Joint Stock Company «Academy of Logistics and Transport»

I APPROVED
decision of US ALT from
«30» March 2023 (Protocol №13)
President-Rector
_____ Amirgalieva S.N.

EDUCATIONAL PROGRAM

Name: «6B07331 – Cadastre and urban planning»

Level of training: bachelor's degree

Code and classification of areas of training: 6B073 – Architecture and construction

Code and group of educational programs: B075 – Cadastre and land management

Date of registration in the Register: *12.13.2022*

Registration number: *6B07300184*

Almaty, 2023

CONTENT

1 DEVELOPED:

Ph. D, Associate professor ALaT (position)	*(signature)*	*Bondar I.S. (FULL NAME)*
Doctor of Technical Sciences, Professor (position)	*(signature)*	*Makhmetova N.M. (FULL NAME)*
Ph.D., professor ALaT (position)	*(signature)*	*KvashninM.Ya. (FULL NAME)*
V.S.N., Doctor of Technical Sciences, Professor of «KazdorNII» JSC (position)	*(signature)*	*Shalkarov A.A. (FULL NAME)*
2nd year Master's, group MN-ITI-21-1 (position)	*(signature)*	*Konyasbai.A.D. (FULL NAME)*

2 EXPERTS:

Candidate of Technical Sciences, Director of «GEO TRACK» (position)	*(signature)*	*Nusupov D.K. (FULL NAME)*
Candidate of Technical Sciences, Director of «GEO TRACK» (position)	*(signature)*	*Masanov T.K. (FULL NAME)*

3 RECENSEE:

«Kazakh National Research Technical University K.I. Satpayev Kazakh National Research Technical University Professor of «SISM»department Doctor of Technical Sciences (position)	*(signature)*	*Shayakhmetov S.B. (FULL NAME)*

4 REVIEWED AND RECOMME:

Meeting of the AC (Chair of the SI Department) Protocol №, «6» 15.03.2023.	*(Signature of the head of the department)*	*Ismagulova S.O. (FULL NAME).*
Meeting COC-UMB Protocol№, «7» 15.03. 2023.	*(signed by the director of the institute)*	*Chigambaev T.O. (FULL NAME)*
Meeting UMS Protocol№, «4» 29.03.2023.	*(signature of the vice-rector for AD)*	*Zharmagambetova M.S. (FULL NAME)*

5 APPROVED by the decision of the Academic Council of 30 March 2023 № 13

6 INTRODUCED 25.05.2023

2. REGULATORY REFERENCES.

The educational program is developed on the basis of the following regulations and professional standards:

1. Law of the Republic of Kazakhstan «On Education» dated July 27, 2007 № 319-III (as amended and supplemented as of March 27, 2023).
2. National qualifications framework, approved by the protocol of March 16, 2016 by the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations.
3. Industry qualifications framework for the field of «Education», approved by the Minutes of the meeting of the industry commission of the Ministry of Education and Science of the Republic of Kazakhstan on social partnership and regulation of social and labor relations in the field of education and science dated November 27, 2019 № 3.
4. State compulsory standard of higher education (Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated February 20, 2023 № 66).
5. Qualification reference book for positions of managers, specialists and other employees, approved by order of the Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan dated August 12, 2022 №309.
6. Rules for organizing the educational process on credit technology of education in organizations of higher and (or) postgraduate education, approved by Order of the Minister of the Ministry of Education and Science of the Republic of Kazakhstan № 152 dated April 20, 2011 (with additions and changes dated April 4, 2023 № 145).
7. Classifier of areas of training for personnel with higher and postgraduate education, approved by order of the Minister of Education and Science of the Republic of Kazakhstan dated October 13, 2018 № 569 (with amendments and additions as of June 5, 2020).
8. Algorithm for inclusion and exclusion of educational programs in the Register of educational programs of higher and postgraduate education, approved by Order of the Minister of Education and Science of the Republic of Kazakhstan dated December 4, 2018 № 665 (with additions and changes as of December 23, 2020 № 536).
9. RI-ALT-33 «Regulations on the procedure for developing an educational program for higher and postgraduate education.».
10. Atlas of new professions: «Manager of innovations in construction».

3.Educational program passport.

No.	Field name	Note
1	Registration number	*6B07300184*
2	Code and classification of field of education	*6B07 - Engineering, manufacturing and construction industries*
3	Code and classification of areas of training	*6B073 - Architecture and construction*
4	Code and group of educational programs	*B075 - Cadastre and land management*
5	Name of educational program	*6B07331 - Cadastre and urban planning*
6	Type of OP	*New*
7	Purpose of the OP	*Training of competent specialists in the field of land cadastre for the land registry, who have professional skills in accounting for the value of land plots in terms of urban and public property, who have the necessary reliable information about the development of territories, their construction, and other land plots for the implementation of urban planning and investment activities of public authorities , individuals and legal entities.*
8	ISCED level	*6 - Bachelor's degree*
9	Level according to NQF	*6 - Bachelor's degree*
10	ORK level	*6 - Bachelor's degree*
11	Distinctive features of the OP	*No*
	Partner university (SOP)	
	Partner university (DDOP)	
12	Form of study	*Full-time, full-time with the use of DOT*
13	Language of instruction	*Kazakh, Russian*
14	Volume of loans	*241*
15	Academic degree awarded	*Bachelor of Engineering and Technology in the educational program «6B07331 - Cadastre and urban planning»*
16	Availability of an annex to the license for the direction of personnel training	*KZ12LAA00025205 (010)*
17	Availability of EP accreditation	
	Name of accreditation body	
	Validity period of accreditation	

4.Competency model of a graduate.

Objectives of the educational program:

1. Formation of a personality capable of self-improvement and professional growth with versatile social, humanitarian, natural science, special and core knowledge and interests.

2. Formation of the ability to critically rethink the accumulated experience, change, if necessary, the profile of one's professional activity, awareness of the social significance of one's future profession, and having high motivation to perform professional activities.

3. Formation of the ability: to have professional skills in generating state land cadastre information for the land register, maintaining legal and other cadastres, determining the amount of payments for land, accounting for the value of land plots as part of real estate and the value of land as part of natural resources.

4. Formation of the ability to: generalize, analyze and perceive information; setting a goal and choosing ways to achieve it.

5. Promoting the formation of the graduate's readiness to: perform land cadastral work on the assessment of land and other real estate, land management, geodetic, and cadastral work, state control of land use and protection.

6. Formation of graduates' readiness to conduct technical and economic analysis, substantiate decisions made and implemented in the field of land survey and survey; registration and accounting of lands, allotment of land plots and registration of title documents, monitoring of lands of all categories, conducting transactions with land and real estate.

7. Promoting the formation of graduates' readiness for the economical and safe use of natural resources, energy and materials in monitoring, state control of land use and protection; carrying out land assessment work.

