

**MODULAR EDUCATIONAL PROGRAM for recruitment to 2021-2022 academic year**  
**Educational program 6B07209- "Transmission networks and infrastructure"**

**Group of educational programs 6B165 - "Transmission networks and infrastructure"**

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
<b>Language Training module</b>										
<b>Required component</b>										
1	LNG108	English language	1	G	5	150	0/0/3	105	E	GC 1,3,5,6,7,8
1	LNG108	English language	2	G	5	150	0/0/3	105	E	GC 1,3,5,6,7,8
1	LNG104	Kazakh (Russian) language	1	G	5	150	0/0/3	105	E	GC 1,3,5,6,7,8
1	LNG104	Kazakh (Russian) language	2	G	5	150	0/0/3	105	E	GC 1,3,5,6,7,8
<b>Module of social disciplines</b>										
<b>Required component</b>										
1	KFK101	Physical Culture I	1	G	2	60	0/0/2	30	E	
1	KFK102	Physical Culture II	2	G	2	60	0/0/2	30	E	
2	KFK103	Physical Culture III	3	G	2	60	0/0/2	30	E	
2	KFK104	Physical Culture IV	4	G	2	60	0/0/2	30	E	
1	HUM100	Modern History of Kazakhstan (state exam)	2	G	5	150	1/0/2	105	E	GC 4,8
2	HUM132	Philosophy	3	G	5	150	1/0/2	105	E	GC 4,8
2	CHE452	Ecology sustainable development	4	G	2	60	1/0/0	45	E	GC 3,4,5,7
2	CHE451	Life safety	3	G	2	60	1/0/0	45	E	GC 3,4,5,7
2	MNG487	Fundamentals of Entrepreneurship, leadership and anti-corruption culture	3	G	3	90	1/0/1	60	E	GC 5,7,8,9
<b>Socio-political knowledge module</b>										
<b>Required component</b>										
1	HUM129	Cultural studies	1	G	2	60	1/0/0	45	E	GC 4,8
2	HUM122	Psychology	3	G	2	60	1/0/0	45	E	GC 4,8
2	HUM127	Sociology	4	G	2	60	1/0/0	45	E	GC 4,8
1	HUM128	Political Science	2	G	2	60	1/0/0	45	E	GC 4,8
<b>Module of physical and mathematical training, computer science and chemistry</b>										
<b>University component</b>										
1	MAT101	Mathematics I	1	B	5	150	1/0/2	105	E	GPC 1,2
1	PHY111	Physics I	1	B	5	150	1/1/1	105	E	GPC 3
1	MAT102	Mathematics II	2	B	5	150	1/0/2	105	E	GPC 1,2
1	PHY464	Electromagnetism. Optics	2	B	5	150	1/1/1	105	E	GPC 3
2	MAT103	Mathematics III	3	B	5	150	1/0/2	105	E	GPC 1,2
1	CHE495	General chemistry	2	B	5	150	1/1/1	105	E	GPC 3
2	CSE677	Information and communication technologies	4	G	5	150	2/1/0	105	E	GPC 1,2
<b>Module of basic general technical training</b>										
<b>University component</b>										
1	GEN177	Engineering and computer graphics	1	B	5	150	1/1/1	105	E	GPC 1,2,4
2	GEN408	Strength of materials	3	B	5	150	1/1/1	105	E	GPC 2,3,4
2	GIG101	Engineering geology	3	B	5	150	2/1/0	105	E	GPC 3, PC 1,2,4
2	PET409	Thermodynamics and heat engineering	4	B	5	150	1/0/2	105	E	GPC 3, PC 1
2	PET410	Fluid mechanics	4	B	5	150	1/1/1	105	E	GPC 3, PC 2,3
2	MAP100	Fundamentals of Engineering Geodesy	4	B	5	150	1/1/1	105	E	GPC 3, PC 1,2,3,8
2	GEO409	Soil Science and Soil Mechanics	4	B	5	150	2/1/0	105	E	GPC 3,4, PC 2,5,6
3	PET401	Diagnostics and testing of oil and gas facilities	5	B	5	150	1/1/1	105	E	GPC 3,4, PC 2,5,7
3	PET402	Engineering calculation approaches in the oil and gas industry	5	B	5	150	1/1/1	105	E	GPC 3,4, PC 2,5,7,8
3	PET178	Computational fluid dynamics for petroleum engineering	6	B	5	150	1/1/1	105	E	GPC 4, PC 2,5,6,7
3	PET403	Fundamentals of budgeting	6	B	5	150	1/1/1	105	E	GPC 3 PC 1,3,4
4	PET404	Management in the design and construction of oil and gas facilities	7	B	5	150	1/1/1	105	E	GPC 3,4, PC 5,6,7
4	PET441	Multidisciplinary petroleum project	8	B	5	150	2/1/0	105	E	GPC 3,4 PC 2,5,7,8
<b>Component of choice</b>										
2	PET443	Fundamentals of rationing and tariff formation	3	B	5	150	1/0/2	105	E	GPC 3, PC 1,2
	PET151	Solving the problems of oil and gas engineering					1/1/1			GPC 3,4 PC 2,5
3	PET444	Environmental and safety management	5	B	5	150	1/0/2	105	E	GPC 3,4 PC 2,5,6
	PET418	Petroleum Engineering seminar					2/1/0			PC 1,2,4,5,8
<b>Professional activity module</b>										
<b>University component</b>										
1	PET103	Introduction to Major	1	S	5	150	1/1/1	105	E	GPC 1,2, PC 1
2	PET428	Design and operation of pump and compressor stations	5	S	5	150	1/0/2	105	E	GPC 4, PC 2,3,4,8
3	PET445	Design of main pipelines	5	S	5	150	1/0/2	105	E	GPC 4, PC 2,3,4



