	100%	
15	7M07203–Mining Engineering	10		10	100%	
16	7M07204–Metallurgy and mineral processing	10		10	100%	
19	7M07210 – Geospatial digital engineering	1		1	100%	
	7M07223 - Metallurgy and mineral processing	5		4	80%	
21	7M07306 – Geospatial digital engineering	13		12	92%	
	Total	342		308	90%	

2.2 Teaching load

Teaching load of the departments of the O.A. Baikonurov Mining and Metallurgical Institutefor the 2022-2023 academic year is presented below.

Table10 – Fulfilling the teaching load of teaching staff for the 2022-2023 academic year

No.	Name of departments	Qtyteaching staff		Plannedload		Performance			
		state	part-timers	Total	incl. lectures	Total	%	Incl. lectures	%
1	Mining	16	2	485.5	173	485.5	100.0	173	100.0
2	Mine surveying and geodesy	22	8	990.5	224	990.5	100.0	224	100.0
3	Metallurgy and mineral processing	13	3	428.5	184	428.5	100.0	184	100.0
4	Metallurgical processes, thermal engineering and special materials technology	7	4	144.5	88	144.5	100.0	88	100.0
5	Materials Science, Nanotechnology and Engineering Physics	7	5				100.0		100.0
6	Chemical processes and industrial ecology	21	-				100.0		100.0
	Totalby the Institute								

Note:1. Provide explanations for the facts of overfulfillment and underfulfillment of the planned teaching load. 2.Fill out the table for the reporting period.

2.3 Analysis of resultsstudent performance (according to educational programs)

Interim certification of students is carried out in accordance with the curriculum and training programs according to the approved schedule.

After each session, the academic performance of students is analyzed by department teachers. The results of the session are also analyzed by management and a correction plan is drawn up in accordance with the identified negative phenomena.

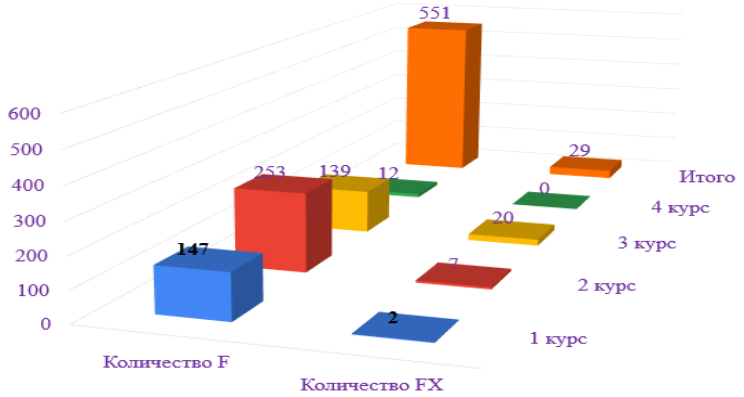
The educational process at all levels of educational programs is conducted using credit technology in the state (82%) and Russian (18%) languages.

The main contingent of the institute (90%) studies on an educational state grant, (10%) - on a paid basis. The number of students studying from rural areas (66.2%)

The spring examination session was held according to the Academic calendar of KazNRTU named after K.I. Satpayev from May 2 to May 19, 2023. Below is the number of students who received grades of “F” in the following disciplines.

Comparative analysis of student performance

Discipline	Number of students receiving an “F” grade for the fall semester of the 2022-2023 academic year.	Number of students receiving an "F" grade for the spring semester 2022-2023 academic year.
Mathematics	45	36
Physics	19	17
general chemistry	11	11
Information and communication technologies	33	14
Russian language, Kazakh language	17	11
English language	9	9
Engineering and computer graphics	19	17
Philosophy	28	-
Basics of cadastre	-	37
Theoretical foundations of land management	-	22
In different disciplines	402	-
TOTAL	583	551

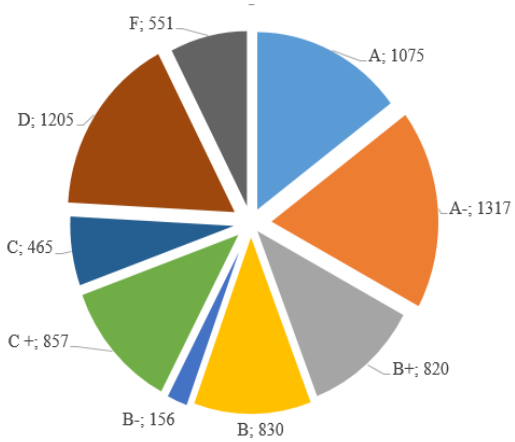


	Количество F	Количество FX
1 курс	147	2
2 курс	253	7
3 курс	139	20
4 курс	12	0
Итого	551	29

As can be seen from the diagram, the largest number of “F” grades are among 2nd year students, followed by 1st year students, and then 3rd year students. The number of “FX” grades at the institute was 29, of which 20 in the 3rd year and 7 in

the 2nd year.

Letter distribution of grades for the spring semester 2022-2023 academic year



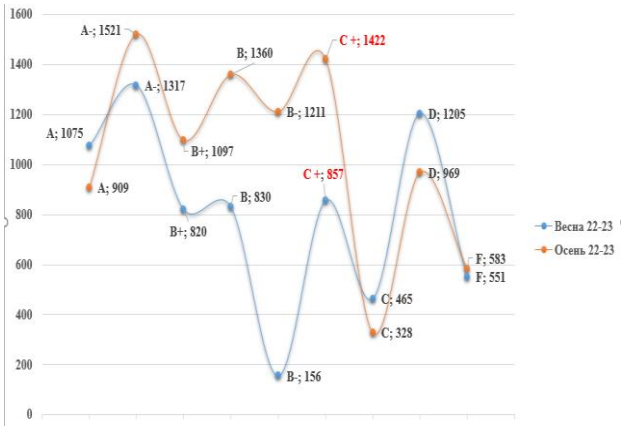


Table 11 - Information on absolute academic performance and quality indicators of the autumn and spring sessions of the 2022-2023 academic year in the EP

Code and name of educational programs	Absolute performance	Quality index	Absolute performance	Quality index
	Autumn semester 2022/2023		Spring semester 2022/2023	
6B07203 – Metallurgy and mineral processing	77	32	81	33.6
6B07205 – Mining engineering	81.3	35.2	82.4	36.5
6B07207 – Engineering physics and materials science	89.2	37.3	83	35.4
6B07109 – Engineering physics and materials science	87.1	34	86.2	37.1
6B07303 – Geospatial digital engineering	80.2	36.1	79.3	32.1
6B07304 – Geospatial digital engineering	81.3	34	79.5	36.1
6B05206 – Engineering ecology	84.6	33.7	83.2	35.2
6B07213 – Mineral processing	75	31.2	73.2	34.5

Information on absolute academic performance and quality indicators of the autumn and spring sessions of the 2022-2023 academic year by courses

Well	Absolute performance	Quality index	Absolute performance	Quality index
	Fall semester 2022/2023		Spring semester 2022/2023	
1 course	76.5	26.4	71.3	22.3
2nd year	79.5	32.1	82.2	37.1
3rd year	85.6	35.7	83.4	38.2
4th year	84.7	42.1	82.6	41.2
MaMI	81.5	34.07	79.8	34.7

Analyzing the results of the autumn and spring examination sessions for MaMI, it can be noted that the absolute academic performance (taking into account students who successfully passed the exams without debt) was:

Fall semester

for 1st course –76.5%;
for 2nd year –79.5%;
in the 3rd year – 85.6%;
in the 4th year – 84.7%;
Spring semester
for 1st course –71.3%;
for 2nd year –82.2%;
in the 3rd year – 83.4%;
4th year – 82.6%

The higher the course, the higher the student's performance and this is explained by the fact that with each course students become more adapted to the educational process and take a more responsible approach to educational activities. At the same time, unsuccessful students most often "drop out" in their junior years.

In general, the results of the spring examination session of the 2022-2023 academic year can be considered satisfactory. The grades received by students are close to the real level of their knowledge, thanks to the work of the management to eradicate the facts of cheating, the use of cheat sheets and other facts of academicdishonesty.

2.4 Analysis of the results of the work of the SAC on educational programs

The reports of the State Attestation Committee reflect the results of the defense of theses (projects), master's theses, advantages and disadvantages, comments and suggestions, as well as special opinions of individual commission members. The feedback from the chairmen of the SAC is reflected in the reports of the commission. In these reports, individual bachelor's degree graduates are given recommendations for admission to master's programs and publication of the results of diploma design.

FinalState certification of students was carried out according to the academic calendar for bachelor's, master's and doctoral programs.

Table12 – Comparative analysis of the results of the final state certification of students

(Bachelor/Master/Doctoral level)

Code and name of educational programs	Student population, people (full-time study)								
	2020-2021 academic year			2021-2022 academic year			2022-2023 academic year		
	Totaladmitted to the State Attestation Commission	Proportion of successful passers, %	Wed. GAC score	Totaladmitted to the State Attestation Commission	Proportion of successful passers, %	Wed. GAC score	Totaladmitted to the State Attestation Commission	Proportion of successful passers, %	Wed. GAC score
5B07100 – Materials science and	8	100	-	6	100	84.5			

technology of new									
5B070700 – Mining (Maksh.delo)	24	100	90.1	13	100	82			
5B071100 – Geodesy and cartography	18	100	95.7	80	100	92			
5B072300 – Technical physics	5	100	87.8	9	100	89.5			
5B090700 – Cadastre	-			2	100	90			
5B090300 – Land management	-			1	100	88			
6D072300- Technical Physics	3	100	89						
6D074000–Nanomaterials and nanotechnologies	-	-	-						
6B05205 – Chemical and biochemical engineering	-	-	-	-	-	-	18	100	90.9
5B070900 – Metallurgy / 6B07203 – Metallurgy and mineral processing	12	12	91.5	19	19	90.6	61	98.3	88.7
5B070700 – Mining / 6B07205 – Mining engineering	76	90%	4.8	41	100%	85	70	100	87.5.
6B07109 – Engineering physics and materials science							32	100	85.3
6B07207 – Engineering physics and materials science							4	100	83.2
6B07303 – Geospatial digital engineering							28	100	91.8
6B07304 – Geospatial digital engineering							49	96	88.4
7M05301 – Applied and engineering physics	6	100	89	6	100	91.2	3	66.7	96.5
7M07103 – Materials science and technology of new materials	4	100	-				-	-	-
7M07110 – Chemical processes and production of chemical materials	-	-	-	-	-	-	6	100	89.2
7M07203 – Mining engineering	19	85%	4.5	20	100%	85	10	100	84.1
7M07204 – Metallurgy and mineral processing	7	7	91.6	5	5	90	4	100	92.7
7M07210 – Geospatial digital engineering	5	100	95.6	4	100	95	1	100	91.0
7M07215 – Mining engineering (UNDP)	5	90%	5.0	-	-	-	-	-	-
7M07223 – Metallurgy and mineral processing	24	100	86	10	100	89.3	4	100	94.5
7M07306 – Geospatial digital engineering	6	100	95.1	15	100	95	12	100	93.8

The graduation rate in 2023 was 263 bachelors, 45 masters. The average score of the State Attestation Commission for bachelor's degrees was 88.0, for master's degrees was 91.7

2.5 Implementation of the department's plan for publishing teaching aids, textbooks, methodological instructions, educational and methodological developments, lecture courses,including in the state language.