Learning outcomes:

LO1- Develop ideological, civic and professional positions based on knowledge of social and humanitarian disciplines, moral values, healthy lifestyle, ability for interpersonal social and professional communication in the state Russian and foreign languages.

LO2- Apply the achievements of modern computer technology, three-dimensional laser scanning, virtual computer modeling to carry out work on projects of urban areas, urban planning and cadastre.

LO3- Use knowledge of physics, mathematics and mechanics when studying professional disciplines and solving applied engineering problems using scientific research methods in the field of professional activity.

LO4-Select methods and methods of environmental safety, analytical thinking on economic, social and humanitarian issues, anti-corruption culture and access to informed management decisions using Power BI.

LO5- Solve typical engineering problems using general principles of engineering geodesy, hydrogeology, geology, soil science, land management of urban areas and scientific research to evaluate real estate.

LO6- Classify real estate objects, engineering structures, building materials when monitoring the land management system, construction and operation of civil and transport structures.

LO7- Assess the factors influencing the price of land and real estate when solving problems in the field of land management, cadastre, landscape and territorial planning, taking into account scientific research methods.

LO8-Analyze the solution of engineering problems, the principles of identifying the main structural elements of the natural frame, vertical layout, territory in the design, reconstruction and renovation of urban areas using scientific research methods.

LO9- Compare technologies for cadastral work in urban areas when organizing technological processes for the improvement of transport communications and engineering

systems, taking into account environmental safety and Power BI.

LO10- Create engineering systems, networks and equipment for water supply, sewerage, heat and gas supply, electricity supply when developing projects for organizing the improvement of urban areas, taking into account computer modeling.

LO11-Formulate logistics planning for land use of the protected zone territory, based on the principles of resource conservation, methods of managing temporary resources and environmental safety, taking into account Power BI.

Area of professional activity: Management and organization of land cadastral and work on the assessment of land and other real estate, land management, geodetic, and cadastral work, state control of land use and protection, survey and survey work; registration and accounting of lands, allotment of land plots and registration of title documents, monitoring of lands of all categories, conducting transactions with land and real estate.

Objects of professional activity:

-SCGC«State Corporation Government for Citizens»;
-Committee for Land Resources Management of the Ministry of Agriculture of the Republic of Kazakhstan;
- UPC«Urban Planning Cadastre» of the Ministry of Investment and Development of the Republic of Kazakhstan;
- State Institution «Department of Architecture, Urban Planning and Land Relations»;
- State Institution «Department for Control and Quality of the Urban Environment»;
-NC «Kazakhstangaryshsapary»;
-Forestry Committee of the Ministry of Agriculture of the Republic of Kazakhstan;
-Water Resources Committee of the Ministry of Agriculture of the Republic of Kazakhstan;
-Appraisal and real estate companies;
-General plan for the development of the city (district);
-Valuation departments in second-tier banks;
-Public Service Centers (PSC), etc.

Types of professional activities:

1. Estimated:

Testing of automated design systems, processing of cadastral and other information, their analysismanagement and organization of the processes of conducting geodetic, land management and cadastral work, state control of the use and protection of land, monitoring and other survey and survey work.

2. Constructive:

Organization and maintenance of geodetic, topographic surveys, adjustments of planning and cartographic material, registration and accounting of land, allocation of land plots and registration of title documents, maintaining state control over the use and protection of agricultural lands and lands of settlements, monitoring lands of all categories, conducting transactions with land and real estate.

3. Information technology:

The use of information technologies, modeling and modern technology in the creation of cadastral maps and the formation of cadastral information systems, the preparation of land balances, land cadastral documents and maps, land reclamation and improvement projects; conducting scientific research and surveys on land cadastre, land monitoring, land assessment.

Functions of professional activity:

Geodetic and topographical surveys of land; photogrammetric work and land mapping using GIS and digital technologies; maintaining the state land cadastre and AIS GZK; monitoring, state control of land use and protection; carrying out land assessment work.

List of specialist positions: Cadastre engineer, surveyor, cartographer, cadastral registration engineer, inspector in enterprises, organizations and institutions of the Land Management Committee system.

Professional certificates received upon completion of training: Surveyor-cartographer, cadastral registration engineer.

Requirements for previous level of education: Secondary education, post-secondary education, technical and vocational education, higher education.

During the training process, students undergo various types of professional practice:

- educational;
- production;
- production (pre-graduation).

Educational practice (geodetic)

The organization of educational practice is aimed at ensuring that bachelors are familiar with the areas of professional activity and training profiles, with the ability to geodetic survey of terrain, forward and backward travel, leveling survey, reference to benchmarks, carrying out points and elevation marks from the map, solving typical engineering and geodetic problems, as well as visiting a branch of the department on the basis of Saulet SKB LLP. Form of control - report protection.

Industrial practice 1.

The main objectives of industrial practice are: consolidation of theoretical knowledge and practical skills in the chosen educational program in a production environment, gaining experience in organizational work, obtaining a working specialty, developing practical skills and competencies in the process of mastering the bachelor's program. Conducted in practice bases at enterprises in accordance with this educational program. Form of control - report protection.

Pre-graduation/industrial practice 2.

The purpose of internship for bachelors is to ensure the relationship between theoretical knowledge acquired through mastering the chosen educational program and practical activities. The objectives of this practice are to consolidate and deepen the theoretical knowledge acquired by students during the learning process, collect information for writing a final qualifying work, study best practices at the enterprise, as well as gain experience in independent research work, mastering a variety of methods of scientific work. Conducted in practice bases at enterprises in accordance with this educational program. Form of control - report protection.

Final examination

The goals of the thesis are to identify the degree to which the bachelor has mastered the content of the educational program, test his readiness for independent activities in the area of the educational program, consolidate and deepen practical work skills. A comprehensive exam is also required.

5.MATRIX FOR CORRELATION OF LEARNING RESULTS IN THE EDUCATIONAL PROGRAM WITH ACADEMIC DISCIPLINES/MODULES.

