MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
KAZAKH NATIONAL RESEARCH TECHNICAL UNIVERSITY after K.I.SATPAYEV

SATBAYEV UNIVERSITY

APPROVE
Chairman of the Management Board-
Rector of Kaznitu named after K.Satpayev
M.M.Begentaev
«__» 06 2024 r.

MODULAR EDUCATIONAL PROGRAM for recruitment to 2020-2021 academic year
Educational program 6B07205 - "Mining engineering"
Group of educational programs B071 - "Mining and extraction of minerals"
Form of study: full-time **Duration of study: 4 years** **Academic degree: Bachelor of Engineering and Technology**

Year of study	Discipline code	Name of disciplines	semester	Cycle	Credits	Total hours	classroom volume of lek/lab/pr	SRS (including SRSP) in hours	Form of control	Competencies
Language Training module										
Required component										
1	LNG1051	Beginner (A1)	1	G	4	120	0/0/3	75	E	Diagnostician. test
	LNG1052	Elementary English (A1)								
	LNG1053	General English 1 (A2)								
	LNG1054	General English 2 (A2)								
	LNG1055	Academic English (B1)								
	LNG1056	Business English (B2)								
1	LNG1012	Kazakh (Russian) language (A2)	1	G	4	120	0/0/3	75	E	Diagnostician.test
	LNG1012.1	Academic Kazakh (Russian) language (B1)								
	LNG1012.2	Business Kazakh (Russian) language (B2)								
1	LNG1052	Elementary English (A1)	2	G	4	120	0/0/3	75	E	LNG1051
	LNG1053	General English 1 (A2)								LNG1052
	LNG1054	General English 2 (A2)								LNG1053
	LNG1055	Academic English (B1)								LNG1054
	LNG1056	Business English (B2)								LNG1055
	LNG1057	Professional English (B2+)								LNG1056
1	LNG1012.1	Academic Kazakh (Russian) language (B 1)	2	G	4	120	0/0/3	75	E	LNG1012.1
	LNG1012.1	Business Kazakh (Advanced Russian) Language (B2)								LNG1012.1
	LNG103	Culture of business communication (C1)								LNG1012.2
	LNG102	Rhetoric								LNG1012.2
Module of social disciplines										
Required component										
1	AAP106	Physical Culture I	1	G	4	60	0/0/2	30	E	no
1	AAP118	Physical Culture II	2	G	4	60	0/0/2	30	E	no
1	HUM100	Modern History of Kazakhstan (state exam)	2	G	5	150	1/0/2	105	E	no
2	HUM132	Philosophy	3	G	5	150	1/0/2	105	E	no
3	MIN487	Prospective and current planning of open cast mining operations	5	G	3	90	1/0/1	60	E	no
3	CHE452	Ecology and sustainable development	6	G	2	60	1/0/0	45	E	no
3	CHE451	Life safety	6	G	2	60	1/0/0	45	E	no
	Socio-political knowledge module									
Required component										
2	HUM126	Social-political knowledge	4	G	8	240	4/0/0	180	E	no
	Module of physical and mathematical training, computer science and chemistry									
University component										
1	MAT001	Mathematics	1	B	5	150	0/0/3	105	E	Diagnostician.test
1	MAT101	Mathematics I	1	B	5	150	1/0/2	105	E	
1	PHY110	Intrduction to Physics	1	B	5	150	0/1/2	105	E	Diagnostician.test
1	PHY111	Physics I	1	B	5	150	1/1/1	105	E	
1	MAT101	Математика I	2	B	5	150	1/0/2	105	E	MAT001
1	MAT102	Mathematics II	2	B	5	150	1/0/2	105	E	MAT101
1	PHY111	Physics I	2	B	5	150	1/1/1	105	E	PHY110
1	PHY112	Physics II	2	B	5	150	1/1/1	105	E	PHY111
2	MAT102	Mathematics II	3	B	5	150	1/0/2	105	E	MAT101
2	MAT103	Mathematics III	3	B	5	150	1/0/2	105	E	MAT102
2	PHY112	Physics II	3	B	5	150	1/1/1	105	E	PHY111
2	PHY112	Physics III	3	B	5	150	1/1/1	105	E	PHY112
2	CSE677	Information and communication technologies	4	G	5	150	2/1/0	105	E	no
	Module of basic general technical training									
University component										
1	GEN177	Engineering and computer graphics		B	5	150	1/0/2	105	E	no
	Professional activity module									
University component										
1	MAP160	Geodesy	1	B	5	150	1/2/0	105	E	no
1	MIN101	Bases of mining (Introduction to specialty)	2	P	5	150	1/0/2	105	E	no
2	GEO475	Fundamentals of Geology	3	B	5	150	2/0/1	105	E	no
2	MIN442	Shattering process	3	B	5	150	1/1/1	105	E	MIN101
2	MIN109	Integrated information systems in mining	3	B	5	150	1/2/0	105	E	MIN101
2	MIN443	Numerical 3D modeling of geomechanical processes	4	B	5	150	1/2/0	105	E	MIN101

