NCJS «KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY
named after K.I.SATBAYEV»

Mining and Metallurgical Institute named after O.A. Baikonurov
Department of "Mining"

EDUCATIONAL PROGRAM
"8D07203 - Mining Engineering"

Code and classification of the field of education:	8D07 – Engineering, manufacturing and construction industries
Code and classification of training areas:	8D072 – Manufacturing and processing industries
Group of educational programs:	D116 – Mining and mineral extraction
The level of the NRK:	8
ORC Level:	8
Duration of training:	3 years
Volume of loans:	180

Almaty, 2025

The educational program 8D07203 - "Mining Engineering" was approved at a meeting of the Academic Council of KazNRTU named after K.I. Satpayev
Protocol № 10 from « 06 » March 2025.

Considered and recommended for approval at the meeting of the Educational and Methodological Council of KazNRTU named after K.I. Satpayev
Protocol № 3 from « 22 » December 2024.

The educational program 8D07203 - "Mining Engineering" was developed by the academic committee in the direction of 8D072- "Manufacturing and processing industries"

Full name	Academic degree/academic title	Post	Place of work	Signature
Chatiman of the Academic Committee:				
Moldabayev Serik	Doctor of Technical Sciences, Professor	Head of the Department	KazNRTU named after K.I. Satpayev	
Teaching staff:				
Yusupov Kh.	Doctor of Technical Sciences, Professor	Professor	KazNRTU named after K.I. Satpayev	
Sandibekov Manarbek	Candidate of Technical Sciences, Associate Professor	Professor	KazNRTU named after K.I. Satpayev	
Employers:				
Uteshov Y.	PhD doctor	Director	IGD named after D.A. Kunaeva	
Amankulov Maksat	Master of Engineering sciences	Executive Director	Antal LLP	
Orynbayev Baurzhan	PhD doctor	Head of the BVR Parameters Department	NPP Interrin LLP	
Gryaznov V.	Master of Engineering sciences	Head of the Mining Department	Antal LLP	
Students:				
Tilektes Ayaulym		3rd year student		
Karsibekov Magzhan		2nd year Master 's student		
Assylkhanova Gulnur	Master of Engineering sciences	3rd year doctoral student		

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List of abbreviations and designations

NAO "Kazakh National Research Technical University named after K.I.Satpayev" – NAO KazNITU named after K.I.Satpayev;

SES – The State compulsory standard of education of the Republic of Kazakhstan;

MES RK – Ministry of Education and Science of the Republic of Kazakhstan;

OP – educational program;

SRO – independent work of a student (student, undergraduate, doctoral student);

SROP – independent work of the student with the teacher (independent work of the student (master's student, doctoral student) with the teacher);

RUP – working curriculum;

CAD – catalog of elective disciplines;

VK – university component;

KV – component of choice;

NRK – National Qualifications Framework;

ORC – Industry qualifications framework;

RO – learning outcomes;

CC – key competencies.

1 Description of the educational program

The educational program for the preparation of a Doctor of Philosophy (PhD) has a scientific and pedagogical orientation and assumes fundamental educational, methodological and research training and in-depth study of disciplinesin the relevant fields of sciences for the system of higher and postgraduate education and the scientific sphere.

The educational program for the preparation of a doctor in the profile involves fundamental educational, methodological and research training and in- depth study of disciplines in the relevant areas of science for the branches of the national economy, the social sphere: education, medicine, law, art, economics, business administration and in the field of national security and military affairs.

The educational programs of doctoral studies in terms of professional training are developed on the basis of studying the experience of foreign universities and research centers that implement accredited training programs for PhD doctors or doctors in the profile.

The content of the educational program of the profile doctoral program is determined by the university independently.

The main criterion for the completion of the educational process for the preparation of doctors of philosophy (PhD) (doctors in the profile) is the development of at least 180 academic credits by a doctoral student, including all types of educational and scientific activities.

The duration of doctoral studies is determined by the amount of academic credits mastered. Upon mastering the established amount of academic credits and achieving the expected learning outcomes for obtaining a Doctor of Philosophy (PhD) degree or by profile, the educational program of the doctoral program is considered fully mastered.

The content of the doctoral program consists of:

1) theoretical training, including the study of cycles of basic and core disciplines;

2) practical training of doctoral students: various types of practices,scientific or professional internships;

3) research work, including the execution and defense of a PhD thesis;

4) final certification.