№	Name of the discipline	Number in the credi-comrade	Matrix for correlating learning outcomes in the educational program with academic disciplines										
			LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9	LO10	LO11
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	History of Kazakhstan	5											
2	Philosophy	5											
3	Foreign language	10	+										
4	Kazakh (Russian) language	10	+										
5	Information and Communication Technologies *(in English)*	5	+	+									
6	Socio-political knowledge module :												
7	Sociology	8					+						
8	Cultural studies						+						
9	Political science						+						
10	Psychology						+						
11	Physical Culture	8					+						
12	Ecology and life safety	5				+							
13	Scientific Research Methods				+								
14	Fundamentals of Economics and Entrepreneurship					+							
15	Fundamentals of law and anti-corruption culture		+			+							
16	Engineering mathematics	9			+								
17	applied Physics	9			+								
18	Basics of computer modeling	6		+									
19	Construction Materials	6						+					
20	Engineering geology and hydrogeology	6					+						
21	Digital mapping	6		+									
22	Monitoring of land and real estate	6						+					
23	Building construction	6						+					
24	Educational practice *(geodetic)*	3								+	+	+	
25	The engineering geodesy	6					+						
26	Basics of geoinformatics			+									
27	Theoretical foundations of land management	6					+						
28	Soil science						+						
29	Construction of 3D terrain models for land management and cadastre purposes	6		+									
30	Three-dimensional laser scanning for land management and cadastre purposes			+									
31	City engineering structures	6						+					
32	Typology of buildings and structures							+					
33	Compositional modeling and animation in architecture and urban planning	6		+									
34	Virtual computer modeling in architecture and urban			+									

	planning												
35	Territorial planning and forecasting	6										+	
36	Engineering landscaping and transport										+		
37	Geodetic work during cadastre maintenance	9							+				
38	Real estate cadastre	9							+				
39	Cadastral assessment of land settlements	6							+				
40	Formation of a natural framework in city master plans	6								+			
41	Urban planning	9								+			
42	Reconstruction and renovation of urban areas	9									+		
43	Industrial practice 1	3		+		+		+			+	+	
44	Industrial practice 2	4		+		+		+			+	+	
45	Engineering systems design	9										+	
46	Planning of utilities and equipment											+	
47	Management of land management and cadastral works	6				+							
48	Management in urban planning					+							
49	Legal support for land management and cadastre	6				+							
50	Legal support for urban planning					+							
51	Managerial Economics	3			+								
52	Transport logistics	3											+
53	Resource saving in transport	3											+
54	Time management	3											+
55	Digital diagnostics of construction sites	3	+										
56	Business analytics Power BI	3				+							
57	final examination	8		+		+		+			+	+	
58	Volunteering	1	+										
59	Financial literacy	3											

6 .STRUCTURE OF THE BACHELOR'S EDUCATIONAL PROGRAM.

No.	Name of discipline cycles	Total labor intensity	
		in academic hours	in academic credits
1	Cycle of general education disciplines (GED)	**1680**	**56**
	Required component	**1530**	**51**
	History of Kazakhstan	150	5
	Philosophy	150	5
	Foreign language	300	10
1)	Kazakh (Russian) language	300	10
	Information and communication technologies	150	5
	Module of socio-political knowledge (sociology, political science, cultural studies, psychology)	240	8
	Physical Culture	240	8
2)	**University component and (or) elective component**	**150**	**5**
2	Cycle of basic and major disciplines (DB, PD)	not less than 5280	no less than 176
1)	**University component and (or) elective component**		
2)	**Professional practice**		
3	Additional types of training (ADE)		
1)	**Component of choice**		
4	final examination	not less than 240	at least 8
	Total	**not less than 7200**	**not less than 240**

7. Working curriculum for the entire period of study.

АО "Академия логистики и транспорта"

УЧЕБНЫЙ ПЛАН

Форма обучения: очная

Срок обучения: 4 года

Направление подготовки:
08073 – *Архитектура и строительство*

Группа образовательных программ:
В075 – *Кадастр и землеустройство*

Наименование образовательной программы:
6B07331 – *Кадастр и недвижимость*

Степень: *бакалавр техники и технологий*

Прием: 2023 год

УТВЕРЖДЕН
Решением Ученого совета АЛТ
от "02" 04 2023 г. Протокол № 12
Председатель Ученого совета
С.Н. Амиралиева

№	Код дисциплины	Наименование циклов и дисциплин	Общая трудоемкость: в академических кредитах	в академических часах	Формы контроля, семестр: Экзамен	КП (КР)	Объем учебной нагрузки, контактные часы: Всего часов	Аудиторные: лекции	практические	лабораторные	СРО: СРОП	СРО	Распределение по семестрам: 1 курс 1 сем. 15 недель	1 курс 2 сем. 15 недель	2 курс 3 сем. 16 недель	2 курс 4 сем. 15 недель	3 курс 5 сем. 15 недель	3 курс 6 сем. 15 недель	4 курс 7 сем. 15 недель	4 курс 8 сем. 7 недель	4 курс 9 сем. 8 недель	Закреплено за кафедрой
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1.		ЦИКЛ ОБЩЕОБРАЗОВАТЕЛЬНЫХ ДИСЦИПЛИН ООД:																				
1.1.	Обязательный компонент:		1530	51	13		1530	120	553	16	120	917	21	16	7	7	0	0	0	0	0	
1.1.1.	23-0-В-ОК-Ка	История Казахстана	150	5	3		150	30	15		15	97			5							СПдиВ, СПдиН, ЯП
1.1.2.	23-0-В-ОК-Ф	Философия	150	5	4		150	30	15		15	90				5						
1.1.3.	23-0-В-ОК-Ин	Иностранный язык	300	10	1,2		300		90		15	195	5	5								ИЯ
1.1.4.	23-0-В-ОК-КиРЯ	Казахский (Русский) язык	300	10	1,2		300		90		15	195	5	5								ЯП
1.1.5.	23-0-В-ОК-ИКТ	Информационно-коммуникационные технологии	150	5	1		150	30		15	0	97	5									ИКТ
1.1.6.		Модуль социально-политических знаний:	240	8	1,2		240															СПдиВ, СПдиН, СПдиВ, СПдиВ
	23-0-В-ОК-Соц	Социология						7	15		0	98		4								
	23-0-В-ОК-Куль	Культурология						8	15		8	98										
	23-0-В-ОК-Пол	Политология						7	15		8	90	4									
	23-0-В-ОК-Пси	Психология						8	15		0	99										
1.1.7.	23-0-В-ОК-ФК	Физическая культура	240	8	1,2; 3,4		240		90		32	120	2	2	2	2						СПдиВ
1.2.	Компонент по выбору:		150	5	1	0	150	30	15	0	0	97	0	0	5	0	0	0	0	0	0	
1.2.1.		Модуль компонент по выбору ООД:	150	5	3		150	30	15		0	97			5							
	23-0-В-КВ-Эко	Экология и безопасность жизнедеятельности																				КПиЭиБЖ
	23-0-В-КВ-МНИ	Методы научных исследований																				СПдиЭ
	23-0-В-КВ-ОСР	Основы экономики и предпринимательства																				ЭиП
	23-0-В-КВ-ОИК	Основы права и антикоррупционной культуры																				ОПиЭП
	ВСЕГО по циклу ООД:		1680	56	14	0	1680	150	373	16	120	1014	21	16	12	7	0	0	0	0	0	
2.		ЦИКЛ БАЗОВЫХ ДИСЦИПЛИН (БД):																				
2.1.	Вузовский компонент:		1680	56	9		1680	270	236	16	64	1018	9	16	12	8	6	6	0	0	0	ОИ
2.1.1.	23-0-В-ИЯ	Иностранный язык	270	9	2		270	45	45		8	172		8								ОИ
2.1.2.	23-0-В-ПЯ	Прикладная физика	270	9	1		270	45	30	16	8	172	9									ИКТ
2.1.3.	23-0-В-ИС-ОКМ	Основы компьютерного моделирования	180	6	2		180	30	30		8	112		6								ОИ
2.1.4.	23-0-В-ИС-СтрМат	Строительные материалы	180	6	0		180	30	15	15	8	112			6							ОИ
2.1.5.	23-31-В-ИС-ИГГ	Инженерная геология и гидрология	180	6	3		180	30	30		8	112			6							ОИ
2.1.6.	23-31-В-ИС-ТЦК	Цифровая картографирование	180	6	4		180	30	15	15	8	112				6						ОИ
2.1.7.	23-31-В-ИС-МЗОК	Мониторинг земель и объектов недвижимости	180	6	5		180	30	30		8	112					6					ОИ
2.1.8.	23-0-В-ИС-СК	Строительные конструкции	180	6	6		180	30	30		8	112						6				ОИ
2.1.9.	23-0-В-ИС-Учпр	Учебная практика (землеустроительная)	60	2	4		60										2					ОИ
2.2.	Компонент по выбору:		1080	36	5		1080	150	105	75	48	672	0	0	6	6	12	0	6	0	0	
2.2.1.	23-0-В-КВ-Инж	Инженерная геодезия	180	6	3		180	30	15	15	8	112			6							ОИ
	23-0-В-КВ-ОИ	Основы геоинформатики																				
2.2.2	23-31-В-КВ-ТОЗ	Теоретические основы землеустройства	180	6	4		180	30	30		8	112				6						ОИ
	23-31-В-КВ-Ру	Почвоведение																				
2.2.3.	23-31-В-КВ-ПЗиСТЗиК	Построение 3D модели местности для целей землеустройства и кадастра	180	6	5		180	30		30	8	112					6					СИ
	23-31-В-КВ-ТлаЛЗТЗиК	Трехмерное лазерное сканирование для целей землеустройства и кадастра																				