According to the Plan of educational and methodological publications of the teaching staff of the State Medical Institute for the 2022 and 2023 calendar years, it is planned to publish 17 methodological instructions, of which 8 are in the state language and 9 in Russian, textbooks - 1, of which 1 is in the state language, textbooks 2 of which 1 in state language and 1 in Russian. As of June 20, 2023, the departments of the institute published:

Table13 – List of educational and methodological literature published by teaching staff

No.	Departments	Number of educational and methodological literature published by KazNRTU (in the reporting year)									
		textbookov	incl. in Kazakh	educational benefits	incl. in Kazakh	met.instructions.	incl. in Kazakh language	dictionariesand etc.	including in Kazakh	total	incl. in Kazakh language
1	Mining	-	-	-	-	8	4	-	-	8	4
2	Mine surveying and geodesy					5	2			5	2
3	Metallurgy and mineral processing	2	1							2	1
4	Metallurgical processes, thermal engineering and special materials technology	-	-	-	-	4	2	-	-	4	2
5	Materials Science, Nanotechnology and Engineering Physics	-	-	-	-	-	-	-	-	-	-
6	Chemical processes and industrial ecology			1	1					1	1
	Total for the Institute	2	1	1	1	17	8			20	10

2.6 Usedistance learning technologies

Distance learning technologies for Satbayev University students are used on educational portals: Hero study (UMKD, learning movement account, etc.), Polytech online (virtual “personal accounts”), Microsoft Teams (consultations, SRSP, advisory hours, report protection etc.).

The educational process includes a virtual laboratory on metallurgical heat engineering, a remote video tour of underground mine workings, in the workshops of metallurgical factories, etc.

2.7 Quality control of the educational processand open lectures

The main goal of the intra-university education quality control system is to identify the real quality of education at the university and identify areas for its improvement in all types of activities.

In order to continuously improve quality and methodologicalprovisioneducational process, departments developed schedules for conductingopenclasses (F KazNITU 708-01) for teachers whomustconduct open classes in the current academic year.

3 Educational and industrial practiceand employment

Order No. 580-b dated April 24, 2023 on practical training, indicating the type of practical training, terms of completion, base and supervisor of the practical training, signed by member of the Board - Projector for Academic Affairs B.A. Zhautikov.

Practice programs have been developed for each educational program. In order to organize internships, agreements have been previously concluded with enterprises, organizations and institutions.

As part of cooperation with the industry, agreements and a Memorandum were previously signed on the opening of a branch of the MD&G department at the Leica Geosystems Kazakhstan LLP enterprise, Mmemorandums of cooperation on training personnel in the field of “Metallurgy” with production enterprises KazFerroStal LLP, Aktobe Rail and Section Plant LLP, Balkhash Polymetal LLP,"HIE Kazakhstan" LLP, an agreement for conducting industrial and pre-graduation internships for students of the KSU "Department of Land Relations of Almaty", Memorandum of Mutual Cooperation of the RSE at the PVC "National Center for Geodesy and Spatial Information". As part of the agreement, graduates of the specialty “Geodesy and Cartography” were employed.

Table 14– Information about the organization of EP practices

Code and name of OP	Total number of assigned basespractices	Of these used in the academic year	Qtystudents undergoing internship			Didn't have an internship	Number of positivereviews from practice managers from enterprises about	Note
			Total	In working positions	In other positions			
6B05205 – “Chemical and biochemical engineering”	7	7	48	48	-	-	-	-
6B05206 – “Ecology engineering”	10	10	59	59	-	-	-	-
6B07109 – “Engineering physics and materials science”	5	5	44	44				
6B07116 – “Technology of main production and new materials”	3	3	6	6				
6B07203 – “Metallurgy and mineral processing”	11	11	67	67	-	-		
6B07205 – “Mining engineering”	10	10	109	109				
6B07213 – “Mineral Processing	1	1	16	16				
6B07303 – “Geospatial digital engineering”	42	42	132	132				
6B07304 – “Geospatial digital engineering”	45	45	605	605				
TOTAL:	**134**	**134**	**1086**	**1086**				

Note. Fill out the table for the reporting period

Table 15– Results of professional practice

Code and name of OP	Protectedpractice reports			Average score	Where the reports were protected (at the university or at work)
	Total	Pass	nopass		
6B05205 – "Chemical and biochemical engineering"	48				Protection is carried out: at the enterprise, at the university
6B05206 – "Ecology engineering"	59				Protection is carried out: at the enterprise, at the university
6B07109 – "Engineering physics and materials science"	44				Protection is carried out: at the enterprise, at the university
6B07116 – "Technology of main production and new materials"	6				Protection is carried out: at the enterprise, at the university
6B07203 – "Metallurgy and mineral processing"	67				Protection is carried out: at the enterprise, at the university
6B07205 – "Mining engineering"	109				Protection is carried out: at the enterprise, at the university
6B07213 – "Mineral Processing	16				Protection is carried out: at the enterprise, at the university
6B07303 – "Geospatial digital engineering"	132				Protection is carried out: at the enterprise, at the university
6B07304 – "Geospatial digital engineering"	605				Protection is carried out: at the enterprise, at the university
7M05301 – "Applied and engineering physics"	3				Defense takes place at the university
7M07110 – "Chemical processes and production of chemical materials	6				Defense takes place at the university
7M07203 – "Mining engineering"	10				Defense takes place at the university
7M07204 – "Metallurgy and mineral processing"	10				Defense takes place at the university
7M07210 – "Geospatial digital engineering"	1				Defense takes place at the university
7M07223 – "Metallurgy and mineral processing"	5				Defense takes place at the university
7M07306 – "Geospatial digital engineering"	12				Defense takes place at the university
Total for MaMI:	**1133**				

Note. Fill out the table for the reporting period

Table 16– Information on concluding contracts with manufacturing enterprises for the reporting period

No.	Business name	Contract time
1	Kazakhmys Corporation LLP	Agreement No. 50/13y dated 05/06/2013 on an ongoing basis
2	LLP "Physico-Technical Institute", Almaty	Agreement No. 87/19y dated 05.11.202 on an ongoing basis
3	Hyundai Trans LLP	ALM-NTK-2023-549 from 04/20/2023
4	KAZ Minerals LLP	Agreement from 2023 on an ongoing basis
5	AK Altynalmas LLP Akbakai	Agreement No. 96/13y dated 13/18/2013 on an ongoing basis
6	KazIndastry Company LLP, Almaty	Agreement No. 672/23 dated 04/21/2023

7	Branch of NJSC "GC "Government for Citizens" Almaty	Contract No. 05-56 dated 05/19/2022 on an ongoing basis
8	Branch of NJSC "GC "Government for Citizens" Semey	Agreement No. 241/23 dated April 14, 202
9	KMMC "Kazzinc", Ust-Kamenogorsk	Agreement No. 50-10/2021-0209 dated 05/13/2021.
10	KMG Engineering LLP	Agreement No. 120-15/06/2022AS dated 12/27/2022
11	Aber mining LLP	Agreement No. 1-22/06 dated 06/23/2022
12	Branch of the RSE "SC CPMS RK" State Scientific and Production Association of Industrial Ecology KAZMEKHANOBR	On an ongoing basis
13	TOO “INCREASE-FOOD”. Almaty	Memorandum No. 08-118 dated 08/31/2022
14	Test Center LLP, Aktobe	Agreement No. 632/23 dated 04/21/2023
15	Department of agrochemical, soil surveys and comprehensive survey work, Almaty	Agreement No. 04-50 dated 04/28/2022
16	Kazphosphate LLP, Taraz	Agreement No. 1213/21-IR-66 dated March 25, 2021
17	Karasai Project LLP, Kaskelen	Agreement No. 469/23g dated April 20, 2023
18	LLP “BCSK 2030 STROY” Astana	Agreement No. 224/23g dated 04/14/23
19	“ALIGeo” LLP, Astana	Agreement No. 06-67 dated June 27, 2022
20	“DR Financial Group” LLP, Almaty	Agreement No. 463/23g dated 04/20/23
21	Geodesy Group LLP, Taraz	Agreement No. 464/23g dated 04/20/23
22	Institute of Ionosphere LLP, Almaty	Agreement No. 03-05-547 dated 05/03/2023
23	“Alen Qurylys” LLP, Shymkent	No. 473/23g from 04/20/23
24	LLP “Zhem Drilling” Aktobe	No. 244/23g from 04/14/23
25	Mir-Stroy and Company LLP, Shymkent	No. 219/23g from 04/14/23
26	LLP “GeoTechCenter” Almaty	No. 225/23g from 04/14/23
27	GEO GORIZONT LLP	No. 258/23g from 04/17/23
28	“Sarbaz-Kuat” LLP, Shymkent	No. 227/23g from 04/14/23
29	Kyzylorda branch of the RSE at the Kazvodkhoz storage facility	No. 617/23g from 04/24/23
30	“MAX Geosolutions” LLP, Almaty	No. 259/23g from 04/17/23
31	NJSC “GK” “Government for citizens of Zhetysu region”, Ucharal	No. 461/23g from 04/20/23
32	LLP"Nur Stroy Service" Turkestan	No. 03-05-548 dated 05/03/2023
33	Department of Construction and Architecture of the Panfilov District	No. 263/23g from 04/17/23
34	LLP “Konstruktiv LTD”	No. 468/23g from 04/20/23
35	LLP “Geodetic World”, Almaty	No. 256/23g from 04/17/23
36	State Institution “Department of Construction Architecture and Urban Planning of the Enbekshikazakh District” Esik	No. 350/23g from 04/19/23
37	LLP "Construction Company Elitstroy"	No. 644/23g from 04/24/23
38	LLP “GCI” Almaty	No. 220/23g from 04/14/23
39	“IzyskaniePlatinum” LLP, Ust-Kamenogorsk	No. 467/23g from 04/20/23
40	“Ab-Max” LLP, Almaty	No. 226/23g from 04/14/23
41	LLP “Zangzher” Uralsk, West Kazakhstan region	No. 221/23g from 04/14/23
42	LLP “MAX Geosolutions” Almaty	No. 619/23g from 04.24.2323
43	Master Geo LLP, Almaty	No. 247/23g from 04/14/23
44	Kaz Asia Engineering LLP, Kyzylorda	No. 460/23g from 04/20/23
45	Almaty GeoCenter LLP	No. 534/23 dated 04/21/23
46	RSE on the right of the HV "State Institute of Agricultural Aerial Photo-Geodetic Surveys (GISHAGI)" of the Committee for Land Resources Management of the Ministry of Agriculture of the Republic of Kazakhstan	05/13/2022 (three years)
47	State Institution “Department of Land Relations of Taldykorgan”	No. 197/23 dated 04/13/2023

