



WORKING CURRICULUM
of the educational program for 2021-2022 academic year admission
Educational programs 6B07202, 6B05201 - "Geology and exploration of mineral deposits"
Group of Educational programs 8071 - "Mining"
Group of Educational programs 8052 - "Earth Science"

Full-time study

Study duration: 3 years

Academic degree: Bachelor of engineering and technology
Academic degree: bachelor of natural sciences

Year of study	Code	Name of discipline	Cycle	Total amount of credits		lec/lab/pr	S/W (including S/W/T) in hours	Code	pre-requisites
1st semester (autumn 2021)									
1	HUM132	Philosophy	G	5	150	1/0/2	105		no
	CHE451	Life safety	G	2	60	1/0/0	45		no
	PHY111	Physics I	B	5	150	1/1/1	105		no
	GEN177	Engineering and computer graphics	B	5	150	1/0/2	105		no
	GEO433	Crystallography and mineralogy	B	5	150	1/2/0	105		no
	CHE495	Chemistry	B	5	150	1/1/1	105		no
	GEO478	Hydrogeology	B	5	150	2/1/0	105		no
	KFK103	Physical education III	G	2	60	0/0/2	30		
	Total:				34				
3rd semester (autumn 2022)									
2	MNG487	Fundamentals of Entrepreneurship, Leadership and Anti-corruption culture	G	3	90	1/0/1	60		no
	GEO436	Geoinformation technologies in geology	B	5	150	2/1/0	105		no
	GEO439	Sedimentology	B	5	150	2/1/0	105		no
	GEO411	Geophysical methods of prospecting and exploration	B	5	150	2/1/0	105		no
	GEO438	Geology of mineral deposits	S	5	150	2/1/0	105		no
	2214	Electives	B	5					
	2215	Electives	B	5					
	2216	Electives	B	5					
Total:				38					
5th semester (autumn 2023)									
3	3309	Electives	S	5					
	3310	Electives	S	5					
	3311	Electives	S	5					
	3312	Electives	S	5					
	3313	Electives	S	5					
Total:				25					

Year of study	Code	Name of discipline	Cycle	Total amount of credits		lec/lab/pr	S/W (including S/W/T) in hours	Code	pre-requisites	
2nd semester (spring 2022)										
	HUM100	Contemporary history of Kazakhstan	G	5	150	1/0/2	105		no	
	HUM126	Social-political knowledge	G	8	240	4/0/0	180		no	
	MAT102	Mathematics II	B	5	150	1/0/2	105		no	
	GEO434	Petrography	B	5	150	1/2/0	105		no	
	GEO435	Geology and Mineral Resources of Kazakhstan	B	5	150	2/1/0	105		no	
	MAP113	Geodesy with the basics of topography	B	5	150	2/1/0	105		no	
	GEO428	Mathematic methods in geology	B	5	150	2/0/1	105		no	
	KFK104	Physical education IV	G	2	60	0/0/2	30			
	Total:				32					
	4th semester (spring 2023)									
	CHE452	Ecology and sustainable development	G	2	60	1/0/0	45		no	
	GEO476	Prospecting and exploration of mineral deposits	S	5	150	2/1/0	105		no	
	GEO443	Fundamentals of subsoil	S	5	150	2/0/1	105		no	
	GEO477	Paleontology and historical geology	S	5	150	2/1/0	105		no	
	GEO445	Oil and Gas Geology	S	5	150	2/0/1	105		no	
	GEO479	Engineering geology	S	5	150	2/1/0	105		no	
	2307	Electives	S	5						
	2308	Electives	S	5						
Total:				37						
6th semester (spring 2024)										
	ECA003	Preparation and writing of graduation work (project)	FA	6						
	ECA103	The defence of graduation work (project)	FA	6						
	3314	Electives	S	5						
Total:				17						

Year of study	Code	Name of discipline	Credits		Semester
Other academic education					
Obligatory education with P/NP assessment (Professional practice)					
1	AAP143	Industrial internship I (S)	2		2
2	AAP163	Industrial internship II (S)	4		4

Cycle of disciplines	Credits		
	compulsory	elective	total
Cycle of general disciplines (G)	29		29
Cycle of basic disciplines (B)	65	15	80
Cycle of special disciplines (S)	36	40	76
Total of theoretical study:	130	55	185
Final attestation (FA)	12		12
OVERALL:	142	55	197