2.2.4.	23-31-B-KV-GIS	Городские инженерные сооружения	180	6	5		180	30	30		8	112					6							СИ
	23-29/38/31-B-KV-TZS	Типология зданий и сооружений																							
2.2.5.	23-30/31-B-KV-KMAAGs	Композиционное моделирование и анимация в архитектуре и градостроительстве	180	6	6		180	30		30	8	112						6						СИ
	23-30/31-B-KV-VKMAGs	Виртуальное компьютерное моделирование в архитектуре и градостроительстве																							
2.2.6.	23-31-B-KV-TPP	Территориальное планирование и прогнозирование	180	6	7		180	30	30		8	112							6					СИ
	23-30/31-B-KV-IBTT	Инженерное благоустройство территории и транспорт																							
	ВСЕГО по циклу БД:		2760	92	15	0	2760	450	330	120	112	1688	9	15	18	14	18	12	6	0	0				
3.	ЦИКЛ ПРОФИЛИРУЮЩИХ ДИСЦИПЛИН (ПД):																								
3.1.	Вузовский компонент:		1650	55	8		1650	240	165	75	48	912	0	0	0	9	9	15	9	9	4				
3.1.1.	23-31-B-VK-GRVK	Геодезические работы при ведении кадастра	270	9	4		270	45	45		8	172				9								СИ	
3.1.2.	23-31-B-VK-KN	Кадастр недвижимости	270	9	5		270	45	45		8	172					9							СИ	
3.1.3.	23-31-B-VK-KOZNP	Кадастровая оценка земель населенных пунктов	180	6	6		180	30	30		8	112						6						СИ	
3.1.4.	23-31-B-VK-FPKGPG	Формирование природного каркаса в генеральных планах городов	180	6	6		180	30	15	15	8	112						6						СИ	
3.1.5.	23-31-B-VK-GsP	Градостроительное проектирование	270	9	7		270	45	15	30	8	172							9					СИ	
3.1.6.	23-30/31-B-VK-RRGT	Реконструкция и реновация городских территорий	270	9	8		270	45	15	30	8	172								9				СИ	
3.1.7.	23-0-B-VK-PPr1	Производственная практика 1	90	3	6		90											3						СИ	
3.1.8.	23-0-B-VK-PPr2	Производственная практика 2	120	4	0		120															4		СИ	
			900	30	6	0	900	150	135	15	48	552	0	0	0	0	3	3	18	6	0				
3.2.	Компонент по выбору:																								
3.2.1.	23-31-B-KV-PIS	Проектирование инженерных систем	270	9	7		270	45	45		8	172							9					СИ	
	23-31-B-KV-PISO	Планирование инженерных сетей и оборудования																							
3.2.2.	23-31-B-KV-MZiKR	Менеджмент землеустроительных и кадастровых работ	180	6	7		180	30	30		8	112							6					ЛМТ	
	23-31-B-KV-MGs	Менеджмент в градостроительстве																							
3.2.3.	23-31-B-KV-PZZiK	Правовое обеспечение землеустройства и кадастра	180	6	6		180	30	15	15	8	112								6				СГДиФВ	
	22-31-B-KV-POGs	Правовое обеспечение градостроительства																							
Минорная программа 1 "Управление ресурсами"																									
3.2.4.	23-0-B-UE	Управленческая экономика	90	3	5		90	15	15		8	52					3							ЛМТ	
3.2.5.	23-0-B-TL	Транспортная логистика	90	3	6		90	15	15		8	52						3						ЛМТ	
3.2.6.	23-0-B-RT	Ресурсосбережение на транспорте	90	3	7		90	15	15		8	52							3					ПС	
Минорная программа 2 "Цифровые компетенции"																									
3.2.4.	23-0-B-TM	Тайм-менеджмент	90	3	5		90	15	15		8	52					3							ЛМТ	
3.2.5.	23-0-B-TsDOS	Цифровая диагностика объектов строительства	90	3	6		90	15	15		8	52						3						СИ	
3.2.6.	23-0-B-BAPBI	Бизнес аналитика Power BI	90	3	7		90	15	15		8	52							3					ИКТ	
	ВСЕГО по циклу ПД:		2550	85	14	0	2550	390	300	90	96	1464	0	0	0	9	12	18	27	15	4				
	ИТОГО ПО ТЕОРЕТИЧЕСКОМУ КУРСУ ОБУЧЕНИЯ (ТКО):		6990	233	43	0	6990	990	1005	225	336	4155	30	31	30	30	30	30	33	15	4				
4.	23-0-B-VK-IA	ИТОГОВАЯ АТТЕСТАЦИЯ	240	8																		8	СИ		
	ИТОГО ЗА ВЕСЬ ПЕРИОД ОБУЧЕНИЯ:		7230	241									30	31	30	30	30	30	33	15	12				
5.	ДОПОЛНИТЕЛЬНЫЕ ВИДЫ ОБУЧЕНИЯ (ДВО):																								
5.1.	23-0-B-DVO-V	Волонтёрство	30	1	1		30		10		8	12	1											СИ	
5.2.	23-0-B-DVO-FG	Финансовая грамотность	90	3	3		90	15	15		8	52			3									ЛМТ	

СОГЛАСОВАНО:

Проректор по АД _____ Жармагамбетова М.С.