48	LLP “DAT Continental” Taldykorgan	No. 484/23 dated 04/20/2023
49	LLP “BAZIS CONSTRUCTION” Almaty	No. 486/23 dated 04/20/2023
50	Elite Service Plus LLP, Pavlodar	No. 531/23g. from 04/24/2023
51	Leica Geosystems Kazakhstan LLP	08/25/2021 For undefined period
52	Alau Solutions LLP	04/29/2022 on a permanent basis
53	Metroproject LLP	05/23/2022 on a permanent basis
54	LLP Research and Production Company "Interin"	03/01/2022 (two years)
55	LLP Scientific and Production Company "AlGeoRhythm"	06/01/2022 (five years)
56	“Comfort Asia” LLP	04/28/2022 1 year
57	“NOSER SERVICE” LLP	04/28/2022 1 year
58	Kazferrostal LLP	On an ongoing basis
59	JSC "Altyntau Kokshetau"	On an ongoing basis
60	Institute of Metallurgy and Beneficiation	On an ongoing basis
61	KSP STEEL LLP	On an ongoing basis
62	JSC NAC Kazatomprom	On an ongoing basis
63	RSE NCCPMS	On an ongoing basis
64	Stepnogorsk Mining and Chemical Plant LLP	On an ongoing basis
65	Joint Venture LLP "Inkai"	On an ongoing basis
66	RSE "Institute of Combustion Problems"	On an ongoing basis
67	JSC TNK Kazchrome	On an ongoing basis

Employment work begins even when students undergo practical training, when students not only get acquainted with enterprises, but also have time to prove themselves well. The most effective in this sense is industrial practice II (7 weeks), after which applications from employers are mainly received.

An effective form of working with employers is business correspondence, concluding agreements on cooperation and internships, and presentations of company materials in conversations with students. One of the effective ways to employ graduates is to hold an event such as a “Job Fair” at KazNRTU.

Table 17– Employment indicators (by specialty)

Level: bachelor's/master's degree at KazNRTU

		Alumni contingent, people													
		2020– 2021 academic year					2021– 2022 school year G.					2022 – 2023 academic yearG.				
OP code	Name of OP	Totalrelease	Employed by the university	Self-employed		Qtycomplaints received from	Totalrelease	Employed by the university	Self-employed		Qtycomplaints received from	Totalrelease	Employed by the university	Self-employed		Qtycomplaints received from
				Total	Incl. Byspecialist.				Total	Incl. Byspecialist.				Total	Incl. Byspecialist.	
5B070700	Mining	76	-	-	-		49					54	48			
5B070700	Mining (Marx. business)	28		3	3		13									

5B070900	Metallurgy	29	-	18	15	-	12	-	10	10		19	18			
5B071000	Materials science and technology of	10	-	10	4	-	-	-	-	-		6	5			-
5B071100	Geodesy and cartography	18	2	5	6		80					80	74			
5B072300	Technical Physics	11	-	11	5	-	9	-	9	-		9	9			-
5B073700	Mineral beneficiation	11	-	11	6	-	2	-	1	1	-	1	1			
5B090300	Land management											1	1			
5B090700	Cadastre											2	2			
6B07203	Metallurgy and mineral processing	25	0	22	6		11	0	5	0		6	6			
6B07205	Mining Engineering											13	13			
Undergraduate												**200**	**185**	**92.50%**		
7M05301	Applied and engineering physics											6	6			
7M07110	Chemical processes and production of chemical materials											6	5			
7M07201	Automation and digitalization of metallurgical processes											1	1			
7M07203	Mining Engineering	1	1	16	11	-	20	-	16	15		20	18			-
7M07204	Metallurgy and mineral processing	5	-	5	5	-	6	-	6	6	-	15	13			
		9	0	9	9		9	0	9	9						
7M07210	Geospatial Digital Engineering	6	2	3	5	-	4	-	-	-	-	4	3			
7M07223	Metallurgy and mineral processing	9	-	9	9	-	24	-	23	23	-	10	8			
7M07306	Geospatial Digital Engineering	5	1	3	4		15					15	13			
For master's degree:												**77**	**67**	**87.01%**		
8D05301	Applied and engineering physics											1	1			

8D07109	Innovative technologies and new inorganic materials											1	1			
8D07203	Mining Engineering											6	6			
8D07204	Metallurgical Engineering	1	-	1	1	-	1	1	1	1	-	8	8			
8D07306	Geospatial Digital Engineering											4	4			
For doctoral studies												**20**	**20**	**100.00%**		
TOTAL for MaMI:												**297**	**272**	**91.58%**		

4 Scientificand innovation activities

4.1 Resultsresearch

The organization of scientific work at the institute is carried out in accordance with the Regulations on research, development and technological work within the framework of the formation and implementation of scientific, scientific, technical and innovative projects and programs.

In 2022, scientists of the institute published 105 articles in the SCOPUS and WoS databases, of which 52 articles were published in journals with quartiles Q1 and Q2. During the reporting period, 6 monographs, 2 textbooks, 1 study guide were published, 9 patents of the Republic of Kazakhstan were received.

During the reporting period, the following doctoral dissertations were defended:

Yesengaziev Azamat Muratovichon the topic “Development of technology for processing titanium-magnesium production waste to produce titanium dioxide and calcium nitrate” in specialty 6D070900 – “Metallurgy”. Scientific consultant: Kenzhaliev B.K. (July 2022);

Yesengaraev Erlan Kairatovichon the topic “Intensification of the process of heap leaching of gold using various reagents and various physical and chemical methods” in specialty 6D070900 – Metallurgy. Scientific consultant: Baimbetov B.S. (December 2022).

Argyn Aidar Abdilmalikulion the topic “Improving the technology for converting copper-lead matte by sulfidation” according to the educational program 8D07204 – “Metallurgical Engineering”. Scientific consultant: Dosmukhamedov N.K. (December 2022).

Daruesh Galamat Sultanbekulyon the topic “Development of a comprehensive technology for processing ash with the extraction of valuable metals” 8D07204 – “Metallurgical Engineering”. Scientific consultant: Dosmukhamedov N.K. (December 2022).

Kenzhetaev Zhiger Smadievich on the topic “Increasing the efficiency of borehole uranium mining based on the intensification of underground leaching processes” under the educational program 6D070700 - “Mining”. Scientific consultant: Rakishev B.R. (April 2023).

Uteshov Erzhan Tursynovich on the topic “Scientific and methodological support for technical and technological analysis of the efficiency of mining production management” under the educational program 6D070700 - “Mining”. Scientific consultant: Galiev S.Zh. (April 2023).

Nazgul Serikovna Donenbaeva on the topic “Improving geodetic methods for geomonitoring the stability of quarry sides” in specialty 6D071100 – “Geodesy”. Scientific consultants: Nurpeisova M.B., Kyrgizbaeva G.M. (April 2023).

Kuandykov Tilepbay Alimbaevichon the topic "Development of technology for increasing the productivity of technological wells using airlift drilling and hydraulic pulse impact"specialty 6D070700-"Mining". Scientific consultant: Krupnik L.A. (June 2023).

Kenesbaeva Aigulon the topic "Modeling of geodynamic processes in the

territory of the Northern Buzachi oil and gas field"specialty 6D071100-"Geodesy". Scientific consultant: Nurpeisova M.B. (June 2023).

2 doctoral dissertations have been prepared for defense in specialty 6D070700-Mining.

In accordance with Article 15 of the Law of the Republic of Kazakhstan "On Science", in order to encourage scientists, scientific workers of scientific organizations and organizations of higher and (or) postgraduate education who have contributed to the development of science and technology, the Ministry of Science and Higher Education of the Republic of Kazakhstan awarded the "Best Scientific" award employee" 2022 to the professor of the department "Metallurgy and mineral processing"**Dosmukhamedov Nurlan Kalievich.**

WinnereatNational industry competition **"Golden Hephaestus"**in the category "Teacher of the Year"became director of the instituteRysbekov Kanai Bakhytovich.

According to the resultscompetition of the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan and inin accordance with the Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated December 28, 2022 No. 216,Senior Lecturer at the Department of Metallurgy and Mineral Processing**Tazhiev Eleusiz Bolatovich** awarded a state scientific scholarship for talented young scientists.

4.2 The total amount of funding for research work on MaMI is 1,878,211,490 tenge.

The number of ongoing research projects under the Global Fund for 2020-2022, 2021-2023 and 2022-2024 is 25 projects; the total amount of funding for all MaMI projects for 2022 and 2023 is 985.8 million tenge

The total amount of funding under concluded agreements for contract research is 322,535,348tenge

The amount of contract research was: in 2020 –**68 120 112 tenge**, in 2021 – **106,120,000 tenge,**in 2022 –**165 094 046**tenge, in 2023 – 157,441,302 tenge. Of the ten economic contracts being carried out in 2023, 4 contracts are carried out at the Department of Mining and 5 contracts at the Department of Metallurgy and Mineral Processing.

Scientists of the institute submitted 25 applications for the 2023-2025 Global Fund competition, of which 21 projects were submitted to the National Research Council.

According to the Global Fund competition for the most promising projects for the commercialization of the results of scientific and (or) scientific and technical activities (RNSTD) for 2022-2024, 2 applications were won (Moldabaev S.K. and Bektay E.). Professor of the Department of MaMP Dosmukhamedov N.K. is a member of the NSC for commercialization.

3 contracts for contract research will be concluded in the amount of 150 million tenge.

Table 18 – Research work of teaching staff for the reporting period

Name	Quantity	Amount of financing, tenge		Total
		2022	2023	
According to the Global Fund 2020-2022	6	243 194 640	-	243 194 640
According to the Global Fund 2021-2023	5	107 664 760	106 594 410	214 259 170
According to the Global Fund 2022-2024	14	145,176,253.50	382,856,353.75	528 032 606
GF "Zhas Galym" 2022-2024	5	25 298 260	25 298 260	50 596 520
GF "Zhas Galym" 2023-2025	1	-	7 915 300	7 915 300
GF CMU 2023-2025	4	-	99 117 813	99 117 813
Commercialization of the results of scientific and (or) scientific and technical activities for 2022-2024	2	14,362,000	409 888 800	424 250 800
CI	2022-15 2023 – 10	165 094 046	157 441 302	322 535 348
Total:	62	700 789 959	1 181 196 938	1 878 211 490

Winners of grants from the competition “ZhasGalym" for 2022-2024. areMerkibaev E.S.,Dalbanbay A., Abildina A., Baygenzhenov O.S.