The training of personnel in doctoral studies is carried out on the basis of educational programs of doctoral studies in two directions:

1) scientific and pedagogical with a training period of at least three years;

2) profile with a training period of at least three years.

The content of the OP 8D07203- "Mining Engineering" on the basis of the development of a multi-level system of personnel training, the fundamental nature and quality of training, continuity and continuity of education and science, unity of training, education, research and innovation activities aimed at maximum satisfaction of consumer needs should ensure:

- obtaining a full-fledged and high-quality professional education in the field

of mineral deposits development (MPI), confirmed by the level of knowledge and skills, skills and competencies, based on the criteria established by the State Educational Standard, their assessment, both in content and in volume:

- training of professional and competitive specialists in the field of MPI development and creation of new mining production technologies and production management;
- using methods of analysis and evaluation of experimental results.

2 The purpose and objectives of the educational program

The purpose of this educational program is to create, based on the integration of education and science, an effective system of training scientific, scientific and pedagogical personnel of a new formation capable of solving issues of improving society, economy, production, science and the development of new technologies and the implementation of the educational process in accordance with the principles of international practice of training highly qualified scientific and pedagogical personnel, competitive in the modern labor market

The goal reflects the desire to ensure high-quality training through the integration of education, science and production, strengthening the material and technical base and human resources of the university, the use of modern methods and technologies in the educational process. The training involves serious research work, the performance of which significantly increases the status of a doctoral student as a young scientist in his field.

The tasks of EP 8D07203 – "Mining Engineering" are:

- preparation of PhD doctors who are competitive both within the country and on the international labor market, integration of national doctoral programs into the global educational space;
- monitor, analyze and evaluate the actions of subordinates, manage a team of performers, including in emergency situations;
- to carry out work on the improvement of production activities, the development of projects and programs for the development of the enterprise (divisions of the enterprise);
- analyze the processes of mining, mining and construction industries and complexes of used equipment as control objects;
- plan and carry out theoretical, experimental and laboratory studies, process the results obtained using modern information technologies;
- to carry out patent search, to study scientific and technical information, domestic and foreign experience on the subject of research;
- to develop models of processes, phenomena, to evaluate the reliability of the constructed models using modern methods and means of information analysis;
- to carry out a technical and economic assessment of deposits of solid minerals and underground construction facilities, the efficiency of the use of technological equipment;
- perform calculations of technological processes, productivity of technical

means of complex mechanization of works, throughput of transport systems of mining enterprises, make schedules of work organization and calendar plans for the development of production;

- substantiate design decisions to ensure industrial and environmental safety, economic efficiency of production facilities for operational exploration, extraction and processing of minerals, during the construction and operation of underground facilities;

- develop the necessary technical documentation as part of creative teams and independently;

- independently draw up projects and passports of mining and drilling and blasting operations;

- to carry out the design of enterprises for the extraction and processing of solid minerals, as well as the construction of underground facilities using modern information technologies.

3 Requirements for evaluating the learning outcomes of an educational program

Persons who have mastered the educational program of doctoral studies and defended a doctoral dissertation, with a positive decision of the dissertation councils of a university with a special status or the Committee for Control in the Field of Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan, according to the results of the examination, are awarded the degree of Doctor of Philosophy (PhD) or doctor in profile and a state-issued diploma with an appendix (transcript). Persons who have received a PhD degree, in order to deepen scientific knowledge, solve scientific and applied problems on a specialized topic, perform a postdoctoral program or conduct scientific research under the guidance of a leading scientist of the chosen university.

Students have direct access to CAT, curricula, syllabuses, which are posted on the university's website, and also have the opportunity to get acquainted with presentations of academic disciplines posted on the university's website and departments.

The cycle of basic disciplines is the foundation of professional education.

The purpose of the cycle of specialized disciplines is to provide deep theoretical knowledge and practical application of special engineering knowledge.

Requirements for the key competencies of doctoral graduates:

1) have an idea:

- about the main stages of development and paradigm shift in the evolution of science;

- on the subject, ideological and methodological specifics of the natural (social, humanitarian, economic) sciences;

- about scientific schools of the relevant branch of knowledge, their theoretical and practical developments;

- about scientific concepts of world and Kazakh science in the relevant field;

- on the mechanism of implementation of scientific developments in practical activities;
- on the norms of interaction in the scientific community;
- about the pedagogical and scientific ethics of a research scientist.