Директор ДАПК _____ Липская М.А.

РАЗРАБОТАНО:

Директор института "ТИ" _____ Нигамбаев Т.О.

Заведующая кафедрой "СИ" _____ Исмагулова С.О.

8.CATALOG OF DISCIPLINES OF THE UNIVERSITY COMPONENT.

EDUCATIONAL PROGRAM 6B07331 – Cadastre and urban planning

Level of education:bachelor's **degree Duration of study: 4 years** **Year of admission: 2023**

Cycle	Component	Name of the discipline	Total labor intensity		Semester	Learning outcomes	Brief description of the discipline	Prerequisites	Post-requisites
			academic hours	academic credits					
1	2	3	4	5	6	7	8	9	10
DB	VK	Engineering mathematics	270	9	2	LO3	Mastering the mathematical apparatus for solving theoretical and applied problems of a specific profile, gaining an understanding of mathematical modeling and interpretation of the solutions obtained. Issues of linear algebra, analytical geometry, mathematical analysis, differential equations, and series theory are considered. Within the framework of the discipline, calculation and graphic work is performed. Active learning methods - teamwork, brainstorming.	Basic school knowledge in mathematics	Building construction, Construction of 3D terrain models for land management and cadastre purposes, Virtual computer modeling in architecture and urban planning, Three-dimensional laser scanning for land management and cadastre purposes
DB	VK	applied Physics	270	9	1	LO3	Formation in students of skills in the use of fundamental laws, theories of classical and modern physics, as well as methods of physical research, thinking, scientific worldview, with independent cognitive activity, to be able to simulate physical situations using computer technology and ideas about the modern natural science picture of the world . Within the framework of the discipline, calculation and graphic work is performed. Laboratory work is performed on the Coursera platform. Active	Basic school knowledge in mathematics	Building construction, Construction of 3D terrain models for land management and cadastre purposes, Virtual computer modeling in architecture and urban planning , Three-dimensional laser scanning for land management and

							learning methods - teamwork, brainstorming.		cadastre purposes
DB	VK	Basics of computer modeling	180	6	2	LO2	Competencies are formed in the use of modeling tools, hardware and software, as well as in the development of object models for various purposes, as well as programming languages Python, Java, etc. The discipline uses interactive teaching methods, calculation and analytical methods, case study methods, and game methods.	Basic school knowledge in mathematics	Construction of 3D terrain models for land management and cadastre purposes, Virtual computer modeling in architecture and urban planning, Three-dimensional laser scanning for land management and cadastre purposes
DB	VK	Construction Materials	180	6	3	LO6	Forms basic knowledge about the types of building materials, methods of their production, properties and areas of application of various building materials, familiarization with standard methods for testing building materials and determining their properties, standardizing the requirements for building materials depending on the conditions of their use. Within the framework of the discipline, interactive teaching methods are used: case teaching and discussion.	Engineering mathematics applied Physics Basics of computer modeling	Building construction Reconstruction and renovation of urban areas, Typology of buildings and structures, Engineering landscaping and transport, City engineering structures
DB	VK	Engineering geology and hydrogeology	180	6		LO5	Forms theoretical and practical knowledge, skills and abilities that allow one to master the general laws and principles of hydrogeology and engineering geology, the physical and chemical properties of soils and groundwater, necessary for solving practical problems in assessing and analyzing hydrogeological and engineering-geological conditions of transport and civil construction sites structures in order to ensure their reliability and durability. The discipline uses interactive teaching methods.	Engineering mathematics applied Physics Basics of computer modeling	Reconstruction and renovation of urban areas , Urban planning, City engineering structures, Typology of buildings and structures, Geodetic work during cadastre maintenance
DB	VK	Digital mapping	180	6		LO2	Studies the theoretical foundations of the digital form of description of territorial	Fundamentals of computer modeling,	Compositional modeling and

							objects, processes and phenomena, the principles of encoding topographic and thematic cartographic information, structures and formats for presenting digital data, technical means for creating digital maps, methods for converting cartographic information into digital form, technological schemes for creating digital maps, control and editing digital maps, ways to visualize digital information.	Engineering mathematics The engineering geodesy Construction Materials Engineering geology and hydrogeology	animation in architecture and urban planning, Virtual computer modeling in architecture and urban planning, Construction of 3D terrain models for land management and cadastre purposes, Three-dimensional laser scanning for land management and cadastre purposes
DB	VK	Monitoring of land and real estate	180	6		LO6	Forms skills in information interaction of cadastres and land monitoring, solving problems of state cadastres and monitoring of real estate, conducting cadastral and monitoring activities of lands and real estate using information and measuring systems and measuring and computing complexes, automated data collection systems and remote sensing to resolve issues of rational use and protection of lands and real estate.	Engineering mathematics applied Physics Basics of computer modeling The engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management Soil science Geodetic work during cadastre maintenance	Cadastral assessment of land settlements , formation of a natural framework in city master plans , Basics of geoinformatics, City engineering structures
DB	VK	Building construction	180	6	6	LO6	Forms basic knowledge of calculation and design of load-bearing structures using computer technologies (Excel, AutoCAD, Revit). Also teach how to choose the right materials, cross-sectional shape, design	Engineering mathematics applied Physics Basics of computer modeling	Reconstruction and renovation of urban areas, Typology of buildings and structures,

							design diagram, based on the purpose and purpose of operation, and develop design solutions for newly constructed or strengthened transport structures. The discipline uses interactive teaching methods and the computational and graphical method.	The engineering geodesy Construction Materials Engineering geology and hydrogeology	Planning of engineering networks and equipment, Engineering systems design, Urban planning
DB	VK	Educational practice *(geodetic)*	60	2	4	LO8,9, 10	Educational practice (geodetic) The organization of educational practice is aimed at ensuring that bachelors are familiar with the areas of professional activity and training profiles, with the ability to geodetic survey of terrain, forward and backward movement, leveling survey, reference to benchmarks, carrying out points and elevation marks from the map, solving standard engineering - geodetic tasks.	Engineering Mathematics, Applied Physics, Basics of computer modeling, Construction materials, Geology, soil mechanics, bases and foundations The engineering geodesy Construction Materials Engineering geology and hydrogeology	Industrial practice 1, Industrial practice 2. Cadastral assessment of land settlements
PD	VK	Geodetic work during cadastre maintenance	270	9	4	LO7	Forms knowledge and skills in using tools for automated construction of 3D terrain models using the example of the AutoCAD software package, designing transportation routes, the main elements of highways, airfields and airports, bridges and traffic interchanges, teaches how to work in text editors and spreadsheet editors in order to implement rational principles design of civil and transport structures. The discipline provides software training and computer modeling.	Engineering mathematics applied Physics Basics of computer modeling The engineering geodesy Construction Materials Engineering geology and hydrogeology	Real estate cadastre, Cadastral assessment of land settlements, Formation of a natural framework in city master plans Compositional modeling and animation in architecture and urban planning
PD	VK	Real estate cadastre	270	9	5	LO7	Forms knowledge, skills and abilities in the field of cadastral valuation of lands in settlements, the main stages of its	Engineering mathematics applied Physics	Legal support for land management and cadastre, Formation of