The list of young scientists for grant funding of young scientists for scientific and (or) scientific and technical projects for 2023-2025 is given below

Table 19 –List of young scientists of the Competition for grant funding of young scientists for scientific and (or) scientific and technical projects for 2023-2025

No.	FULL NAME.	Topic name	Amount of financing million tenge			Total, million tenge
			2023	2024	2025	
1	Tazhiev E.B.	AP19576391 Development of innovative technology for producing new alloys from accumulated substandard multicomponent chromium-, manganese-containing waste using Big Data	25.00	25.00	25.00	75.00
2	Iskakov E.E.	AP19576987 Creation of an effective method for strengthening a weakly stable rock mass with the construction of a modified advance support from high-tech materials ensuring safe mining of ore bodies	25.00	25.00	25.00	75.00
3	Kudaibergenov K.K.	AP19577049 Synthesis, characterization and physicochemical study of sorbents of biomass origin for purification of industrial waters from radionuclides	24.10	24.00	23.90	72.00
4	Zhakypbek Ryszhan	AP19576993 Intensification of the process of reclamation of disturbed lands during open-pit mining using hyperaccumulator plants and mycorrhizae	25	25	24.99	74.99

Below is a list of leaders of the Competition for grant funding “Zhas Galym” for scientific and (or) scientific and technical projects for 2023-2025.

No.	Full name	Topic name	Amount of financing, tenge			Total, tenge
			2023	2024	2025	
	Esirkegenov Meirbek Ibragimovich	IRN AR19175411 “Development of a comprehensive technology for intensifying the electrolysis process in the production of copper cathode”	7 915 300	7 993 714	7 960 314	23 869 328

The number of research projects performed by department is presented below.

Table 20 – Number of projects by department

No.	Department	GF			CMU		Zhas Galym		CI		Commercialization	
		2020-2022	2021-2023	2022-2024	2022-2024	2023-2025	2022-2024	2023-2025	2022	2023	2022	2023
1	Mining	2	1	4	-	1	-	-	3	2	1	1
2	MSNaEP	-	-	1	1	1	1	-	-	-	-	-
3	MaMP	1	2	4	2	1	-	-	6	5	1	1
4	SaG	2	2	2		1		-	1	-		
5	MPHEaTSM	1	-	1			2	1				
6	CPaIE	-	-	2	2		2	-				
TOTAL for MaMI		6	5	14	5	4	5	1	10	7	2	2

It is planned to conclude an agreement for contract research:

- “Experimental industrial implementation of the method of bacterial oxidation of iron in solutions at the Semizbay deposit, stage 5-6.” Scientific supervisor Turysbekova G.S. The amount of financing is 45,000,000 tenge. And 2 more economic agreements for 105 million tenge (managers Yusupov Kh.A. and Iskakov E.E.)

Participation in competitions is planned:

- PTF for 2023-2025;
- PTF for 2024-2026;
- grant financing of the most promising RNNTD commercialization projects for 2023-2025;

4.3 Introduction of research results into production and the educational process

On June 20, 2023, the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan announced a Competition for program-targeted funding forscientific, scientific and technical programs for 2023-2025. According to scientific and technical assignment No. 18, the institute’s scientists will participate in the creation of an innovative engineering center for energy-generating technologies for the mining and metals industry.

According to a letter from the Science Committee of the Ministry of Education and Science of the Republic of Kazakhstan, teachers of the institute prepared 12 technical assignments for the PCF competition 2024-2026.

Number of submitted technical requirements for the PCF for 2024-2026.

No.	FULL NAME. managers	Department	Number of applications
1	Rakishev B.R. -	Mining	1
2	Moldabaev S.K.	Mining	1
3	Dosmukhamedov N.K.-	MaMP	1
4	Smagulov D.U	MSNaEP	1
5	Orynbasarova E.O.-	SaG	1
6	Azat Seythan	MSNaEP	2
7	Bektay E.K.	MaMP	3
8	Chepushtanova T.A.	MPHEaTSM	1
9	Baytimbetova B.A.	MSNaEP	1
Total for MaMI			12

3 applications were submitted for the competition for grant financing of the most promising RNNTD commercialization projects for 2023-2025, announced by JSC Science Foundation. (Bektay E.K. – 2, Iskakov E.E. - 1)

Research work at the institute during the reporting period was carried out in accordance with the annual thematic plan and the plan for scientific and innovative activities of the institute.

During the reporting period, all sections included in the calendar plans for scientific projects were completed in full.

4.4 Organization of research work

In April 2023, the following were held on the basis of KazNRTU:

- Stage IIRepublican Subject Olympiad among students of higher educational institutions in the educational program 6B07205 - “Mining Engineering”;
- Stage IIRepublican competition of scientific research works of students in state educational programs: 6B074 – “Urban planning, construction work and civil engineering” under the educational program “Geodesy and Cartography” and 6B075 – “Cadastre and Land Management” under the educational program “Cadastre”.

MaMI students are invited to participate in olympiads, competitions and competitions at various levels, which helps identify talented students in various fields of science and sports, enhance cognitive and practical activities and creative potential.

In the autumn semester of the 2022-2023 academic year, 4th year student OP 6B05205 - “Chemical and Biochemical Engineering” Maria Tsai, as part of the Zhylany team, reached the finals of the International KVN League in Minsk.

4th year studentOP 6B05205 – “Chemical and biochemical engineering”**Aisanova Asylzhan**became the winner of the competition"Best Student 2022"

1st year students of OP 6B05206 - “Ecology Engineering” Rakhimova Aruzhan took 2nd place in the “Zhaina Zhastyk” competition, Tokanova Aruzhan took part for the SU team in the volleyball competition among girls and took 1st place.

3rd year student OP 6B07203 – “Metallurgy and mineral processing” of the Department of Mineral and Industrial Infrastructure Bekmakhanbet Azamat Maratuly took 3rd place in the military sports relay race held in honor of the Independence Day of the Republic of Kazakhstan, December 2022 (Almaty).

3rd year student OP 6B07203 - “Metallurgy and mineral processing” of the Department of MaMPVYBA

Abushakhmanov Aidos Kyzatovich took 2nd place in the Republican Forum of Processors dedicated to the 70th anniversary of the NJSC “Karaganda Technical University named after Abylkas Saginov” on March 16-17, 2023 (Karaganda) .

Prize-winners of republican Olympiads and research competitions:

–Ihsan N.A., Falymova N.T. and Smagulova S.A.,OP 6B07116 – Technology of basic production and new materials, Diploma of the Ministry of the 1st degree (NIRS Karaganda University named after E.A. Buketov);

–Timurova Lyaylya, OP 6B05205 – Chemical and biochemical engineering, 2nd place at the International Competition of Student Scientific Works “Black Sea Sciens 2023”, Odessa;

–Utegenova Aruzhan, OP 6B05205 – Chemical and biochemical engineering, III place at the International competition of student scientific works "Black Sea Sciens 2023", Odessa;

– Alimov Akzhol Seytbekuly, a student of the Department of MaMP, took 1st place at the II stage of the Republican Subject Olympiad among students of higher educational institutions in the specialty “Metallurgy” on April 13-14, 2023 (Ust-Kamenogorsk).

– Makhanbetali Ali Sugiralliuly, a student of the Department of MaMP took 3rd place at the II stage of the Republican Subject Olympiad among students of higher educational institutions in the specialty “Metallurgy” on April 13-14, 2023 (Ust-Kamenogorsk).

– Students of the Department of MaMP of the State Medical Institute named after. O.A. Baikonurova with the following team: Alimov Akzhol Seitbekuly, Makhanbetali Ali Sugiraliliuly, Makhanbetova Dinara Nurlankyzy took 1st place at the II stage of the Republican Subject Olympiad among students of higher educational institutions in the specialty "Metallurgy" on April 13-14, 2023 (Ust-Kamenogo rsk).

–Petrash Diana, OP 6B05205 – Chemical and biochemical engineering, XV Republican Subject Olympiad among students (Al-Farabi Kazakh National University), 3rd place;

–Tolegen Sabyrzhan, Utegenova Aruzhan, Petrash Diana, OP 6B05205 – Chemical and biochemical engineering, XV Republican Subject Olympiad among students (Al-Farabi KazNU), II place;

–Tolepbaeva Diana, Khamitova Venera, Tolepbergenova Madina. OP 6B05205 – Chemical and biochemical engineering, II degree Diploma, International Student Online Olympiad, L.N. Gumilyov ENU;

–Fanina Anastasia, Utegenova Aruzhan. OP 6B05205 – Chemical and biochemical engineering, II degree Diploma, National University named after S.M. Beketov, Ukraine.

–Shahan Karakas, Nazymbek Tileuzhan, Tursynaliev Almas students of the OP6B07304 –Geospatial digital engineering (Cadastre) won third place in the II stage of the XV Republican Subject Olympiad among students of higher educational institutions of the Republic of Kazakhstan.

–Oralbek Bakdaulet, Kaiyrbek Ayaulym Tuleubekkyzy, Turekhan Botakoz Zhanibekkyzy OP 6B07304– “Geospatial Digital Engineering" took prizes in the International Scientific Conference among students and young scientists "Farabi's World" in the "Green Economy" section.

4.5 Executioninitiative topics

On their own initiative, employers have the right to provide recommendations for the inclusion of this or that software in the educational process of students. For example, at the request of Kazzinc LLP, the Mining Department entered into a License Agreement with Deswik Mining Consultants (Australia) Pty Ltd (www.deswik.com).

In the educational process, especially when conducting research and development work, according to the EP, doctoral students use integrated information systems available under similar License agreements: Datamine (www.dataminesoftware.com), Micromine (www.micromine.com, www.micromine.ru), RPMGlobal (www .rpmglobal.com), Ventsim (www.ventsim.com).

5 International cooperation

The Institute continues to establish cooperation with partner universities and other organizations in foreign countries. Work is actively underway to invite foreign teachers with extensive experience in order to improve the educational process and exchange experience.

In the 2022-2023 academic year, the Mining and Metallurgical Institute concluded the following international memorandums and agreements on cooperation:

1. A Memorandum was signed withKremenchug National University named after Mikhail Ostrogradsky;

2.A cooperation agreement has been concluded withNational Research Tomsk Polytechnic University;

3. A Memorandum was signed withFergana Polytechnic Institute;

4. A Memorandum was signed withNukus Mining Institute;

5. A memorandum of understanding has been concluded with the St. Ivan Rilski University of Mining and Geology, Sofia, Bulgaria.