2) know and understand:

- current trends, trends and patterns of development of Russian science in the context of globalization and internationalization;
- methodology of scientific knowledge;
- achievements of world and Kazakh science in the relevant field;
- (to realize and accept) the social responsibility of science and education;
- perfect foreign language for scientific communication and international cooperation.

3) be able to:

- to organize, plan and implement the process of scientific research;
- analyze, evaluate and compare various theoretical concepts in the field of research and draw conclusions;
- analyze and process information from various sources;
- conduct independent scientific research, characterized by academic integrity, based on modern theories and methods of analysis;
- generate your own new scientific ideas, communicate your knowledge and ideas to the scientific community, expanding the boundaries of scientific knowledge;
- plan and predict your further professional development.

4) have skills:

- critical analysis, evaluation and comparison of various scientific theories and ideas;
- analytical and experimental scientific activities;
- planning and forecasting of research results;
- public speaking and public speaking at international scientific forums, conferences and seminars;
- scientific writing and scientific communication;
- planning, coordination and implementation of scientific research processes;
- a systematic understanding of the field of study and demonstrate the quality and effectiveness of the selected scientific methods;
- participation in scientific events, fundamental scientific domestic and international projects;
- leadership management and team management;
- responsible and creative attitude to scientific and scientific-pedagogical activity;
- conducting patent search and experience in the transfer of scientific information using modern information and innovative technologies;
- protection of intellectual property rights to scientific discoveries and developments;
- free communication in a foreign language;

5) be competent:

- in the field of scientific and scientific-pedagogical activity in the conditions of rapid updating and growth of information flows;

- in carrying out theoretical and experimental scientific research;

- in the formulation and solution of theoretical and applied problems in scientific research;

- to conduct a professional and comprehensive analysis of problems in the relevant field;

- in matters of interpersonal communication and human resource management;

- in matters of university training of specialists;

- in the examination of scientific projects and research;

Requirements for the research of a student under the Doctor of Philosophy (PhD) program:

1) compliance with the main problems of the educational program of the doctoral program on which the doctoral dissertation is being defended;

2) relevant and contains scientific novelty and practical significance;

3) based on modern theoretical, methodological and technological achievements of science and practice;

4) is based on modern methods of data processing and interpretation using computer technology;

5) performed using modern methods of scientific research;

6) contains research (methodological, practical) sections on the main protected provisions.

The practice is conducted in order to form practical skills of scientific, scientific, pedagogical and professional activities.

The educational program of the doctoral program includes:

1) pedagogical and research practice – for students of the PhD program;

2) industrial practice – for students in the program of specialized doctoral studies.

During the period of pedagogical practice, doctoral students, if necessary, are involved in conducting classes in bachelor's and master's degrees.

The doctoral student's research practice is conducted in order to study the latest theoretical, methodological and technological achievements of domestic and foreign science, as well as to consolidate practical skills, apply modern research methods, process and interpret experimental data in dissertation research.

The doctoral student's industrial practice is carried out in order to consolidate the theoretical knowledge gained in the course of training and improve the professional level.

The content of research and production practices is determined by the topic of the doctoral dissertation.

Students complete the internship program, keep diaries, observe the rules of labor regulations at the places of internship, study and follow the rules of TB. At the end of the practice, they provide the head of the practice with a report on the practice, a written diary and defend the report on the practice in due time.

