



WORKING CURRICULUM
of the educational program for 2019-2020 academic year admission
Educational program 6B07202 - "Geology and exploration of mineral deposits"
Group of Educational programs B071 - "Mining"

Full-time study Study duration : 4 years

Academic degree: bachelor of engineering and technology

Year of study	Code	Name of discipline	Cycle	Total amount of credits	Total hours	lec/lab/pr/	SWT (including SWT) in hours	pre-requisites	
1st semester (autumn 2019)									
1	LNG 1051	Beginner (A1)	G	5	150	0/0/3	105	Diagnostic test	
	LNG 1052	Elementary English (A1)							
	LNG 1053	General English 1 (A2)							
	LNG 1054	General English 2 (A2)							
	LNG 1055	Academic English (B1)							
	LNG1056	Business English (B2)							
	LNG104.1-2	General Kazakh (Russian) (A1)	G	4	120	0/0/2	90	Diagnostic test	
	LNG101.11-21	Basic Kazakh (Russian) language (A2)							
	LNG101.11-21	Academic Kazakh (Russian) language (B1)							
	LNG101.13-23	Business Kazakh (Russian) language (B2)	B	5	150	1/0/2	105	Diagnostic test	
MAT100	Algebra and introduction to mathematical analysis								
MAT101	Mathematics I	B	5	150	1/1/1	105	Diagnostic test		
PHY400	Introduction to physics								
PHY111	Physics I								
GEO473	General geology (introduction to specialty)	B	5	150	2/1/0	105	no		
CHE495	Chemistry	B	5	150	1/1/1	105	no		
KFK101	Physical education I	G	2	60	0/0/2	30			
Total:				31					
3rd semester (autumn 2020)									
2	LNG 1053	General English 1 (A2)	G	5	150	0/0/3	105	LNG 1052 LNG 1053 LNG 1054	
	LNG 1054	General English 2 (A2)							
	LNG 1055	Academic English (B1)							
	LNG1056	Business English (B2)							
	LNG 1057	Professional English (B2+)							
	MAT102	Mathematics II	B	5	150	1/0/2	105	MAT101 MAT102	
	MAT103	Mathematics III							
	HUM132	Philosophy							
	PHY112	Physics II	B	5	150	1/1/1	105	PHY111	
	GPH183	Fundamental Physics of Earth	B	5	150	2/1/0	105	GEO473	
GEO433	Crystallography and mineralogy	B	5	150	2/1/0	105	GEO473		
GEO477	Paleontology and historical geology	B	5	150	2/1/0	105	GEO473		
KFK103	Physical education III	G	2	60	0/0/2	30			
Total:				30					
5th semester (autumn 2021)									
3	HUM126	Social-political knowledge	G	8	240	4/0/0	180	no	
	GEO478	Hydrogeology	B	5	150	2/1/0	105	GEO473	
	GEO436	Geoinformation technologies in geology	B	5	150	2/1/0	105	no	
	GEO439	Sedimentology	B	5	150	2/1/0	105	GEO473	
	GEO438	Geology of mineral deposits	S	5	150	2/1/0	105	GEO473	
	3218	Electives	B	5	150	2/1/0	105		
	3219	Electives	B	5	150	2/1/0	105		
	Total:				38				
	7th trimester (autumn 2022)								
	4	4309	Electives	S	5	150	2/1/0	105	
4310		Electives	S	5	150	2/1/0	105		
4311		Electives	S	5	150	2/1/0	105		
4312		Electives	S	5	150	2/1/0	105		
4313		Electives	S	5	150	2/1/0	105		
4314		Electives	S	5	150	2/1/0	105		
Total:				30					