6. For educational programs in metallurgy, the Department of MPHEaTSM together with NUST MISIS, has developed a double-diploma, innovative educational program for a master's degree (agreement dated December 20, 2022 No. 12-51) “7M07229 - Extractive metallurgy” together with the National Research Technological University “MISiS”, Russia.

7. A framework agreement on cooperation was concluded with the Almalyk branch of the Tashkent State Technical University named after I. Karimov, dated April 26, 2022.

- online lectures were held by Brajendra Mishra, professor of the Worcester Polytechnic Institute in Worcester, USA, on the processing of critical raw materials and the processing of red mud for metallurgical students in the amount of 45 hours, at the expense of the Worcester Polytechnic Institute, November 7-19, 2022.

- Professor Baigenzhenov O.S. carried out an international internship in Turkey, Istanbul, university - Gedik University 02/07/2022 - 02/17/2022.

- a memorandum of cooperation was signed with the University of L'Aquila (Italy), head of the department of MPHEaTSM Chepushtanova T.A. as a visiting professor at the Technical University of Milan, she gave lectures on extractive metallurgy for undergraduate and doctoral students, participated in a scientific round table on the topic “Metallurgical processes and processing of critical raw materials” from 11/01/2022-11/08/2022.

- Head of the department of MPHEaTSM Chepushtanova T.A. as a visiting professor at the Mountain University Mountains Universität Leoben (Austria), she gave lectures on liquid extraction of copper for undergraduate and doctoral students, participated in a scientific seminar on copper hydrometallurgy and conducted research work on a project to reduce theft formation from 03/05/2023. until March 10, 2023.

- 2nd year master’s students from the Department of MPHEaTSM completed a foreign internship in Moscow, at NUST MISIS from 04/03–04/13/2023.

The following scientists will lecture under the Visiting Professor program for 2023.

1. Mikhalovsky Sergey Viktorovich, (Great Britain);
2. Konrad Terpiłowski, (Poland);
3. Rafiq Islam, (USA);
4. Rachid Amrousse, (Morocco)

Table 22 – List of joint educational programs of double-diploma education with foreign universities with the issuance of diplomas

No.	Code and name of OP	Partner university	Contingent of students according to SOP
1	7M07103 – Materials science and technology of new materials	National Research Tomsk Polytechnic University, 2023. (RF) (Top - 398 QS rating)	
	7M07204 – Metallurgy and mineral processing		
	7M07226 – Mineral processing		
	7M07110–Chemical processes and production of chemical materials		
2	7M07204 – Metallurgy and mineral processing	NUST MISIS (Moscow Institute of Steel and Alloys) (in progress).	

Table 23 – External academic mobility of students

No.	FULL NAME.	OP, course	Country, partner university	Duration of training
1	Orynbasar Bekzat	6B07304 – “Geospatial digital engineering”	Gyeongsang National University (South Korea)	Autumn semester2022-2023
2	Sultankhamitova Anelya	6B07303 – “Geospatial digital engineering”,	Czestochowa University of Technology (Poland)	Autumn semester2022-2023
3	Shakarova Dilnaz	6B07303 – “Geospatial digital engineering”	Adam Mickiewicz University (Poland)	Autumn semester2022-2023
4	Seymurat Dana	6B07303 – “Geospatial digital engineering”	Adam Mickiewicz University (Poland)	Autumn semester2022-2023
5	Dosanova Dariga	6B07303 – “Geospatial digital engineering”	Adam Mickiewicz University (Poland)	Spring semester 2022-2023
6	Orynbasar Bekzat	6B07304 – “Geospatial digital engineering”	Gyeongsang National University (South Korea)	Spring semester 2022-2023

Note. Fill out the table for the reporting period

Table24 – Foreign teachers invited to participate in the educational process of KazNRTU (including giving lectures on-line)

No.	FULL NAME. foreign teacher	Position, scientific (academic) degree	Country, name of university-partner	Teaching disciplines, number of hours	Contact details of the foreign teacher (e-mail, telephone)
1	Sumedh Gostu	PhD, production worker	American Air Liquid, USA	-	sumedh2014@gmail.com
2	Sdvizhkova Olena	Doctor of Technical Sciences Professor	Dr of technical science, professor, a head of	MIN443 Numerical 3D modeling of geomechanical processes (30 hours)	sdvyzhkova.oo@nmu.one
3	Korabeinik A.V.	Doctor PhD, Professor	Ukraine, Kyiv	Nanotechnology and nanomaterials	alina.v.korobeinyk@gm

4	Schultz R.V.	Doctor PhD	Czech	Geospatial Monitoring of Engineering Structures and Geodynamic Processes 72 hours	rshults@mtu.edu
5	Sumedh Gostu	PhD, production worker	American Air Liquid, USA	online lectures 72 hours, topic – "Processing of lead-zinc ores and concentrates, modern technologies and	sumedh2014@gmail.com
6	Brajendra Mishra	PhD, professor	USA, Worcester Polytechnic Institute	online lectures 72 hours, topic "Processing of critical raw materials, strategic reserves of rare earth	bmishra@wpi.edu
7	Ata Akchil Utku	PhD, professor	G. Isparta, Suleyman Demirel University	according to the ERASMUS + KA 107 Program (2020-1-TR01-KA107-090759)	Ata Utku AKÇİLataakcil@sdu.edu.tr

Note. Fill out the table for the reporting period

Table 25– Teaching staff of KazNITU, invited to participate in the educational process of partner universities (including giving lectures on-line)

No.	FULL NAME. Teaching staff of KazNITU	Position, scientific (academic) degree	Country, name of partner university	Teaching disciplines, numberhours	Coordinates of teaching staff of KazNITU
1	Alpysbay M.A.	Lecturer	Kazakhstan	Using Earth Remote Sensing Data	m.alpysbay@satbayev.university, 87073562427
2	Akhmetov R.A.	Lecturer	Kazakhstan	Geodesy in construction for BI Group as part of dual training	R.akhmetov@satbayev.university 87071992898

Note. Fill out the table for the reporting period

6 Educationaland extracurricular work with students

Educational work is implemented through various forms and methods, the main ones of which include: the educational process, advisory and mentoring work, educational work at the students' place of residence, student participation in amateur art clubs, sports sections, etc.

Forms and methods of educational work include everyday communication between teachers and students and individual conversations, advisory hours, and invitations to department meetings. At meetings of the institute's management, problems of educational work are constantly considered, and explanatory conversations are held with students.

The institute employs 55 advisers.

1st year – 12 advisers;

2nd year – 15 advisors;

3rd year – 14 advisers;

4th year – 14 advisors.

Of these, there are 6 senior advisers in departments, with whom the directorate directly works on the following issues:

–control over the completion of students' IEP;

–preventionstudent offenses;

–monitoring student attendance at training sessions;

–taking measures to repay students' financial debt by conducting explanatory work;

–interaction and correspondence with students and parents of students on issues of expulsion, deprivation of state grants, transfer to paid education, payment for tuition.

The Mining and Metallurgical Institute won 1st place at the annual festival "Spring of KazNITU", receiving a certificate worth 500 thousand tenge. Students of the institute participated in various genres in vocals, instrumental music, theatrical performances, song and choreographic numbers.

6.1 Academic and social support for students

Every year on September 1, as part of the "Knowledge Day," a general meeting is held with first-year students, students get acquainted with the management of the institute and the heads of departments.

For academic support of students, the management of the institute, together with the heads of departments, assigns an adviser to students.

The main goal of the advisors' activities is to assist in choosing a learning path (formation of an individual curriculum) for the student and his mastery of the educational program during the period of study

And:

❖ A Guidebook is issued for 1st year students;

❖ There is also a telegram bot at each institute where you can ask a question and get an answer to all questionshttpshttp://t.me/Idet_mm_institute_bot ;

❖ Each institute has a student dean's office, where students of any course can apply;

❖ Representatives of the directorate and advisors regularly receive information about the situation and behavior of students living in the dormitory and provide assistance in solving social and everyday problems;

❖ Advisors introduce students to the Rules of Credit Technology of Education and other regulatory documents.

Students from low-income families who study on a paid basis are provided with discounts, which are considered by the university commission. The progress of the group's students over the past month is summed up monthly. A list of students with unsatisfactory grades in disciplines and debts in practical classes is compiled. They are subject to daily work, questionnaires, individual interviews with parents, discussions of academic performance and attendance, and strict control over the payment of all debts. Regular conversations are held to prevent negative situations in the educational activities of individual students.

7 Logisticsbase

The teaching area of the buildings, classrooms, educational and scientific laboratories comply with the requirements of current sanitary standards and regulations. The Institute has a useful training area that complies with current sanitary standards, fire safety requirements, qualification requirements for the activities of educational organizations and the requirements of state mandatory standards for educational programs being implemented.

Due to sponsorship, an interactive panel (134 GMK) was purchased, licensed ArcGIS software was invested in for 50 seats (920 GUK, 933 GUK, in the library) were given for use, major repairs, blinds (134 GMK), a major overhaul of the auditorium 257 GMK is underway (Rakisheva B.R.), 303 gmk (Luganova V.A.), project from Alcor Labs LLP

Table 26 - Auditor Fund of the Institute

No. p/p	Indicator name	Number (audiences)	Qty (seats)
Department of Mining			
1	Lecture halls	-	-
2	Audiences for practical and seminar classes	244 GMK, 117 GMK, 158 GMK, 124 GMK	244 GMK - 30, 117 GMK - 30, 158 GMK - 18, 124 GMK - 32
3	Educational and scientific laboratories	110 GMK, 124 GMK, 243 GMK, 241 GMK	110 GMK - 2, 124 GMK - 32, 243 GMK - 2, 241 GMK - 3
4	Training grounds	-	-
5	Technopark	-	-
6	Computer classes	133 GMK	12
7	Reading rooms	-	-
8	Multimedia office	113 GMK, 162 GMK	113 GMK - 36, 162 GMK - 12
9	Language labs	-	-
10	Scientific and methodological classrooms	-	-
Department of Metallurgy and Mineral Processing			
1	Lecture rooms	31 TTK 21 MMC 118 GMK	30 24 24
2	Audiences for practical and seminar classes	31 TTK 21 MMC 118 GMK	30 24 24
3	Educational and scientific laboratories	15 GMK, 111 GMK, 116 GMK, 120 GMK, 122 GMK 123 GMK 03 TTK 20 TTK 23 TTK 427 TTK 428 TTK	6 6 12 4 14 2 10 8 15 6 4
4	Training grounds	-	-
5	Technopark	-	-
6	Computer classes	-	-