4 Passport of the educational program

4.1 General information

№	Field name	Note
1	Code and classification of the field of education	8D07 – Engineering, manufacturing and construction industries
2	Code and classification of training areas	8D072 – Manufacturing and processing industries
3	Group of educational programs	D116 – Gornoye delo i dobycha poleznykh iskopayemykh
4	Name of the educational program	8D07203-Mining Engineering
5	Brief description of the tional program	The training involves serious research work, the performance of which significantly increases the status of a doctoral student as a young scientist in his field
6	Purpose of the EP	The purpose of this educational program is to create, based on the integration of education and science, an effective system of training scientific, scientific and pedagogical personnel of a new formation capable of solving issues of improving society, economy, production, science and the development of new technologies and the implementation of the educational process in accordance with the principles of international practice of training highly qualified scientific and pedagogical personnel, competitive in the modern labor market. The set of disciplines corresponds to the goals of sustainable development: quality education; decent work and economic growth; industrialization, innovation and infrastructure.
7	Type of EP	New
8	The level of the NRK	8
9	ORC Level	8
10	Distinctive features of the EP	No
11	List of competencies educational program:	1) To carry out work on the improvement of production activities, the development of projects and programs for the development of an enterprise (divisions of an enterprise) 2) To analyze the processes of mining, mining-construction industries and the complexes of the equipment used as control objects 3) Plan the implementation of theoretical, experimental and laboratory studies with the processing of the results obtained using modern information technologies 4) Perform patent search, analyze scientific and technical information, domestic and foreign experience on research topics 5) Develop models of processes, phenomena, evaluate the reliability of the constructed models using modern methods and tools for information analysis 6) Prepare a technical and economic assessment of solid mineral deposits and underground construction facilities, the effectiveness of the use of process equipment 7) Make calculations of technological processes, the productivity of technical means of complex mechanization of work, the throughput of transport systems of mining enterprises, offer schedules for the organization of work and calendar plans for the development of

		production 8) Evaluate design solutions to ensure industrial and environmental safety, economic efficiency of production facilities for operational exploration, mining and processing of minerals, during the construction and operation of underground facilities 9) Design enterprises for the extraction and processing of solid minerals, as well as the construction of underground facilities using modern information technologies 10) Plan the development parameters of a mining enterprise
12	Learning outcomes of the educationalprogram:	Defense by a doctoral student of a dissertation after completing doctoral studies in EP 8D07203- "Mining Engineering"
13	Form of training	Full - time full
14	Duration of training	3 years
15	Volume of loans	180
16	Languages of instruction	Kazakh, Russian, English
17	Academic degree awarded	PhD doctor of philosophy in the educational program 8D07203- "Mining engineering"
18	Developer and authors:	S.K. Moldabaev

4.2 The relationship between the achievability of the formed learning outcomes according to the educational program and academic disciplines

№	Name of the discipline	Brief description of the discipline	Number of credits	Generated learning outcomes (codes)									
				LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9	LO10
Cycle of basic disciplines M-1. Basic training module (university component)													
1	Academic writing	Objective: to develop academic writing skills and writing strategies for doctoral students in engineering and natural sciences. Content: fundamentals and general principles of academic writing, including: writing effective sentences and paragraphs, writing an abstract, introduction, conclusion, discussion, and references; in-text citation; preventing plagiarism; and preparing a conference presentation.	5		X	X	X	X	X		X		
2	Methods of scientific research	Purpose: It consists in mastering knowledge about the laws, principles, concepts, terminology, content, specific features of the organization and management of scientific research using modern methods of scientometry. Contents: structure of technical sciences, application of general scientific, philosophical and special methods of scientific research, principles of organization of scientific research, methodological features of modern science, ways of development of science and scientific research, the role of technical sciences, computer science and engineering research in theory and practice.	5		X	X	X	X	X				X
Component of choice													
3	Geotechnical support for the development of underground space	Purpose: to ensure the safety of the surrounding development and avoid negative impact on the environment, geological and hydrogeological environment during geotechnical support of underground space development. Content: structural solutions and gentle construction technologies minimizing the impact on the surrounding development and underground structures in the zone of possible risk; a set of measures for preventive protection of the surrounding development and underground structures in the zone of possible risk, adequate to the anticipated impacts.	5	X	X	X	X	X	X	X	X		X
4	Managing the spatial position of the contours of deep quarries	Purpose: preservation in stable position of slopes of ledges and sides of quarries at their long-term standing. Content: methods of assessing the stress-strain state of outcrops of open-pit mine workings, methods of artificial reinforcement of slopes of ledges and sides of quarries in the presence of weakly stable massifs of rocks, the use of ground penetrating radar for fixing the shift of the contours of the quarry, the formation of a metal grid in the places of falling pieces of rock, taking into account the renewal of the position of mine workings in the strategic planning of mining development.	5		X	X	X	X	X	X	X	X	X
5	The development of the	Purpose: to ensure the reduction of oversize output and uniform crushing	5			X	X	X		X	X	X	X