3	PET446	Operation of main pipelines	6	S	5	150	1/0/2	105	E	GPC 4, PC 2,3,4
3	PET448	Design and operation of oil and gas storage facilities	6	S	5	150	1/0/2	105	E	GPC 4, PC 2,3,4
4	PET419	Corrosion protection of oil and gas equipment	7	S	5	150	2/0/1	105	E	GPC 4, PC 2,3,4
4	PET430	Computer - aided design	7	S	5	150	2/0/1	105	E	GPC 4, PC 2,3,4
4	PET111	Economic evaluation of oil and gas projects	7	S	5	150	1/0/2	105	E	GPC 1,3,4 PC 1,2,5,7
<b>Component of choice</b>										
3	PET447	Technical policy	6	S	5	150	2/0/1	105	E	GPC 3, PC 1,4,5
	PET451	Fundamentals of Data Analytics and Programming for Petroleum Engineers					2/0/1			GPC 2,3,4 PC 1,2,3
4	PET449	Risk analysis	7	S	5	150	2/0/1	105	E	GPC 2,3,4 PC 2
	PET417	Petroleum regulations and practices					2/0/1			GPC 2,3 PC 2,3,4,5
4	PET450	Engineering of oil and gas processing complexes	8	S	5	150	2/0/1	105	E	GPC 3, PC 1,2,4,5,8
	PET429	Multiphase flow systems					1/0/2			GPC 2,3, PC 5,6
<b>Practice-oriented module</b>										
<b>Required component</b>										
1	AAP149	Educational practice	2		3					GPC 1-4, PC 1-8
2	AAP141	Production practice I	4		4					GPC 1-4, PC 1-8
3	AAP176	Production practice II	6		5					GPC 1-4, PC 1-8
<b>Module of final certification</b>										
<b>Required component</b>										
	ECA003	Preparation and writing of a thesis (project)*	8	FC	6					GPC 1-4, PC 1-8
	ECA103	Defense of the thesis (project)*	8	FC	6					GPC 1-4, PC 1-8
<b>Module of additional types of training</b>										
<b>Component of choice</b>										
1	AAP107	Sports club sectional	5-7		0					
2-3	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	58		58
	Cycle of basic disciplines	97	15	112
	Cycle of profile disciplines	25	35	60
	<i>Total for theoretical training:</i>	<i>180</i>	<i>50</i>	<i>230</i>
	Final certification	12	0	12
	<b>total:</b>	<b>192</b>	<b>50</b>	<b>242</b>

The decision of the Academic Council of Kazntu named after K.Satpayev. Protocol № 3 " 25 " 06 2021 г.

Decision of the Academic Council of the Institute . Protocol № 5 " 24 " 12 2020г.

Vice-Rector for Academic Affairs

 B.A. Zhautikov

Director of the Institute

 A.H. Syzdykov

Head of the Department "Petroleum engineering"

 G.Zh. Yeligbayeva

Representative of the Specialty Council from employers

 N.A. Nysangaliev