Code	Name of discipline	Cycle	Total amount of credits	Total hours	lec/lab/pr/	SWT (including SWT) in hours	pre-requisites
2nd semester (spring 2020)							
LNG 1052	Elementary English (A1)	G	5	150	0/0/3	105	LNG 1051 LNG 1052 LNG 1053 LNG 1054 LNG 1055 LNG 1056 LNG 1057
LNG 1053	General English 1 (A2)						
LNG 1054	General English 2 (A2)						
LNG 1055	Academic English (B1)						
LNG1056	Business English (B2)						
LNG1057	Professional English (B2+)						
LNG101.11-21	Basic Kazakh (Russian) language (A2)	G	4	120	0/0/2	90	LNG104.1-2 LNG101.11-21 LNG101.13-23
LNG101.11-21	Academic Kazakh (Russian) language (B1)						
LNG101.13-23	Business Kazakh (Russian) language (B2)						
LNG102.1-2, LNG103.1-2	Electives (C1)	B	5	150	1/0/2	105	MAT100 MAT101
MAT101	Mathematics I						
MAT102	Mathematics II	B	5	150	1/1/1	105	PHY110 PHY111
PHY111	Physics I						
PHY112	Physics II						
HUM100	Contemporary history of Kazakhstan	G	5	150	1/0/2	105	no
GEO432	Structural geology	B	5	150	2/1/0	105	GEO473
KFK102	Physical education II	G	2	60	0/0/2	30	
Total:				31			
4th semester (spring 2021)							
LNG 1054	General English 2 (A2)	G	5	150	0/0/3	105	LNG 1053 LNG 1054 LNG 1055 LNG 1056 LNG 1057
LNG 1055	Academic English (B1)						
LNG1056	Business English (B2)						
LNG 1057	Professional English (B2+)						
2108	Electives (B2+)						
MAT102	Mathematics III	B	5	150	1/0/2	105	MAT102 MAT103
MAT105	Ordinary differential equations MatLab						
CSE677	Information and communication technology						
GEO434	Petrography	B	5	150	2/1/0	105	GEO433
GEO435	Geology and Mineral Resources of Kazakhstan	B	5	150	2/1/0	105	GEO473
PET406	Drilling of the wells	B	5	150	2/1/0	105	no
KFK104	Physical education IV	G	2	60	0/0/2	30	
Total:				30			
6th semester (spring 2022)							
GEO443	Fundamentals of subsoil	S	5	150	2/0/1	105	GEO473
GEO476	Prospecting and exploration of mineral deposits	S	5	150	2/1/0	105	GEO432
GEO445	Oil and Gas Geology	S	5	150	2/0/1	105	GEO473
GEO479	Engineering geology	S	5	150	2/1/0	105	GEO473
GEO411	Geophysical methods of prospecting and exploration	B	5	150	2/1/0	105	GEO473
3307	Electives	S	5	150	2/1/0	105	
3308	Electives	S	5	150	2/1/0	105	
Total:				35			
8th trimester (spring 2023)							
ECA003	Preparation and writing of graduation work (project)	FA	6				
ECA103	The defence of graduation work (project)	FA	6				
Total:				12			

Year of study	Code	Name of discipline	Credits	Semester
Other academic education				
Obligatory education with P/NP assessment (Professional practice)				
1	AAP107	Educational field geological internship (B)	2	2
2	AAP143	Industrial internship I (S)	2	4
3	AAP163	Industrial internship II (S)	4	6
Other education				
1		Sports club sectional	0	5-7
2-3	AAP500	Military training	0	3-6

Cycle of disciplines	Credits		
	compul-sary	elective	total
Cycle of general disciplines (G)	59		59
Cycle of basic disciplines (B)	92	10	102
Cycle of special disciplines (S)	36	40	76
Total of theoretical study:			187
Final attestation (FA)	12		12
OVERALL:			199
			50
			249

Decision of the Academic Council of KazNRTU after K.Satbayev. Minutes # 3, dated "25" 06 2021

Decision of the Academic Council of the GPEI named after K. Turysov. Minutes # 5, dated "24" 12 2020

Vice-rector for academic affairs

Director of Geology, petroleum and mining engineering institute

Head of the department "Geological mapping, prospecting and exploration of mineral deposits"

Representative of Specialty council

B. Zhautikov

A. Syzdykov

A.A. Bekbotayeva

A. Zhunusov

APPROVED

Director of Geology, petroleum and mining engineering institute



MAJOR ELECTIVE DISCIPLINES educational program for the 2019-2020 academic year admission
Educational program 6B07202 - "Geology and exploration of mineral deposits"
Group of Educational programs B071 - "Mining"