	theory and design methods of drilling and blasting operations in the development of mineral deposits	of rocks through the development of advanced methods of design of drilling and blasting operations. Content: modern approaches to the theory of gas action in the destruction of monolithic rock masses and the development of effective methods of planning drilling and blasting operations in open pit and underground mining of mineral deposits on its basis, the choice of optimal design of borehole charge, blasting systems, methods of creating air gaps and replacing the bottom hole with the use of universal locking device, pneumatic gates and pneumatic hangers.											
Cycle of profile disciplines M-2. Profile training module (optional component)													
6	Innovative technologies of uranium extraction by underground borehole leaching	Purpose: to disclose the latest achievements in the completeness of recovery of uranium deposits from the subsurface, especially hard-to-recover reserves. Content: innovative methods of uranium dissolution through injection wells with leaching solution using appropriate reagents depending on the nature of the ore body, increasing the area of uranium dissolution, and increasing the completeness of uranium-containing solution recovery to the surface.	5	X	X	X	X	X		X	X	X	X
7	Scientific support of technical solutions for underground mining processes	Purpose: analysis and theoretical generalization of the accumulated experience of scientific support of technical solutions in underground mining processes. Content: the use of mathematical and physical modeling in the establishment of parameters of release figures, losses and dilution, comparative technical and economic analysis of development systems, approbation of technological solutions in the conditions of operating mines, problem assessment, prospects for the development of the mining industry and scientific support of new technological opportunities in the processes of underground development of ore and nonmetallic resources.	5		X	X	X	X	X	X	X	X	X
8	Automated design and production of mass explosions in open pits	Purpose: to master the platform for controlling the process of rock destruction in quarries through the development of skills in the application of program modules in the automated design and production of mass explosions. Content: application of program modules "Granulometric composition of the constituent parts in the rock mass", "Dimensions of the zone of intensive crushing of rocks", "Rational parameters of the location of charges in the ledge", "Granulometric composition of the blasted rock mass", "Placement of heterogeneous rocks in the collapse" for the preparation of information and experimental information in the practice of computer-aided design and production of mass explosions.	5	X		X		X		X	X	X	
9	Physico-chemical geotechnology	Purpose: to master the basic issues of the theory of physical-chemical geotechnology and presentation of physical-chemical methods of mineral extraction. Content: geological, hydrogeological and other factors determining the effectiveness of physical-chemical geotechnology	5			X	X	X	X		X		

		methods, stripping, preparation and systems of field development, means of mineral extraction, the specifics of design of geotechnological enterprises, methods of calculating the parameters of extraction, as well as economics and environmental protection issues.											
10	Designing the combined development of mineral deposits	Purpose: mastering of design skills in the transition from open pit to underground mining of mineral deposits. Content: geomechanical justification of the limiting height of the open-underground level and the thickness of the remaining pillar between the open and underground workings, the technology of mining the open-underground level, ways of effective safe transition to the underground method with the construction of underground workings, selection and justification of underground mining technology in conjunction with open pit mining, establishing the impact of the size of the open pit on the underground method of stripping and safety of underground mining operations.	5	X	X	X			X	X	X	X	X
11	Scientific substantiation of the construction of special underground structures	Purpose: to learn how to create safe, comfortable conditions for rock excavation and erection of temporary or permanent support without disturbing the integrity of the surrounding massif and impact on underground utilities that fall within the construction zone. Content: familiarization with special methods of sinking underground structures in complex mining and geological conditions, including additional methods of production and organization of tunneling works and technical support for their safe implementation, including volumetric modeling of the frame-deformed image of the rock massif of the background mine workings, taking into account tectonic faults, karst cavities, watering and leading fracturing.	5		X	X	X	X	X	X	X	X	X
12	Intellectual property and the global market	Purpose: the goal is to train specialists in the field of intellectual property law who can analyze and predict trends in its development in the global market, develop strategies for the protection and commercialization of intellectual property. Contents: global aspects of intellectual property and its role in international trade and economics, analysis of international agreements and conventions, IP management strategies, cases of protection and violation of intellectual property rights in various jurisdictions.	5	X	X	X	X	X	X	X	X		X

5 Curriculum of the educational program

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

SATBAYEV UNIVERSITY

«APPROVED»
Decision of the Academic Council
NPJSC«KazNRTU
named after K.Satbayev»
dated 06.03.2025 Minutes № 10