Decision of the Academic Council of KazNRTU after K.Satbayev. Minutes # 3 dated 25.06 2021

Decision of the Academic Council of the IGP&ME. Minutes # 5 dated 04.12 2020

Vice-rector for academic affairs

B. Zhautikov

Director of Geology, petroleum and mining engineering institute

A. Syzdykov

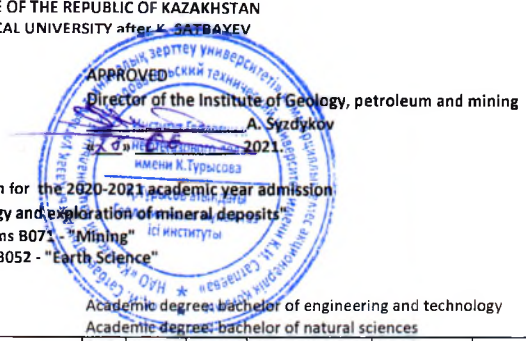
Head of the department "Geological mapping, prospecting and exploration of

A. Bekbotayeva

Representative of Specialty council

A. Zhunusov

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



MAJOR ELECTIVE DISCIPLINES educational program for the 2020-2021 academic year admission
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Year of study	Code of elective	Code of discipline	Name of discipline	Cycle	Credits	lec/lab/pr/siw	Prerequisites	
3th semester (autumn 2022)								
3	2214	GEO 440	Geological mapping	B	5	150	GEO 432	
		GEO 462	Oil and gas areas in Kazakhstan				GEO 473	
		PET 405	Reservoir engineering I: Primary recovery				no	
	2215	GEO 441	Crystaloptics	B	5	150	GEO 434	
		GEO 442	Lithology, diagenesis and biofacies of oil and gas complexes.				GEO 434	
	2216	GPH 181	Theoretical bases and applied aspects of well logging	B	5	150	GEO 473	
		GPH 180	Geophysical exploration (well logging) of uranium deposits				GEO 473	
		GPH 182	Modern geophysical technologies for calculating reserves of uranium deposits				GEO 473	
		MIN 502	Mining				no	
	Total:					15		
	4th semester (spring 2023)							
	3	2307	GEO 444	Geological and industrial types of mineral deposits	S	5	150	GEO 438
GEO 446			Geodynamics of lithospheric plates	GEO 432				
2308		GEO 451	Computer technologies in geology	S	5	150	GEO 473	
		GEO 447	Oil and gas provinces of the world				GEO 445	
Total:					10			
5th semester (autumn 2023)								
3	3309	GEO 457	Applied geochemical studies	S	5	150	GEO 476	
		GEO 453	Geochemical methods of exploration of mineral deposits				GEO 476	
		GEO 456	Theoretical basis for searching and exploration of oil and gas fields				GEO 445	
	3310	GEO 452	Laboratory Methods of studying minerals	S	5	150	GEO 434	
		GEO 481	Geodynamics of oil and gas pools				GEO 473	
		GEO 448	Physics of oil reservoir				GEO 447	
	3311	GEO 455	Fundamentals of geotectonics	S	5	150	GEO 432	
		GEO 450	Geological bases of oil and gas fields' development and exploitation				GEO 445	
	3312	GEO 184	Geological assessment of mineral resources and reserves	S	5	150	GEO 476	
		GEO 454	Geological and economic evaluation of mineral deposits				GEO 476	
		GEO 449	Oil and gas geology and estimation of reserves				GEO 445	
	3313	GEO 458	Mine geology	S	5	150	GEO 476	
		GEO 459	Geochemistry of organic matter and hydrocarbons of oil and gas basins				GEO 445	
	Total:					25		
	6th semester (spring 2024)							
3	3314	GEO 461	Geomorphology and anthropogenic geology	S	5	150	GEO 473	
		GEO 460	Computer modeling of oil and gas fields				GEO 445	
	Total:					5		

Credits numbers of elective disciplines over the entire period of study	
Cycle of disciplines	Credits
Cycle of general disciplines (G)	0
Cycle of basic disciplines (B)	15
Cycle of special disciplines (S)	40
Overall:	55

Decision of the Academic Council of the IGP&ME. Minutes # 5, dated 24.12.2020

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

A. Bekbotayeva

Representative of Specialty council

A. Zhunusov