2	MIN447	Physics of rock mass	4	B	5	150	1/2/0	105	E	MIN101
2	MIN448	Construction of mining enterprises	4	B	5	150	1/1/1	105	E	MIN101
3	MIN453	Open-cast mining technology	5	B	5	150	1/0/2	105	E	MIN101
3	MIN458	Technology of underground mining operations	6	B	5	150	1/0/2	105	E	MIN101
3	MET179	Processing and enrichment of minerals	6	P	5	150	2/1/0	105	E	MIN101
4	MIN481	Aerology of consessions	7	P	5	150	2/1/0	105	E	MIN101
		Component of choice								
2	MIN449	Open-pit mining processes	4	B	5	150	1/0/2	105	E	MIN101
2	MIN450	Deposit opening and devolоment when underground mining					2/0/1			MIN101
2	MIN451	Deposit opening and devolopment when uranium undeground borehole					2/0/1			MIN101
2	MIN452	Industrial explosives					1/1/1			MIN101
2	MIN459	Mechanics of underground structures					2/0/1			MIN180
2	MAP530	General course of surveying					1/2/0			MAP160
3	MIN460	Interconnection and planning of open cast mining processes	5	B	5	150	2/0/1	105	E	MIN101
3	MIN454	Underground mining operations processes					2/0/1			MIN101
3	MIN461	Uranium deposits underground mining geotechnology					2/0/1			MIN101
3	MIN462	Underground construction facilities					2/0/1			MIN101
3	MAP529	Mine surveying drawing					0/0/3			MAP160
3	TEC186	Opening mine mining and transport equipment	5	B	5	150	2/0/1	105	E	MIN101
3	PED147	Mining-and-transport equipment of underground mines					2/0/1			MIN101
3	MIN455	Shield tunneling complexes					2/0/1			MIN101
3	MAP520	Surveying - geodetic instruments					1/2/0			MAP160
3	MIN463	Special methods of conductieg open cast mining operations	5	P	5	150	2/0/1	105	E	MIN101
3	MIN464	Design and computer style for mining operations development plans					1/0/2			MIN101
3	MIN465	Mining drawing when uranium deposits underground mining					1/0/2			MIN101
3	MIN456	Technology of construction of tunnels					2/0/1			MIN101
3	MIN457	Ways to support underground structures					2/0/1			MIN101
3	MAP531	Mine surveying work on the surface					1/0/2			MAP160
3	MIN477	Opening of career fields	5	B	5	150	1/0/2	105	E	MIN101
3	MIN478	Subsoil use contract and license					2/0/1			MIN101
3	MIN479	Geotechnological methods of development of solid minerals					2/0/1			MIN101
3	MIN480	Special ways of building underground structures					2/0/1			MIN101
3	MAP532	Mathematical processing of surveying and geodetic measurements					1/0/2			MAP172
3	MIN466	Resource-saving and low-waste technology on ore mines	6	B	5	150	2/0/1	105	E	MIN101
3	MIN467	Mineral deposits underground mining systems					2/0/1			MIN101
3	MIN468	Solutions hydraulics when uranium development					2/0/1			MIN101
3	MIN469	Technology of construction of vertical mine workings					2/0/1			MIN101
3	MAP522	Mine surveying for the construction of mines					1/0/2			MAP160
3	MIN470	Technological complexes of open cast mining operations	6	P	5	150	2/0/1	105	E	MIN101
3	MIN131	Underground mines air supply					2/0/1			MIN101
3	MIN471	Geotechnological wells drilling and operation					2/0/1			MIN101
3	MIN472	Calculation of the design of underground structures					2/0/1			MIN101
3	MAP528	GIS cartography in mining					1/0/2			MAP160
3	MIN473	Open development of building materials	6	P	5	150	1/0/2	105	E	MIN101
3	MIN474	Technology and complex mechanization of underground mining					2/0/1			MIN101
3	MIN475	Equipment of geotechnological fields at uranium dillhole in situ leaching					2/0/1			MIN101
3	MIN476	Design of construction of mining facilities					2/0/1			MIN101
3	MAP521	Mine surveying at open pit mining					1/0/2			MAP160
3	MIN482	Conducting mine workings at quarries	7	P	5	150	1/0/2	105	E	MIN101
3	MIN483	Rock conditions management					2/0/1			MIN101
3	MIN484	Fields development in special conditions					2/0/1			MIN101
3	MIN485	Special drilling and blasting operations					2/0/1			MIN101
3	MIN486	Construction of underground hydraulic structures					2/0/1			MIN101
3	MAP524	Geomechanics					1/0/2			MAP138
4	MIN487	Prospective and current planning of open cast mining operations	7	P	5	150	2/0/1	105	E	MIN407
4	MIN488	Product guality management					2/0/1			MIN101
4	MIN489	Technology and mechanization of piling works					2/0/1			MIN101
4	MIN490	Separate methodes of uranium deposits development					2/0/1			MIN101
4	MIN491	Designing of blasting operations					2/0/1			MIN101
4	MIN492	Designing of construction of underground mining enterprises					2/0/1			MIN101
4	MAP525	Mine survey of underground development systems					1/0/2			MAP160
4	MIN493	Reclamation of disturbed lands on mines	7	P	5	150	2/0/1	105	E	MIN407
4	MIN494	Layout of underground mines plan					2/0/1			MIN101
4	MIN498	Uranium deposits conservation					2/0/1			MIN101
4	MIN495	Technology of construction of horizontal and inclined mine workings					2/0/1			MIN101