							implementation, types and contents of urban planning, land management and cadastral documentation for the implementation of state cadastral registration and (or) state registration of rights to real estate, conducting research and surveys necessary for the development of various types of land management and cadastral documentation.	Basics of computer modeling The engineering geodesy Construction Materials Engineering geology and hydrogeology	a natural framework in master plans of cities, Cadastral assessment of land settlements, Urban planning
PD	VK	Cadastral assessment of land settlements	180	6	6	LO7	Studies the issues of the general concept and basic principles of the formation of a natural framework, which acts as a tool for the implementation of territorial aspects of biosphere-compatible urban planning activities, considers the principles of identifying the main structural elements of the natural framework, as well as indicators of their environmental effectiveness for the purpose of developing planning environmental concepts in cities in their organic relationships with agglomerations and suburbs. The discipline includes on-site classes at a branch of the department and guest lectures by top managers.	The engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management Soil science Geodetic work during cadastre maintenance	Legal support for urban planning, Management of land management and cadastral works, Urban planning, Engineering systems design, Reconstruction and renovation of urban areas
PD	VK	Formation of a natural framework in city master plans	180	9	6	LO8	Studies the issues of the general concept and basic principles of the formation of a natural framework, which acts as a tool for the implementation of territorial aspects of biosphere-compatible urban planning activities, considers the principles of identifying the main structural elements of the natural framework, as well as indicators of their environmental effectiveness for the purpose of developing planning environmental concepts in cities in their organic relationships with agglomerations and suburbs. The discipline includes on-site classes at a branch of the department and guest lectures by top managers.	The engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management Soil science Geodetic work during cadastre maintenance	Reconstruction and renovation of urban areas, Planning of engineering networks and equipment, Urban planning, Legal support for land management and cadastre, Legal support for urban planning

PD	VK	Urban planning	270	9	7	LO8	Studies the theoretical and practical foundations of urban planning for the development of territories of urban and rural settlements, inter-settlement territories, the patterns of formation and placement of material elements on the territory of the settlement, ensuring the standards of life, recreation and work of residents established in society, improving the ecological and aesthetic qualities of the environment in order to adopt management solutions for efficient use of land. The discipline includes on-site classes at a branch of the department and guest lectures by top managers.	The engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management Soil science Geodetic work during cadastre maintenance	Reconstruction and renovation of urban areas , Legal support for land management and cadastre, Legal support for urban planning, Industrial practice 2
PD	VK	Reconstruction and renovation of urban areas	270	9	8	LO9	Studies the issues of reconstruction of the exploited environment, the main provisions of the current system of legislative and regulatory technical literature in the field of reconstruction and renovation, develops skills in design work to improve the architectural and spatial environment of residential areas, the city center and other public service areas, as well as functional territorial zones existing part of the city in order to improve the architectural and spatial environment of residential areas. The discipline uses interactive teaching methods.	Basics of computer modeling The engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management Soil science Geodetic work during cadastre maintenance	Industrial practice 2
PD	VK	Industrial practice 1	90	3	6	LO2,4, 6,9,10	The main objectives of industrial practice are: consolidation of theoretical knowledge and practical skills in the chosen educational program in a production environment, gaining experience in organizational work, obtaining a working specialty, developing practical skills and competencies in the	Basics of computer modeling Engineering geodesy Construction Materials Engineering	FINAL EXAMINATION

							process of mastering the bachelor's program. Conducted in practice bases at enterprises in accordance with this educational program.	geology and hydrogeology Digital mapping Theoretical foundations of land management Soil science Geodetic work during cadastre maintenance	
PD	VK	Industrial practice 2	120	4	9	LO2,4, 6,9,10	The purpose of internship for bachelors is to ensure the relationship between theoretical knowledge acquired through mastering the chosen educational program and practical activities. The objectives of this practice are to consolidate and deepen the theoretical knowledge acquired by students during the learning process, collect information for writing a final qualifying work, study best practices at the enterprise, as well as gain experience in independent research work, mastering a variety of methods of scientific work. Conducted in practice bases at enterprises in accordance with this educational program.	Basics of computer modeling The engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management Soil science Geodetic work during cadastre maintenance	FINAL EXAMINATION
MSW		FINAL EXAMINATION	240	8		LO2,4, 6,9,10	The goals of the thesis are to identify the degree to which the bachelor has mastered the content of the educational program, test his readiness for independent activities in the area of the educational program, consolidate and deepen practical work skills. A comprehensive exam is also required.	TOTAL FOR THE WHOLE PERIOD OF TRAINING	TOTAL FOR THE WHOLE PERIOD OF TRAINING
Minor program 1 "Resource Management"									
DVO	IN	Managerial Economics	150	5	5	LO3	Formation of a conceptual apparatus and development of economic analysis skills using modern models and patterns of economic science, consideration of economic problems and tasks facing the	Engineering Mathematics, Fundamentals of Economics and Entrepreneurship	Final examination

							head of the company. Studying this discipline will allow students to gain and develop knowledge in the field of analytical research into the economic, technological and technical parameters of an enterprise, and will also allow them to master the skills of using special methods for economic justification of management decisions and assessing their consequences. Active learning methods are used - situational tasks, case method.		
DVO	IN	Transport logistics	150	5	6	LO11	Study of the basic provisions of transport support for logistics systems, activities in the field of transportation, covering the entire range of operations and services for the delivery of goods from the manufacturer to the consumer, principles of design and construction of logistics systems. Mastering the skills of optimizing and organizing rational cargo flows, their processing in specialized logistics centers, ensuring an increase in their efficiency, reducing unproductive costs and expenses. Teaching methods are: problem solving, thematic colloquiums, brainstorming seminars. The discipline includes guest lectures by leading specialists from transport and logistics companies.	Engineering mathematics	Final examination
DVO	IN	Resource saving in transport	150	5	7	LO11	Study of the main types and characteristics of energy resources, regulatory support for energy saving, increasing the energy efficiency of the transportation process; energy-saving technologies in repair production and in the operation of transport infrastructure facilities; organization and methods of energy saving management. Problem solving, thematic colloquiums and debates are used. Guest lectures are being held by leading specialists in the transport and communications industry.	Applied physics, Engineering mathematics, Ecology and life safety	Final examination