7	Reading rooms	-	-
8	Multimedia office	-	-
9	Language labs	-	-
10	Scientific and methodological classrooms	-	-
Department of Mine Surveying and Geodesy			
1	Lecture halls	1	257GMK - 54
2	Audiencesfor conducting practical and seminar classes	8	27 MMC – 17 228a GMK - 10 228bGMK – 24 252GMK - 50 256 GMK – 20 258 GMK – 16 25 TK - 15
3	EducationalLaboratory of "Innovative geospatial technologies in geodesy, cartography and surveying"	1	226 GMK - 19
4	Educational and trainingpolygons	-	-
5	Technopark	-	-
6	Computer classes	2	228a – 11 259 - 15
7	Reading rooms	-	-
8	Multimedia -offices: -complexes:	-	-
9	Language labs	-	-
10	Scientific and methodologicaloffices	-	-
Department of Materials Science, Nanotechnology and Engineering Physics			
1	Lecture halls	-	-
2	Audiencesfor conducting practical and seminar classes	5	316 GMK – 14 318 GMK – 18 320 GMK – 14 324 GMK – 12 330 GMK – 28
3	Educational and scientificlaboratories	3	322 GMK – 2 326 GMK – 2 23 MMC - 2
4	Educational and trainingpolygons	-	-
5	Technopark	-	-
6	Computer classes	-	-
7	Reading rooms	-	-
8	Multimedia -offices: -complexes:	-	-
9	Language labs	-	-
10	Scientific and methodologicaloffices	-	-
Department of Chemical Processes and Industrial Ecology			
1	Lecture halls	-	-
2	Audiences for practical and seminar classes	1007	40
3	Educational and scientific laboratories	135 GMK, 2 TTK, 822 "a" GUK, 920 GUK	135 GMK - 2 people, 2 TTK - 4 people, 822 "a" GUK - 4 people, 920 GUK – 4 people.
4	Training grounds	-	-
5	Technopark	-	-
6	Computer classes	230 GMK	13

7	Reading rooms	-	-
8	Multimedia office	134 GMK	25
9	Language labs	-	-
10	Scientific and methodological classrooms	-	-

The total area of classrooms and 15 laboratories of the Department of MaMP is 1047.9 m2. In the direction of "ore beneficiation", the department is equipped with various equipment for crushing and grinding of ore, gravity, flotation and magnetic enrichment. Laboratory equipment for ore beneficiation is located on an area of about 556.1 m2 in the TTK and is manufactured in a standard factory design, allowing you to reproduce the full technological cycle for ore beneficiation.

In the metallurgical direction, the Department of MaMP has equipment that allows performing the entire cycle of laboratory research, including processes: crushing, grinding, roasting, melting, leaching, electrolysis, extraction, ion exchange. The area of laboratories at MMC is 491.8 m2.

Since 2004, the Scientific Center named after Ibrahim Abylgazievich Onaev (headed by N.K. Dosmukhamedov) and since 2014 the research laboratory "Biogeotechnology of gold, uranium and polymetallic ores" (headed by G.S. Turysbekova) have been operating at the Department of Metallurgy and Mineral Processing. .).

List of laboratories of the department:

1) Laboratory for complex processing of ores and technogenic raw materials - 3 TTK

2) Laboratory of flotation methods of enrichment - 23 a, b TTK

3) Laboratory of magnetic enrichment methods - 20 TTK

4) Laboratory of the general course on mineral processing - 428 TTK

5) Ore preparation laboratory – 428 A TTK

6) Laboratory for research on the beneficiation of gold ores 428 G TTK

7) Laboratory for research on gravitational dressing of ores - 428 D TTK

8) Laboratory of gravitational enrichment methods - 427 TTK

9) Laboratory of special and combined enrichment methods - 429 TTK

10) Laboratory of pyrometallurgical processes – 15 MMC

11) NEIL"Biogeotechnology of gold, uranium and polymetallic ores" – 111 MMC

12) Laboratory for metallurgy of light and rare metals – 116 MMC

13) Laboratory of mass transfer processes – 120 MMC

14) Training laboratory – 122 GMK

15) Training laboratory – 123 MMC

Educational laboratories and special rooms, Industry laboratories, educational, research and production departments

The Department of MPHEaTSM has 3 educational laboratories and 3 specialized educational and research laboratories, 1 computer class, 1 classroom with an interactive whiteboard, which provide the educational process of undergraduate, graduate and doctoral studies and the implementation of research:

1. Laboratory of special courses
2. Laboratory of metallurgical processes
3. Laboratory of thermal processes
4. Laboratory of physical and chemical research
5. Laboratory of spectroscopic research methods
6. Laboratory of powder metallurgy
7. Computer class
8. Auditorium with an interactive whiteboard

The total production area of the department's laboratories and offices is 362 m2. The total area of classrooms per student is 3.2 m2.

The area of laboratories and special-profile rooms per student is 2.8 m2. The area of classrooms per student is 2 m2. The laboratories are equipped with modern instruments and equipment that meet the objectives of training bachelors, masters and doctoral students in their specialty. The material and technical base of the department generally corresponds to the qualification requirements established by the Rules for licensing educational activities.

8 Career guidance work

According tocalendar plan**Career guidance work for admission to the Kazakh National Research Technical University named after K.I. Satpayev for the 2022 - 2023 academic year, the following work was carried out.**

–assignment of schools, colleges of the city and region to the departments of KazNRTU named after K.I. Satpayev**.**

–Updating with advertising and promotional products for career guidance work (booklets, videos, presentations, etc.).

–Preparation of graduates of KazNRTU named after K.I. Satpayev for admission to master's and doctoral programs

–Career guidance work was carried out in schools and lyceums of schools No. 167, No. 62 named after. Sh. Smakhanuly, school No. 58, school No. 135, school No. 128 named after M. Auezov, No. 140 named after M. Makataev, school No. 65, No. 138 named after M. Bazarbayev, etc.

Carrying out career guidance work

No.	Full name	Job title	Date and place of the event
1	Aben A.S. Zhursumbayeva M.B. Mambetalieva A.R. Altmyshbaeva A.Zh. Aben E.H.	Lecturer at the Department of SaG Associate Professor, Department of CPaIE Senior Lecturer, Department of Physical Education and Informatics Senior teacher of the department of MPHEaTSM Assoc. Professor of the Department of Mining	06/09/2023 Medeu district (CPKiO)
2	Ormambekova A.E. Kusainova G.K. Koishina G.M. Akhmetkanov D.K. Merkibaev E.S.	Senior teacher of the Department of SaG Lecturer at the Department of CPaIE Assoc. Professor of the Department of SaG Associate ProfessorDepartment of State Duma Ved. engineer of the department of MPHEaTSM	06/13/2023 Tau Samali Market
3	Kenesbaeva A. Ybyrayimkul S. S. Boshkaeva L. T. Sarybaev N.O. Konyratbekova S. S.	Senior teacher of the Department of SaG Engineer of the Department of CPaIE Senior teacher Department of MaMP Art. teacher Department of State Duma Art. Lecturer at the Department of MPHEaTSM	06/15/2023 (New Arbat Square)
4	Bayturbay O. Raimbekova A.S. Moldabaeva G. Zh. Bektur B.K. Baigenzhenov O.S.	Assistant of the Department of SaG Lecturer Department of CPaIE Assoc. Professor of the Department of MaMP Senior teacher Department of State Duma Assoc. Professor of the Department of MPHEaTSM	06/23/2023 (Yalan Market)
5	Kuandykov T.A. Shakieva G.S. Daria T. Motovilov I. Yu. Yulusov S.B.	Deputy Director of MaMI Senior teacher of the Department of SaG Engineer of the Department of CPaIE Associate Professor of the Department of MaMP engineer of the department of MPHEaTSM	06/27/2023 (Athletes Village)
6	Nukarbekova Zh.M. Nuruldaeva G.Zh. Dzhumankulova S.K. Mamyrbaeva K.K.	Senior teacher of the Department of SaG Senior lecturer of the Department of CPaIE Senior lecturer of the Department of MaMP Assoc. Professor of the Department of MPHEaTSM	06/29/2023 Saryarka Square)
7	Kuandykov T.A. Kyrgyzbaeva G.M. Nurmakova S.M. Tazhiev E. B. Sultanbaeva A. B.	Deputy Director of MaMI Associate Professor, Department of SaG Associate Professor, Department of CPaIE Star. teacher Department of MaMP Engineer of the Department of MPHEaTSM	06/30/2023 (MEGA ALMATY shopping center)

Table 27– Information about events aimed at attracting applicants

Indicators	The target audience	Number of	Event / date / full name of teachers
Organizational and mass work			
Participationin organizing and conducting meetings of applicants with the Institute's teaching staff, representatives of professions in	School students	240	
Participationin the preparation of promotional materials for applicants: reference books and booklets about the Institute, specialties, information certificates, advertising leaflets, posters and more	School students	240	Videos and booklets provided (electronic and paper versions) Bakhmagambetova G.B.
Participationin organizing and conducting subject Olympiads in order to test the level of knowledge of applicants, develop cognitive activity, and form targeted motivation in choosing a profession	No		
Participationin organizing and conducting University Open Days, Institute days	No		
Participationin organizing and conducting meetings of applicants with the Institute's teaching staff, representatives of professions in demand in the labor market	Secondary school students	100	In May 2023 Open Doors Day (KazNITU named after K.I. Satpayev), Smagulov D.U., Baytimbetova B.A., Ybyrayimkul D.T., Erbol T.
Participationin the preparation of promotional materials for applicants: reference books and booklets about the Institute, specialties, information certificates, advertising leaflets, posters and more	Secondary school students	200	In May 2023, Open Doors Day (KazNITU named after K.I. Satpayev), Smagulov D.U., Baytimbetova B.A., Ybyrayimkul D.T., Erbol, Kakimov U.K., Koshimbayev B.Sh.
Participationin organizing and conducting subject Olympiads in order to test the level of knowledge of applicants, develop cognitive activity, and form targeted motivation in choosing a profession	Secondary school students	-	
Participationin organizing and conducting University Open Days, Institute days	Secondary school students	100	In May 2023, Open Doors Day (KazNITU named after K.I. Satpayev), Smagulov D.U., Baytimbetova B.A., Ybyrayimkul D.T., Erbol T.
Participationin organizing and conducting meetings of applicants with the Institute's teaching staff, representatives of professions in demand in the labor market	Almaty region School named after V. Tereshkoy (1) Issyk Karakemir secondary school (1) Secondary school named after N. Ostrovsky Baidybek bi village (1) Baidybek bi village secondary school (2) Ucharal No. 2 orta mektebi (1) -46	More than 80	Online Explanatory work was carried out 5 applicants decided to submit documents toSU. A series of online meetings via zoom are also planned until 07/10/2021

