



**WORKING CURRICULUM**  
of the educational program for 2019-2020 academic year admission  
**Educational program 6B05201 - "Geology and exploration of mineral deposits"**  
Group of Educational programs B052 - "Earth Science"

Full-time study Study duration : 4 years Academic degree: bachelor of natural sciences

Year of study	Code	Name of discipline	Cycle	Total amount of credits	Total hours	lec/lab/pr	SWT (including SWT) in hours	pre-requisites							
<b>1st semester (autumn 2019)</b>															
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)	G	4	120	0/0/2	90	Diagnostic test							
	LNG104.1-2	General Kazakh (Russian) (A1)													
	LNG101.11-21	Basic Kazakh (Russian) language (A2)													
	LNG101.11-21	Academic Kazakh (Russian) language (B1)													
	LNG101.13-23	Business Kazakh (Russian) language (B2)													
MAT100	Algebra and introduction to mathematical analysis	B	5	150	1/0/2	105	Diagnostic test								
MAT101	Mathematics I														
PHY400	Introduction to physics														
PHY111	Physics I														
GEO473	General geology (Introduction to specialty)														
CHE495	Chemistry	B	5	150	1/1/1	105	no								
KFK101	Physical education I														
				<b>Total:</b>	<b>31</b>										
<b>2nd semester (spring 2020)</b>															
1	LNG 1052	Elementary English (A1)	G	5	150	0/0/3	105	Diagnostic test							
	LNG 1053	General English 1 (A2)													
	LNG 1054	General English 2 (A2)													
	LNG 1055	Academic English (B1)													
	LNG1056	Business English (B2)													
	LNG 1057	Professional English (B2+)	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)													
	LNG102.1-2, LNG103.1-2	Electives (C1)													
MAT101	Mathematics I	B	5	150	1/0/2	105	Diagnostic test								
MAT102	Mathematics II														
PHY111	Physics I														
PHY112	Physics II														
HUM100	Contemporary history of Kazakhstan														
GEO432	Structural geology	B	5	150	2/1/0	105	no								
KFK102	Physical education II														
				<b>Total:</b>	<b>31</b>										
<b>3rd semester (autumn 2020)</b>															
2	LNG 1053	General English 1 (A2)	G	5	150	0/0/3	105	Diagnostic test							
	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	Diagnostic test							
	MAT103	Mathematics III													
	HUM132	Philosophy													
	PHY112	Physics II													
	GPH183	Fundamental Physics of Earth													
GEO433	Crystallography and mineralogy	B	5	150	2/1/0	105	no								
GEO477	Paleontology and historical geology														
KFK103	Physical education III	G	2	60	0/0/2	30	no								
								<b>Total:</b>	<b>30</b>						
<b>4th semester (spring 2021)</b>															
2	LNG 1054	General English 2 (A2)	G	5	150	0/0/3	105	Diagnostic test							
	LNG 1055	Academic English (B1)													
	LNG1056	Business English (B2)													
	LNG 1057	Professional English (B2+)													
	LNG1056	Business English (B2)													
	MAT102	Mathematics III	B	5	150	1/0/2	105	Diagnostic test							
	MAT105	Ordinary differential equations MatLab													
	CSE677	Information and communication technology													
	GEO434	Petrography													
	GEO435	Geology and Mineral Resources of Kazakhstan													
PET406	Drilling of the wells	B	5	150	2/1/0	105	no								
GEO473	Geology and Mineral Resources of Kazakhstan														
KFK104	Physical education IV	G	2	60	0/0/2	30	no								
								<b>Total:</b>	<b>30</b>						
<b>5th semester (autumn 2021)</b>															
3	HUM126	Social-political knowledge	G	8	240	4/0/0	180	no							
	GEO478	Hydrogeology													
	GEO436	Geoinformation technologies in geology													
	GEO439	Sedimentology													
	GEO438	Geology of mineral deposits													
	3218	Electives	B	5	150	2/1/0	105	no							
	3219	Electives													
									<b>Total:</b>	<b>38</b>					
	<b>6th semester (spring 2022)</b>														
	3	GEO443							Fundamentals of subsoil	S	5	150	2/0/1	105	no
GEO476		Prospecting and exploration of mineral deposits													
GEO445		Oil and Gas Geology													
GEO479		Engineering geology													
GEO411		Geophysical methods of prospecting and exploration													
3307		Electives	S	5	150	2/1/0	105	no							
3308		Electives													
									<b>Total:</b>	<b>35</b>					
<b>7th trimester (autumn 2022)</b>															
4		4309							Electives	S	5	150	2/1/0	105	no
	4310	Electives													
	4311	Electives													
	4312	Electives													
	4313	Electives													
	4314	Electives													
				<b>Total:</b>	<b>30</b>										
<b>8th trimester (spring 2023)</b>															
4	ECA003	Preparation and writing of graduation work (project)	FA	6				no							
	ECA103	The defence of graduation work (project)													
				<b>Total:</b>	<b>12</b>										