Minor program 2 "Digital Competencies"									
DVO	IN	Time management	150	5	5	LO11	Formation among students of general ideas about the essence and types of time management, principles and methods of managing temporary resources for more successful implementation of professional activities. Active learning methods are used - situational tasks, case method.	Engineering Mathematics,	Final examination
DVO	IN	Digital diagnostics of transport facilities	150	5	6	LO1	Studies modern methods of diagnostics, monitoring and testing of construction projects using innovative technologies, modern geodetic means of periodic and automatic monitoring (GPS measurements, tacheometry, leveling, laser scanning). Active learning methods are used - situational tasks, case method.	Applied physics, Engineering mathematics, Theoretical mechanics,	Final examination
DVO	IN	Business analytics Power BI	150	5	7	LO4	Developing in students the skills and knowledge to collect, analyze and structure data in order to build interactive dashboards, program at the current level of development of the multidimensional data analysis language MDX, build models and algorithms for projects in current areas of BI technology, be able to analyze the essence of the subject field of the project and make decisions. Active learning methods are used - brainstorming, work in small groups.	Engineering Mathematics,	Final examination

9.CATALOG OF CHOICE COMPONENT DISCIPLINES.

EDUCATIONAL PROGRAM **6B07331 – Cadastre and urban planning**

Level of education: bachelor's **degree Duration of study: 4 years** **Year of admission: 2023**

Cycle	Component	Name of the discipline	Total labor intensity		Semester	Learning outcomes	Brief description of the discipline	Prerequisites	Post-requisites
			academic hours	academic credits					
1	2	3	4	5	6	7	8	9	10
OOD	KV	Ecology and life safety	150	5	3	LO4	Study of basic environmental concepts, environmental problems and approaches to their solution, sources and types of environmental pollution by enterprises, principles of standardization of air and water quality, basic provisions of legislation in various fields, natural and man-made emergencies, their causes, methods of prevention and protection . Teaching methods - analysis of specific situations (case-study).	Engineering mathematics applied Physics Basics of computer modeling	Digital mapping Educational practice (geodetic) Theoretical foundations of land management Geodetic work during cadastre maintenance
		Scientific Research Methods				LO3	Students obtain theoretical and applied knowledge on methods of scientific research of problems in the field of study, train specialists with skills of cognitive activity in the field of science, formulate deep ideas about the content of scientific activity, its methods and forms of knowledge.	Engineering mathematics applied Physics Basics of computer modeling	Theoretical foundations of land management Geodetic work during cadastre maintenance Monitoring of land and real estate Territorial planning and forecasting
		Fundamentals of Economics and Entrepreneurship				LO4	Studies the activities of enterprises in various types of markets, the model of equilibrium and functioning of the market, government regulation of prices and tariffs. Examines the concept of entrepreneurship and the limits of its legal	Engineering mathematics applied Physics Basics of computer	Digital mapping Monitoring of land and real estate Compositional

							regulation, conditions for the development of entrepreneurship, organizational and legal forms of doing business, business planning, business secrets, social responsibility of entrepreneurship. Active learning methods: case methods; business role-playing games, group work.	modeling	modeling and animation in architecture and urban planning
		Fundamentals of law and anti-corruption culture				LO1.4	Increasing the public and individual legal awareness and legal culture of students, as well as the formation of a system of knowledge and civic position to combat corruption as an antisocial phenomenon. As a result of studying the course, the student must master the fundamental concepts of law, the constitutional structure of state power of the Republic of Kazakhstan, the rights and freedoms of citizens enshrined in the Constitution, the mechanism and protection of legitimate human interests in case of their violation.	Engineering mathematics applied Physics Basics of computer modeling	Reconstruction and renovation of urban areas Management of land management and cadastral works Management in urban planning Cadastral assessment of land settlements
DB	KV	The engineering geodesy	18	6	3	LO5	Studies the composition and technology of geodetic works that provide surveys, design, construction, and operation of structures, the basic requirements for solving typical engineering and geodetic problems, and their geometric essence. Gains skills in reading a topographic map, solving on its basis relevant problems of both a graphical and mathematical calculation nature. The discipline uses interactive teaching methods.	Engineering mathematics applied Physics Basics of computer modeling	Geodetic work during cadastre maintenance Three-dimensional laser scanning for land management and cadastre purposes Real estate cadastre Cadastral assessment of land settlements
		Basics of geoinformatics				LO2	Study of general information about geographic information systems, basic terms and concepts, issues of data input and output, their digitization, methods of presenting spatial and attribute information, brief characteristics of the main GIS, their advantages and disadvantages, general ideas about GIS software, basic geoinformation technologies and techniques preparation of initial information, creation and editing of objects. The	Engineering mathematics applied Physics Basics of computer modeling	Three-dimensional laser scanning for land management and cadastre purposes City engineering structures Territorial planning and

							discipline uses interactive teaching methods.		forecasting
DB	KV	Theoretical foundations of land management	180	6	4	LO5	Studies issues related to the land cadastre and technical inventory, substantiates the need for cadastral registration and maintenance of the real estate cadastre as technological stages of work preceding the registration of rights to real estate, a balance between the theoretical foundations of the cadastre, which are general scientific and independent of the current situation for the purpose of practical application in specific conditions current legislation of the Republic of Kazakhstan. The discipline includes on-site classes at a branch of the department and guest lectures by top managers.	Engineering mathematics applied Physics Basics of computer modeling The engineering geodesy Construction Materials Engineering geology and hydrogeology	Construction of 3D terrain models for land management and cadastre purposes Virtual computer modeling in architecture and urban planning Territorial planning and forecasting
		Soil science				LO5	Forms the basis of knowledge about soils, their formation (genesis), structure, composition and physical properties, patterns of geographical distribution, water, thermal and air regimes, as well as the composition of the soil solution and redox processes in them, solid and liquid phases of soils and their accessibility to plants, in order to develop technologies that help maintain soil stability in agrocenosis. The discipline includes on-site classes at a branch of the department and guest lectures by top managers.	Engineering mathematics applied Physics Basics of computer modeling The engineering geodesy Construction Materials Engineering geology and hydrogeology	Formation of a natural framework in city master plans Territorial planning and forecasting Engineering landscaping and transport
DB	KV	Construction of 3D terrain models for land management and cadastre purposes	180	6	5	LO2	Forms knowledge and skills in using tools for automated construction of 3D terrain models using the example of the AutoCAD software package, designing transportation routes, the main elements of highways, airfields and airports, bridges and traffic interchanges, teaches how to work in text editors and spreadsheet editors in order to implement rational principles design of civil and transport structures. The discipline provides software training and computer modeling.	Engineering mathematics applied Physics Basics of computer modeling Digital mapping Theoretical foundations of land management Soil science	Compositional modeling and animation in architecture and urban planning Virtual computer modeling in architecture and urban planning Territorial planning and forecasting