Participationin the preparation of promotional materials for applicants: reference books and booklets about the Institute, specialties, information certificates, advertising leaflets, posters and more	Atyrau region Secondary school No. 7 VKO SC No. 11		Online A booklet has been sent out and a time is being planned for an online meeting for clarification. Online A booklet has been sent out and a time has been agreed upon for an online meeting for clarification.
Participationin organizing and conducting meetings of applicants with the Institute's teaching staff, representatives of professions in demand in the labor market	applicants	300	February-March 2023, KazNITU. schools
Participationin the preparation of promotional materials for applicants: reference books and booklets about the Institute, specialties, information certificates, advertising leaflets,	+	300	February-March 2023, KazNITU. schools
Participationin organizing and conducting subject Olympiads in order to test the level of knowledge of applicants, develop cognitive activity, and form targeted motivation in choosing a profession	+	300	February-March 2023, KazNITU. schools
Participationin organizing and conducting University Open Days, Institute days	+	300	February-March 2023, KazNITU. schools
Other			
Jobwith students at school for vocational guidance			
Informing studentsabout the Institute and specialties of the university	School students	220	Graduates were familiarized with the list of
Informing studentsabout the Institute and specialties of the university	applicants	300	February-March 2023, KazNITU. schools
Other			
Jobwith directors and class teachers at school for professional guidance of students			
Interactionwith class teachers to identify the abilities, inclinations, and level of preparation of students	School directors, Heads of educational process, Class teachers	15	A meeting was held with the head of educational processes and class teachers of graduating classes of schools
Interactionwith class teachers to identify the abilities, inclinations, and level of preparation of students	School directors and class teachers (Almaty region, Karasai district)	200	Azat Seythan, LIP staff
Interactionwith class teachers to identify the abilities, inclinations, and level of preparation of	1	-	Kasymkanova H-K.M.
Questionnaireregarding career guidance work at	-	-	-
Interactionwith class teachers to identify the	applicants	300	February-March 2023,
Questionnaireregarding career guidance work at	applicants	300	February-March 2023,
Jobwith parents of students on professional guidance of students			
Participationin parent meetings			
Informingabout admission rules, prospects for the development of the labor market, targeted	Parents of school students	200	Azat Seythan, LIP staff
Informing parentsstudents about the specialties of the Institute	1	20	Teaching staff of the department
Informingabout admission rules, prospects for the development of the labor market, targeted	applicants	300	February-March 2023, KazNITU. schools
Explanationthe role of parents in the professional guidance of students - choosing a profession	applicants	300	February-March 2023, KazNITU. schools

Other			

Note. Fill out the table for the reporting period

9 Feedbackfrom consumers. Monitoring customer satisfaction

9.1 Interactionwith employers

To develop the competencies of the future young specialist, by order of the Rector of the University, an Advisory Council (hereinafter referred to as the AC) was created at the institute with the participation of representatives from production.

The purpose of this Council is:

1. Constant communication with leading enterprises of the Republic of Kazakhstan. For this purpose, we have established contact with the ALE “Republican Association of Mining and Metallurgical Enterprises” of the Republic of Kazakhstan (Association of Legal Entities “Association of Mining and Metallurgical Enterprises”) (AGMP).

2. Development of competencies based on data collected from enterprises.

3. Examination of RUP educational programs of the institute. With the assistance of the Association of Legal Entities AGMP, an expert opinion was received from leading enterprises of the Republic of Kazakhstan.

4. Issues of employment of graduates of the institute.

As is known, the new Law “On Education” provides for the direct participation of industry enterprises of the Republic of Kazakhstan in the assessment of educational programs and certification examination of personnel of universities of the Republic of Kazakhstan. The purpose of creating the Branch of the ALE "Republican Association of Mining and Mining and Metallurgical Enterprises" (AGMP) is to create a "Certification Center for Graduates of NJSC "KazNRTU named after. K. Satpayev" and advanced training of personnel of enterprises - partners of the ALE ASMP.

9.2 Monitoring customer satisfaction

The basic principles of academic activity ensure its implementation in a system of rules and regulations:

1. The principle of compliance of the quality of educational activities (learning and teaching) of the university with international educational standards.

2. The principle of student-centered educational process.

3. The principle of integration of education, science and production.

4. The principle of lifelong learning.

5. The principle of internationalization of education.

The maximum number and share of educational programs and licenses fall on the first and second stages of the educational process - bachelor's and master's degrees. The minimum number of educational programs is for doctoral studies. The demand for the educational programs of the institute is multipolar in nature and is formed from: the state (state order for training); individuals (human resources, as potential participants in the labor market); business community and entrepreneurial structures (organizations, enterprises, firms, companies). The institute conducted targeted training of highly qualified personnel in EP corporate master's programs for NAC Kazatomprom JSC and UK TMK JSC on a contractual basis. In 2022, 11 bachelors of Kazzinc LLP completed their studies.

Reduction of the teaching load, resulting in a reduction in teaching staff and

young people who could become an academic research environment, EP curricula in their framework and structure from the university do not correspond to the research model of the university, the load of a young assistant is 30 credits, with such a load the implementation of projects is impossible even based on physical strength; each discipline must correspond to a full-fledged paid 6 credits, thus the number of disciplines will be reduced, the quality will increase and the teaching staff will have enough time resources to engage in scientific work; lack of funding for student internships.

The educational process at all levels of educational programs is conducted using credit technology in the state (82%) and Russian (18%) languages. The main contingent of the institute (90%) studies on an educational state grant, (10%) - on a paid basis. The number of students is from among aul (rural) youth (64.3%).

In order to assess student satisfaction with the content and quality of the educational process in the discipline, an online survey of students was conducted; they were sent a link to fill out a questionnaire.

Regarding student satisfaction carrying outindustrial practice(bachelor's degree), there are problems with paying for room and board.

As world practice shows, one of the effective tools for improving the quality of educational services is passing national and international accreditation.All educational programs of the institute have been accredited by the IAAR and NAOKO agencies, and accreditation by foreign agencies is planned. In general, employers are satisfied with the quality of training of bachelor's degree graduates.

The assessment of the “effectiveness” and “effectiveness” of the implementation of the EP occurs due to feedback provided by employers, petitions, invitations of leading scientists from abroad, expansion of the practice base, mobility of students and teaching staff, results of participation in rankings, etc. The criterion for the effectiveness of the implementation of the EP is the students’ successful completion of practical training and their further career development. An indicator of the effectiveness of the implementation of the EP is the high-quality graduation of students and the percentage of their employment.

Investment projects

No.	Department	Investment projects	Sum	Note
1	MPHEaTSM	Sponsorship of co-financing of the project from Alcor Labs LLP -to identify the reasons for the formation of steal in liquid extraction of copper using steal suppressors.Conducting research to develop optimal conditions for copper extraction processes, testing modes, dated 04/08/2022, No. 2.	700,000 (seven hundred thousand) tenge	
2	SaG	Investments licensed ArcGIS software for 50 places	35,000,000	
3	CPaIE	Interactive panel, blinds (134 GMK)	1,400,000 tenge	For the 2021-2022 academic year (7 million in 2, 24, 26, 27 TTK)
4	MPHEaTSM	Sponsorship for the opening of the auditorium named after V.A. Luganova	US$10,000	Auditorium opening

				November 2023

Table28 - SWOT analysis

S (strength) - strengths	W (weakness) - weaknesses
material and technical base; highly qualified teaching staff; high publication activity in publications indexed in Web of Science, Scopus, KKSON MES RK; ➢ Career guidance work is carried out, assistance is provided in choosing and achieving career paths;	➢ insufficient degree of participation in international scientific projects; ➢ insufficient level of commercialization of projects and scientific developments of scientists; ➢ lack of mobility of teaching staff and students; ➢ low share; ➢ foreign students; ➢ Teaching staff with foreign education; ➢ EP with multilingual training ➢ EP with training in English ➢ provision of personalized interactive resources (with access during extracurricular hours), including educational materials and assignments, provision of the possibility of trial self-assessment of students' knowledge through remote access to the university portal (site); ➢ ensure the improvement of the library and information and communication system of the university, integrated into the global information space; ➢ Unstable Internet connection in the buildings, lack of WI-FI, computer classes have not been modernized for more than 5 years.
O (opportunity) - favorable opportunities	**T (threat) - anxiety, obstacles**
➢ harmonization of educational programs with national professional standards, taking into account the interests of key employers; ➢ focus on passing international accreditation of educational programs: ➢ within the framework of the national project "Atlas of new professions", two new EPs 6B07213 - "Mineral processing", 6B07212 - "Recycling in metallurgy" were developed for training personnel with the award of a bachelor's degree in new professions in demand in the labor market. ➢ increasing the degree of dignity of the department due to the graduation of doctoral students of the department with timely defense of their dissertation ➢ improve the system of cooperation with domestic and foreign companies to solve educational, scientific, production and business problems.	➢ a decrease in the number of students due to the distribution of government grants among groups of educational programs; ➢ a new wave of financial and economic crisis leading to a decrease in the solvency of the population and enterprises (the threat of a decrease in the number of commercial students and the loss of customers for educational and scientific services, the departure of students, including from senior years); ➢ a decrease in the number of students from the regions due to poor school preparation. ➢ possible termination of activities by leading professors due to retirement. ➢ failure of existing devices; ➢ The market of the Republic of Kazakhstan lags behind the achievements of science and technology in automation and digitalization. ➢ Untimely defense of dissertation work by PhD students; ➢ Not all domestic and foreign companies cooperate

S (strength) - strengths	W (weakness) - weaknesses
➢ Quantitativeand the qualitative composition of the teaching staff - degree of teaching staff - 76.9% (excluding masters), 100% degree of teaching staff for master's and doctoral studies, average age - 49.9. The share of full-time teaching staff is 80.8% of the total number of teachers.	➢shortage of teaching staff load
O (opportunity) - favorable opportunities competition for filling vacant positions	T (threat) threats - generational change
S (strength) - strengths	W (weakness) - weaknesses

➢Promotionqualifications - for 2022-2023 teaching staff - 73% completed an international internship and advanced training in the amount of 72 hours ➢Completed advanced trainingin leading universities, enterprises, organizations - 30% Completed advanced trainingin leading universities, enterprises, organizations Completed advanced trainingin leading universities, enterprises, organizations	➢insufficient funding for advanced training from KazNRTU for foreign internships.
O (opportunity) - favorable opportunities for competitive work for vacant positions, cooperation of the department with associations, enterprises and international organizations for advanced training	T (threat) threats – lack of advanced training certificates
S (strength) - strengths	W (weakness) - weaknesses
➢ The Department of MPHEaTSM provides multilingual training, disciplines taught in English: Special chapters of extractive metallurgy (in English) - 7M07204 Metallurgical engineering (in English) (r/o) - 6B07203. The Department of MPHEaTSM provides the entire stream of metallurgists with specialized disciplines in both undergraduate and graduate courses in English.	➢not all students speak English at the proper level
O (opportunity) - favorable opportunities to improve the English language level of teaching staff and students	T (threat) threats – load reduction
S (strength) - strengths	W (weakness) - weaknesses
Educational and methodological work: Absolute performance, , Fall semester for 1st course –76.5%; for 2nd year –79.5%; in the 3rd year – 85.6%; in the 4th year – 84.7%; Spring semester for 1st course –71.3%; for 2nd year –82.2%; in the 3rd year – 83.4%; 4th year – 82.6%	➢low performance among 1st and 2nd year students in general education subjects.
O (opportunity) – potential opportunity to create additional classes and courses for lagging students	T (threat) threats – lack of additional classes and individual approach from teaching staffgeneral education disciplines.
S (strength) - strengths	