Full-time study Study duration : 4 years Academic degree: bachelor of engineering and technology

Year of study	Code of elective	Code of discipline	Name of discipline	Cycle	Credits	Total hours	lec/lab/pr	SIW (including SIWT) in hours	Prerequisites	
5th semester (autumn 2021)										
3	3218	GEO 440	Geological mapping	B	5	150	2/0/1	105	GEO 432	
		GEO 459	Geochemistry of organic matter and hydrocarbons of oil and gas basins				2/0/1		GEO 473	
		GEO 463	Ecological hydrogeology				2/1/0		GEO 473	
	3219	GEO 441	Crystaloptics	B	5	150	1/2/0	105	GEO 434	
		GEO 442	Lithology, diagenesis and biofacies of oil and gas complexes				2/0/1		GEO 434	
		GEO 464	Watersupply and irrigation				2/1/0		GEO 434	
	Total:					10				
	6th semester (spring 2022)									
	3	3307	GEO 444	Geological and industrial types of mineral deposits	S	5	150	2/0/1	105	GEO 438
			GEO 446	Geodynamics of lithospheric plates				2/0/1		GEO 432
			GEO 465	Hydrogeodynamics				2/1/0		GEO 473
		4308	GEO 451	Computer technologies in geology	S	5	150	1/2/0	105	GEO 473
GEO 447			Oil and gas provinces of the world	2/0/1				GEO 445		
GEO 466			Hydrogeological study	2/1/0				GEO 478		
Total:					10					
7th trimester (autumn 2022)										
4	4309	GEO 457	Applied geochemical studies	S	5	150	2/0/1	105	GEO 432	
		GEO 453	Geochemical methods of exploration of mineral deposits				2/0/1		GEO 476	
		GEO 456	Theoretical basis for searching and exploration of oil and gas fields				2/0/1		GEO 445	
		GEO 472	Engineering geodynamics				2/1/0		GEO 479	
	4309	GEO 452	Laboratory Methods of studying minerals	S	5	150	1/2/0	105	GEO 434	
		GEO 481	Geodynamics of oil and gas basins				2/0/1		GEO 447	
		GEO 448	Physics of oil reservoir				2/0/1		GEO 447	
		GEO 468	Melliorative hydrogeology				2/1/0		GEO 478	
	4310	GEO 455	Fundamentals of geotectonics	S	5	150	2/0/1	105	GEO 432	
		GEO 450	Geological bases of oil and gas fields' development and exploitation				2/0/1		GEO 445	
		GEO 469	Search and exploration of underground waters				2/1/0		GEO 478	
	4311	GEO 184	Geological assessment of mineral resources and reserves	S	5	150	2/0/1	105	GEO 476	
		GEO 454	Geological and economic evaluation of mineral deposits				2/0/1		GEO 476	
		GEO 449	Oil and gas geology and estimation of reserves				2/0/1		GEO 445	
		GEO 426	Engineering and geological study				2/1/0		GEO 479	
	4312	GEO 458	Mine geology	S	5	150	2/0/1	105	GEO 476	
		GEO 462	Oil and gas areas in Kazakhstan				2/0/1		GEO 445	
		GEO 470	Hydrogeochemistry				2/1/0		GEO 478	
	4314	GEO 461	Geomorphology and anthropogenic geology	S	5	150	2/0/1	105	GEO 473	
		GEO 460	Computer modeling of oil and gas fields				2/0/1		GEO 445	
		GEO 471	Groundwater monitoring and geohazard				2/1/0		GEO 478	
Total:									30	

Credits numbers of elective disciplines over the entire period of study	
Cycle of disciplines	Credits
Cycle of basic disciplines (B)	10
Cycle of special disciplines (S)	40
Overall:	50

Decision of the Academic Council of the GPEI named after K. Turysov. Minutes # 5, dated " 24 " 12 20 20

Head of the department "Geological mapping, prospecting and exploration of mineral deposits"

A.A. Bekbotayeva

Representative of Specialty council

A. Zhunusov