Other academic education				
Year of study	Code	Name of discipline	Credits	Semester
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

Total number of credits			
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
Final attestation (FA)	12		12
<b>Total of theoretical study:</b>			<b>187</b>
<b>OVERALL:</b>			<b>249</b>

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

B. Zhautikov

Director of Geology, petroleum and mining engineering institute

A. Syzdykov

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

A.A. Bekbotayeva

Representative of Specialty council

A. Zhunusov



APPROVED

Director of Geology, petroleum and mining engineering institute

A. Syzdykov

ИМЕНИ К. ТУРЫСОВЫ

2021

MAJOR ELECTIVE DISCIPLINES educational program for the 2019-2020 academic year admission  
Educational program 6B05201 - "Geology and exploration of mineral deposits"  
Group of Educational programs B052 - "Earth Sciences"

Full-time study Study duration : 4 years Academic degree: bachelor of natural sciences

Year of study	Code of elective	Code of discipline	Name of discipline	Cycle	Credits	Total hours	Iec/lab/pr	SIW (including SIWT) in hours	Prerequisites
<b>5th semester (autumn 2021)</b>									
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	Crystals	B	5	150	1/2/0	105	GEO 454
		GEO 442	Lithology, diagenesis and biofacies of oil and gas complexes				2/0/1		GEO 434
		GEO 464	Water supply and irrigation				2/1/0		GEO 434
Total:					10				
<b>6th semester (spring 2022)</b>									
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				
<b>7th trimester (autumn 2022)</b>									
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
		GEO 452	Laboratory Methods of studying minerals				1/2/0		GEO 434
		GEO 481	Geodynamics of oil and gas basins				2/0/1		GEO 447
	4310	GEO 448	Physics of oil reservoir	S	5	150	2/0/1	105	GEO 447
		GEO 468	Meliorative hydrogeology				2/1/0		GEO 478
		GEO 455	Fundamentals of geotectonics				2/0/1		GEO 432
	4311	GEO 450	Geological bases of oil and gas fields' development and exploitation	S	5	150	2/0/1	105	GEO 445
		GEO 469	Search and exploration of underground waters				2/1/0		GEO 478
		GEO 184	Geological assessment of mineral resources and reserves				2/0/1		GEO 476
		GEO 454	Geological and economic evaluation of mineral deposits				2/0/1		GEO 476
	4312	GEO 449	Oil and gas geology and estimation of reserves	S	5	150	2/0/1	105	GEO 445
		GEO 426	Engineering and geological study				2/1/0		GEO 479
		GEO 458	Mine geology				2/0/1		GEO 476
		GEO 462	Oil and gas areas in Kazakhstan				2/0/1		GEO 445
	4314	GEO 470	Hydrogeochemistry	S	5	150	2/1/0	105	GEO 478
		GEO 461	Geomorphology and anthropogenic geology				2/0/1		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