One of the priority areas for the integration of Kazakhstani higher education into the international educational space is certainly double-diploma education. Agreement signed withNational Research Tomsk Polytechnic University.For educational programs in metallurgy, the Department of MPHEaTSM, together with NUST MISIS, has developed a double-diploma, innovative educational master's program (agreement dated December 20, 2022 No. 12-51) "7M07229 - Extractive metallurgy" together with the National Research Technological University "MISiS", Russia. Advantages of the double degree program • international experience; • employment prospects after graduation; • mastering progressive knowledge from leading teachers of partner universities; • obtaining 2 diplomas from KazNRTU + partner university.	➢it is necessary to equip classrooms in specialized disciplines with new software
O (opportunity) – development of a virtual laboratory, retrofitting of classroom software	T (threat) threats – no
S (strength) - strengths	W (weakness) - weaknesses
O (opportunity) The department provides complete data on students for internships at enterprises for the purpose of their further employment	T (threat) threats - enterprises do not want to organize internships at their premises and provide students with jobs in full for trainees
S (strength) - strengths	W (weakness) - weaknesses
O (opportunity) – employment indicators: Based on the results of the rating conducted by AtamekenThe employment rate in 2022 was: Mining 79%, Geospatial Digital Engineering 100%, Metallurgy 69%, Engineering Physics and Materials Science 40% In general, there is a tendency to strengthen positions on statistical data and student achievements.	T (threat) threats is not a completely correct rating assessment procedure from Atameken. Low activity of enterprises in employing graduates.
S (strength) - strengths	W (weakness) - weaknesses
Educational and methodological work: The department provides complete data on students for internships at enterprises for the purpose of their further employment	➢without practice there is a lack of production skills
S (strength) - strengths	W (weakness) - weaknesses
O (opportunity) – potential opportunity to create additional classes and courses for lagging students	T (threat) threats – lack of additional classes and individual approach from teaching staffgeneral education disciplines.
S (strength) - strengths	W (weakness) - weaknesses
Researchteaching staff work: 60% of teaching staff are engaged in scientific projects for 2022-2023; during the reporting period, 35 applications were submitted to various competitions under the Global Fund. The amount of contract research in 2023 was –**157 441 302**tenge	➢non-transparent evaluation of applications at Global Fund competitions
O (opportunity) – potential opportunity to apply in 2023-2024.	T (threat) threat – reduction in funding from the Global Fund for projects.
S (strength) - strengths	W (weakness) - weaknesses

In 2022, scientists of the institute published 105 articles in the SCOPUS and WoS databases, of which 52 articles were published in journals with quartiles Q1 and Q2. During the reporting period, 6 monographs, 2 textbooks, 1 study guide were published, 9 patents of the Republic of Kazakhstan were	➢it is necessary to modernize the department's laboratories to meet the needs of enterprises to carry out research and increase publications
O (opportunity) – available scientific schools on pyrometallurgical and hydrometallurgical processes and technologies	T (threat) threat – reduction in funding from the Global Fund for projects.
S (strength) - strengths	W (weakness) - weaknesses
The international cooperation:Sumedh Gostu – PhD, production worker, working on the project of Chepushtanova T.A. AP08052829 "Development of a hybrid technology for the complex processing of oxidized, difficult-to-enrich zinc, lead-containing ores and middling products enriched by sulfiding roasting with subsequent enrichment of cinder."	➢it is necessary to increase the amount of funding for visiting professors
O (opportunity) – existing scientific schools are actively in contact with foreign scientists.	T (threat) threats – reduction of international cooperation

10 Post-accreditation monitoring

Table 29- Report on the implementation of recommendations of external expert groups in the context of the EP "Geospatial Digital Engineering"

No.	VEC recommendations	Name of the planned eventto implement the recommendations of the EEC	Responsible structural unitor face	Deadlines	Markabout execution: % completed and list of completed work
Standard "Educational Program Management"					
1	develop regulations for the creation and modernization of educational programs.It is recommended to bring up the experience of working on the EP for discussion once a year and make the necessary changes to it. The presented regulations must clearly define the compliance of all university educational programs with the strategic goals of the development of the university and the educational space of the country as a whole. Completion date: from the 2021-2022 academic year.	Taking into account the wishes of employers, changes are being made when developing RUPs	SaG	During the year	Approved RUP

conclusionsand proposals for the report

The departments of the Institute meet the qualification requirements foreducational activities.

The composition of the teaching staff meets the requirements for the training of scientific and pedagogical personnel, the implementation of scientific research, international and educational activities.

The number of teaching staff for the 2022-2023 academic year is only 110, of which 88 are full-time, 13 doctors of science, 36 candidates of science, 21 PhD doctors, 18 masters. The degree of teaching staff –76.6% (excluding masters), average age - 46.5.

The institute trains personnel in 10 undergraduate educational programs, 11 master's educational programs, and 9 doctoral educational programs.

As part of the Atlas of New Professions, departments have developed new EPs approved by ESUVO experts.

6B07212 – Recycling in metallurgy;

6B07219 – Metallurgy of non-ferrous metals;

6B07217 – Technology of rare and radioactive elements;

6B07218 – Foundry technology;

6B07116 – Technology of main production and new materials;

6B07213 – "Mineral prossesing"

Holders of the titleThe Republican competition "Best University Teacher - 2022" was:

1. Rysbekov Kanai Bakhytovich;
2. Chepushtanova Tatyana Aleksandrovna;
3. Orynbasarova Elmira Orynbasarovna;
4. Abildina Ainaz Kairatovna;
5. Koishina Gulzada Myngyshkyzy

The winner of the "Best Researcher" award in 2022 was a professor at the Department of Metallurgy and Mineral ProcessingDosmukhamedov Nurlan Kalievich.

WinnereatNational industry competition "Golden Hephaestus" in the category "Teacher of the Year"became director of the instituteRysbekov Kanai Bakhytovich;

State scientific scholarship for talented young scientists was awarded to a senior lecturer at the Department of Metallurgy and Mineral ProcessingTazhiev Eleusiz Bolatovich.

The academic title "Professor" in the field of Metallurgy was awarded to Nurlan Kalievich Dosmukhamedov (Order No. 92 of November 24, 2022 "On the award of the academic title").

Awarded the academic title of "Professor" in the fieldGeodesy and surveyingRysbekov Kanai Bakhytovich (Order No. 10 of January 19, 2023 "On the award of an academic title").

The academic title "Associate Professor" in the field of Environmental Engineering was awarded to Madina Bogembaevna Barmenshinova (Order No. 126 of March 17, 2023 "On the award of the academic title").

In 2023, the Mining and Metallurgical Institute entered into agreements with Tomsk Polytechnic University (RF) for the following joint EP double-degree education:

7M07103 – Materials science and technology of new materials;

7M07110 – Chemical processes and production of chemical materials;

7M07204 – Metallurgy and mineral processing;

7M07226 – Mineral processing.

In 2024, it is planned to conclude agreements with the following foreign universities.

- Technical University Freiberg Mining Academy /Technische Universität Bergakademie Freiberg;
- Pennsylvania State University;
- Istanbul Technical University / Istanbul Technical University;
- National Technical University of Athens/ Εθνικό Μετσόβιο Πολυτεχνείο.

The graduation rate of bachelors in 2023 was 265, which is 84 more people compared to 2022.

The teaching load planned for the 2022-2023 academic year in the departments of the institute has been completed.

Analyzing the results of the spring examination session of the 2022-2023 academic year, it is possible to identify a number of reasons that affected the decline in student performance. In recent years, the following has been noticed: most students with debts come to the retake completely unprepared. Due to the fact that some students who have many absences and do not show diligence in their studies are not expelled, their motivation to study decreases, although they have the opportunity and ability to perform well.

The analysis of student performance based on the session results is as follows:

Fall semester

for 1st course –76.5%;

for 2nd year –79.5%;

in the 3rd year – 85.6%;

in the 4th year – 84.7%;

Spring semester

for 1st course –71.3%;

for 2nd year –82.2%;

in the 3rd year – 83.4%;

4th year – 82.6%

In general, the results of the autumn and spring examination sessions of the 2022-2023 academic year can be considered satisfactory. The grades received by students are close to the actual level of their knowledge.

The total amount of funding for research work on MaMI is 1,878,211,490 tenge.

The number of ongoing research projects under the Global Fund for 2020-2022, 2021-2023 and 2022-2024 is 25 projects; the total amount of funding for all MaMI MaMI projects for 2022 and 2023 is 985.8 million tenge

The total amount of funding under concluded agreements for contract research is 322,535,348tenge

The amount of contract research was: in 2020 -68 120 112 tenge, in 2021 – 106,120,000 tenge,in 2022 –165,094,046 tenge, in 2023 - 157,441,302 tenge. Of the ten economic contracts being carried out in 2023, 4 contracts are carried out at the

Department of Mining and 5 contracts at the Department of Metallurgy and Mineral Processing.

Scientists of the institute submitted 25 applications for the 2023-2025 Global Fund competition, of which 21 projects were submitted to the National Research Council.

According to the Global Fund competition for the most promising projects for the commercialization of the results of scientific and (or) scientific and technical activities (RNSTD) for 2022-2024, 2 applications were won (Moldabaev S.K. and Bektay E.). Professor of the Department of MaMP Dosmukhamedov N.K. is a member of the NSC for commercialization.

3 contracts for contract research will be concluded in the amount of 150 million tenge.

In 2022, scientists of the institute published 105 articles in the SCOPUS and WoS databases, of which 52 articles were published in journals with quartiles Q1 and Q2. During the reporting period, 6 monographs, 2 textbooks, 1 study guide were published, 9 patents of the Republic of Kazakhstan were received.

Information on employment of graduates is provided,on international cooperation, equipment of the material and technical base, career guidance work.

However, you need to pay attention to the following disadvantages:

- insufficient degree of participation in international scientific projects;
- low level of commercialization of projects and scientific developments;
- insufficient mobility of teaching staff and students;

low share:

-foreign students;

- teaching staff with foreign education;

-EP with training in English

In the further work of the institute, it is necessary to develop international cooperation in the field of joint research, to attract teachers with knowledge of English, production specialists, and foreign professors to give lectures on a regular or modular schedule.