WORKING CURRICULUM

Academic year	**2025-2026 (Spring, Autumn)**
Group of educational programs	**D116 - "Mining engineering"**
Educational program	**8D07203 - "Mining engineering"**
The awarded academic degree	**Doctor of Philosophy PhD**
Form and duration of study	**full time (scientific and pedagogical track) - 3 years**

Discipline code	Name of disciplines	Block	Cycle	Total ECTS credits	Total hours	lek/lab/pr Contact hours	in hours SIS (including TSIS)	Form of control	Allocation of face-to-face training based on courses and semesters						Prerequisites
									1 course		2 course		3 course		
									1 sem	2 sem	3 sem	4 sem	5 sem	6 sem	
CYCLE OF GENERAL EDUCATION DISCIPLINES (GED)															
CYCLE OF BASIC DISCIPLINES (BD)															
M-1. Module of basic training (university component)															
MET322	Methods of scientific research		BD, UC	5	150	30/0/15	105	E		5					
LNG305	Academic writing		BD, UC	5	150	0/0/45	105	E		5					
MIN323	Innovative technologies of uranium extraction by underground borehole leaching	1	BD, CCH	5	150	30/0/15	105	E		5					
MIN324	Managing the spatial position of the contours of deep quarries	1	BD, CCH	5	150	30/0/15	105	E		5					
MIN311	The development of the theory and design methods of drilling and blasting operations in the development of mineral deposits	1	BD, CCH	5	150	30/0/15	105	E		5					
MNG349	Intellectual property and the global market	1	BD, CCH	5	150	30/0/15	105	E		5					
M-3. Practice-oriented module															
AAP350	Pedagogical practice		BD, UC	10				R	10						
CYCLE OF PROFILE DISCIPLINES (PD)															
M-2. Module of professional activity (component of choice)															
MIN313	Geotechnical support for the development of underground space	1	PD, CCH	5	150	30/0/15	105	E		5					
MIN315	Scientific support of technical solutions for underground mining processes	1	PD, CCH	5	150	30/0/15	105	E		5					
MIN316	Automated design and production of mass explosions in open pits	1	PD, CCH	5	150	30/0/15	105	E		5					
MIN317	Physico-chemical geotechnology	2	PD, CCH	5	150	30/0/15	105	E		5					
MIN320	Designing the combined development of mineral deposits	2	PD, CCH	5	150	30/0/15	105	E		5					
MIN319	Scientific substantiation of the construction of special underground structures	2	PD, CCH	5	150	30/0/15	105	E		5					
M-3. Practice-oriented module															
AAP355	Research practice		PD, UC	10				R			10				
M-4. Experimental research module															

AAP347	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	20				R	20						
AAP336	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	5				R		5					
AAP347	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	20				R			20				
AAP356	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	30				R				30			
AAP356	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	30				R					30		
AAP348	Research work of the doctoral student, including internships and doctoral dissertation		RWDS	18				R						18	
M-5. Module of final attestation															
ECA325	Final examination (writing and defending a doctoral dissertation)		FA	12										12	
Total based on UNIVERSITY:									30	30	30	30	30	30	
									60		**60**		**60**		

Number of credits for the entire period of study

Cycle code	Cycles of disciplines	Credits			
		Required component (RC)	University component (UC)	Component of choice (CCH)	Total
GED	Cycle of general education disciplines	0	0	0	0
BD	Cycle of basic disciplines	0	20	5	25
PD	Cycle of profile disciplines	0	10	10	20
Total for theoretical training:		**0**	**30**	**15**	**45**
RWDS	Research Work of Doctoral Student				123
ERWDS	Experimental Research Work of Doctoral Student				0
FA	Final attestation				12
TOTAL:					**180**

Decision of the Educational and Methodological Council of KazNRTU named after K.Satpayev. Minutes № 3 dated 20.12.2024

Decision of the Academic Council of the Institute. Minutes № 4 dated 12.12.2024

Signed:

Governing Board member - Vice-Rector for Academic Affairs — Uskenbayeva R. K.

Approved:

Vice Provost on academic development — Kalpeyeva Z. Б.

Head of Department - Department of Educational Program Management and Academic-Methodological Work — Zhumagaliyeva A. S.

Director - Mining and Metallurgical Institute named after O.A. Baikonurov — Rysbekov K. .

Department Chair - Mining — Moldabayev S. .

Representative of the Academic Committee from Employers — Bauyrzhan O.

____Acknowledged_____