



Approved by:  
**Director of Geology, Oil and Mining institute**  
**A.H.Syzdykov**  
2021 .

MAJOR ELECTIVE DISCIPLINES for 2021-2022 academic year admission  
Educational program 6B07205 - "Mining engineering"

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 times	lecture Laboratory practice	SIS (including STIS), in hours	Prerequisites
<b>4 semester</b>									
	2214	MIN449	Open-pit mining processes	B	5	150	1/0/2	105	MIN101
		MIN450	Deposit opening and devolpment when underground mining				2/0/1		MIN101
		MIN451	Deposit opening and devolpment when uranium underground borehole				2/0/1		MIN101
		MIN452	Industrial explosives				1/1/1		MIN101
		MIN459	Mechanics of underground structures				2/0/1		MIN180
		MAP530	General course of surveying				1/0/2		MAP519
<b>In total:</b>					<b>5</b>		<b>6</b>		
<b>5 semester</b>									
	3217	MIN460	Interconnection and planning of open cast mining processes	B	5	150	2/0/1	105	MIN101
		MIN454	Underground mining operations processes				2/0/1		MIN101
		MIN461	Uranium deposits underground mining geotechnology				2/0/1		MIN101
		MIN462	Underground construction facilities				2/0/1		MIN101
		MAP529	Mine surveying drawing				0/0/3/2		MAP519
	3218	TEC186	Opencast mine mining and transport equipment	B	5	150	2/0/1	105	MIN101
		PED147	Mining-and-transport equipment of underground mines				2/0/1		MIN101
		MIN455	Shield tunneling complexes				2/0/1		
	MAP531	Surveying support of mining operations during the construction of mining enterprises		1/0/2	MAP519				
	3303	MIN463	Special methods of conductieg open cast mining operations	P	5	150	2/0/1	105	MIN101
MIN464		Design and computer style for mining operations development plans	1/0/2				MIN101		
MIN465		Mining drawing when uranium deposits underground mining	1/0/2				MIN101		
MIN456		Technology of construction of tunnels	2/0/1				MIN101		
MIN457		Ways to support underground structures	2/0/1				MIN101		
MAP520		Surveying-geodesy instruments	1/0/2				MAP519		
<b>In total:</b>					<b>15</b>		<b>12</b>		
<b>6 semester</b>									
3	3221	MIN466	Resource-saving and low-waste technology on ore mines	B	5	150	2/0/1	105	MIN101
		MIN467	Mineral deposits underground mining systems				2/0/1		MIN101
		MIN468	Solutions hydraulics when uranium development				2/0/1		MIN101
		MIN469	Technology of construction of vertical mine workings				2/0/1		MIN101
		MAP532	Mathematical processing of surveying and geodetic measurements				1/0/2		MAP519
	3304	MIN470	Technological complexes of open cast mining operations	P	5	150	2/0/1	105	MIN101
		MIN131	Underground mines air supply				2/0/1		MIN101
		MIN471	Geotechnological wells drilling and operation				2/0/1		MIN101
		MIN472	Calculation of the design of underground structures				2/0/1		MIN101
	MAP528	GIS cartography in mining		1/0/2	MAP519				
	3305	MIN473	Open development of building materials	P	5	150	1/0/2	105	MIN101
		MIN474	Technology and complex mechanization of underground mining				2/0/1		MIN101
MIN475		Equipment of geotechnological fields at uranium dillhole in situ leaching	2/0/1				MIN101		
MIN476		Design of construction of mining facilities	2/0/1				MIN101		
MAP521		Mine surveying at open pit mining	1/0/2				MAP519		
3222	MIN477	Opening of career fields	B	5	150	1/0/2	105	MIN101	
	MIN478	Subsoil use contract and license				2/0/1		MIN101	
	MIN479	Geotechnological methods of development of solid minerals				2/0/1		MIN101	
	MIN480	Special ways of building underground structures				2/0/1		MIN101	
	MAP522	Mine surveying for the construction of mines				1/0/2		MAP519	
<b>In total:</b>					<b>20</b>		<b>9</b>		
<b>7 semester</b>									
4	4307	MIN482	Conducting mine workings at quarries	P	5	150	1/0/2	105	MIN101
		MIN483	Rock conditions management				2/0/1		MIN101
		MIN484	Fields development in special conditions				2/0/1		MIN101
		MIN485	Special drilling and blasting operations				2/0/1		MIN101
		MIN486	Construction of underground hydraulic structures				2/0/1		MIN101
	MAP524	Geomechanics		1/0/2	MAP519				
	4308	MIN487	Prospective and current planning of open cast mining operations	P	5	150	2/0/1	105	MIN101
		MIN488	Product quality management				2/0/1		MIN101
		MIN489	Technology and mechanization of piling works				2/0/1		MIN101
		MIN490	Separate methodes of uranium deposits development				2/0/1		MIN101
		MIN491	Designing of blasting operations				2/0/1		MIN101
		MIN492	Designing of construction of underground mining enterprises				2/0/1		MIN101
	MAP525	Mine Survey of underground development systems		1/0/2	MAP519				
	4309	MIN493	Reclamation of disturbed lands on mines	P	5	150	2/0/1	105	MIN101
		MIN 494	Layout of underground mines plan				2/0/1		MIN101
MIN501		Layout of underground deposits plan	2/0/1				MIN101		
MIN495		Technology of construction of horizontal and inclined mine workings	2/0/1				MIN101		
MAP523	Geometry of subsoil		1/0/2	MAP519					
<b>In total:</b>					<b>15</b>		<b>9</b>		
<b>8 semester</b>									
5	4310	MIN496	Design of ore and coal mines	P	5	150	1/0/2	105	MIN101
		MIN497	Mines conservation				2/0/1		MIN101
		MIN498	Uranium deposits conservation				2/0/1		MIN101
		MIN499	Реконструкция шахт и подземных сооружений				2/0/1		MIN101
		MAP527	Mine survey software						1/0/2
	4311	MIN500	Systems of open development of mineral deposits	P	5	150	1/0/2	105	MIN101
		MIN441	Sheet deposits underground mining				2/0/1		MIN101
		MIN432	Underground development of indigenous and alluvial deposits				2/0/1		MIN101
		MIN433	Technology of construction of urban underground structures				2/0/1		MIN101
		MAP526	Mine surveying of the construction of tunnels						1/0/2
<b>In total:</b>					<b>10</b>		<b>6</b>		

Credits numbers of elective disciplines over the entire period of study	
Cycles of disciplines	Credits
Cycle of general disciplines (G)	0
Cycle of basic disciplines (B)	25
Cycle of special disciplines (S)	40
Total:	65

Decision of the Academic Council of the School of Industrial Engineering. Minutes № 5, dated "23" 12 2020.

Head of the Department "Mining"

Representative of the Specialty Council from employers

S.K.Moldabayev

N.S. Buktukov