4	MAP523	Geometry of subsoil					1/0/2			MAP160
4	MIN496	Design of ore and coal mines					1/0/2			MIN101
4	MIN497	Mines conservation					2/0/1			MIN101
4	MIN501	Layout of underground deposits plan	8	P	5	150	2/0/1	105	E	MIN101
4	MIN499	Reconstruction of mines and underground structures					2/0/1			MIN101
4	MAP527	Mine survey software					1/0/2			MAP160
4	MIN500	Systems of open development of mineral deposits					1/0/2			MIN101
4	MIN441	Sheet deposits underground mining					2/0/1			MIN101
4	MIN432	Underground development of indigenous and alluvial deposits	8	P	5	150	2/0/1	105	E	MIN101
4	MIN433	Technology of construction of urban underground structures					2/0/1			MIN101
4	MAP526	Surveying work during the construction of tunnels					1/0/2			MAP206
	Practice-oriented module									
	Required component									
	AAP101	Educational practice	2	Б	2					
	AAP141	Production practice I	4	Б	4					
	AAP166	Production practice II	6	П	8					
	Module of final certification									
	Required component									
	ECA003	Preparation and writing of a thesis (project)*	8	FC	6					
	ECA103	Defense of the thesis (project)*	8	FC	6					
	Module of additional types of training									
	Component of choice									
	AAP107	Sports club sectional	5-7		0					
	AAP500	Military affairs	3-6		0					

Number of credits for the entire period of study			
Cycles of disciplines	**Credits**		
	mandatory	**elective**	**Total**
Cycle of general education disciplines	54		54
Cycle of basic disciplines	86	25	111
Cycle of profile disciplines	23	40	63
Total for theoretical training:	***163***	***65***	***228***
Final certification	12	0	12
total:	**175**	**65**	**240**

The decision of the Academic Council of Kazntu named after K.Satpayev. Protocol № 3 **"** 25 **"** 06 **20** 21 **г.**

Decision of the Academic Council of the Institute _____**. Protocol №** 5 **"** 24 **"** 12 **20** 21 **г.**

Vice-Rector for Academic Affairs **B.A. Zhautikov**

Director of the Institute **K.B.Rysbekov**

Head of the Department **S.K.Moldabaev**

Representative of the Specialty Council from employers **N.S.Buktukov**