								Geodetic work during cadastre maintenance	Urban planning
		Three-dimensional laser scanning for land management and cadastre purposes				LO2	Forms professional competencies in the field of using a digital three-dimensional terrain model obtained from airborne laser scanning materials, which can significantly increase the reliability of detection and proactive assessment of hazardous geological processes and phenomena reflected in the geometry of the earth's surface already at the initial stages of engineering surveys for the purposes of morphometric analysis, in identifying and assessment of geological processes. The discipline includes computer modeling and practical analysis of the results.	Engineering mathematics applied Physics Basics of computer modeling Digital mapping Theoretical foundations of land management Soil science Geodetic work during cadastre maintenance	Compositional modeling and animation in architecture and urban planning Virtual computer modeling in architecture and urban planning Territorial planning and forecasting Engineering landscaping and transport
DB	KV	City engineering structures	180	6	5	LO2	Studies special issues of methodology for designing modern types of industrial and civil buildings and the conditions for their placement in the structure of populated areas, general requirements for the space-planning structures of objects, taking into account their functional purpose, technological processes occurring in them, as well as modern requirements for the efficiency and environmental friendliness of the production environment , services and living environment.	Engineering mathematics applied Physics Basics of computer modeling The engineering geodesy Construction Materials Engineering geology and hydrogeology	Compositional modeling and animation in architecture and urban planning Virtual computer modeling in architecture and urban planning Engineering landscaping and transport
		Typology of buildings and structures				LO2	Studies the main types of composition, properties and patterns of volumetric-spatial forms, basic theoretical principles for solving compositional problems, characteristic techniques for sketching the search for compositional ideas and subsequent layout, objective laws in the construction of volumetric-spatial forms in architectural design in order to understand the methodology of	Engineering mathematics applied Physics Basics of computer modeling The engineering geodesy	Engineering landscaping and transport Reconstruction and renovation of urban areas Industrial practice 1

							architectural creativity, which forms the basis of the professional design culture of a specialist in the field of architecture. The discipline uses interactive teaching methods.	Construction Materials Engineering geology and hydrogeology	Industrial practice 2
DB	KV	Compositional modeling and animation in architecture and urban planning	180	6	6	LO2	Studies the main types of composition, properties and patterns of volumetric-spatial forms, basic theoretical principles for solving compositional problems, characteristic techniques for sketching the search for compositional ideas and subsequent layout, objective laws in the construction of volumetric-spatial forms in architectural design in order to understand the methodology of architectural creativity, which forms the basis of the professional design culture of a specialist in the field of architecture. The discipline uses interactive teaching methods.	Basics of computer modeling Engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management	Territorial planning and forecasting Urban planning Reconstruction and renovation of urban areas Engineering landscaping and transport
		Virtual computer modeling in architecture and urban planning				LO2	Forms an understanding of the theoretical and methodological foundations of territorial planning and forecasting, forms and types of strategic plans for the development of cities and regions, territorial planning in the system of strategic management of territorial development, its connection with territorial forecasting and programming, principles and methods for developing strategic plans for the development of cities and regions, taking into account foreign experience in regional planning and management.	Engineering mathematics Basics of computer modeling The engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping	Territorial planning and forecasting Engineering landscaping and transport Urban planning Reconstruction and renovation of urban areas
DB	KV	Territorial planning and forecasting	180	6	7	LO10	Studies the purpose and use of city streets and roads, their engineering system and equipment, including the following elements: lighting, landscaping, drainage devices, underground communications for various purposes, transport equipment, structures for transport and pedestrians	Basics of computer modeling The engineering geodesy Construction	Reconstruction and renovation of urban areas Management of land management and cadastral

							(tunnels, overpasses, pedestrian crossings, viaducts, aqueducts, transport interchanges, etc.), bridges and overpasses in order to organize traffic safety. The discipline uses interactive teaching methods	Materials Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management Soil science Geodetic work during cadastre maintenance	works Management in urban planning Industrial practice 2 Legal support for land management and cadastre Legal support for urban planning
		Engineering landscaping and transport				LO9	Studies the purpose and use of city streets and roads, their engineering system and equipment, including the following elements: lighting, landscaping, drainage devices, underground communications for various purposes, transport equipment, structures for transport and pedestrians (tunnels, overpasses, pedestrian crossings, viaducts, aqueducts, transport interchanges, etc.), bridges and overpasses in order to organize traffic safety. The discipline uses interactive teaching methods.	The engineering geodesy Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management Soil science	Reconstruction and renovation of urban areas Industrial practice 2 Legal support for land management and cadastre Legal support for urban planning
PD	KV	Engineering systems design	270	9	7	LO10	Forms skills in the design of engineering systems and hydraulic calculations, theoretical calculations and design of engineering networks, systems and equipment, the principles of operation of water supply equipment, sewerage, heat and gas supply, power supply of settlements and buildings in environmental conditions, selection of optimal engineering systems for the purpose of rational design of a structure, calculation of its structural elements and selection of necessary equipment. The discipline includes on-site classes at a branch of the department and guest lectures by top managers.	Basics of computer modeling The engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management	Reconstruction and renovation of urban areas Industrial practice 2 Legal support for land management and cadastre Legal support for urban planning
		Planning of				LO10	Studies the theoretical and practical foundations of	Basics of	Reconstruction

		utilities and equipment					managing organizations engaged in land management and cadastral activities in conditions of market relations that contribute to increasing the efficiency of their activities, the basic concepts and methods associated with the management of land management and cadastral works, legal and financial aspects and mechanisms for the practical application of basic approaches to management in in the field of land management and cadastral works.	computer modeling The engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping Geodetic work during cadastre maintenance	and renovation of urban areas Industrial practice 2 Legal support for land management and cadastre Legal support for urban planning
PD	KV	Management of land management and cadastral works	180	6	7	LO4	Forms a system of ideas about the principles of organizing design institutes working in the field of urban planning and skills in implementing urban planning policies in modern conditions, the ability to effectively use and develop business competencies in the field of management in modern architectural and urban planning practice, organizing activities for the implementation of urban planning policies and design solutions process in the field of architectural, construction and urban planning.	The engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management Soil science	Reconstruction and renovation of urban areas Legal support for land management and cadastre Legal support for urban planning Industrial practice 2
		Management in urban planning				LO4	Forms knowledge of the principles and norms of land law, as a general legal basis for land management and cadastral work, legislative documents and their place in matters of regulation of land relations, ways and methods of overcoming various and numerous problems using the legal regulatory mechanism for making legal decisions in matters of land and property relations land users and land owners.	The engineering geodesy Construction Materials Engineering geology and hydrogeology Digital mapping Geodetic work during cadastre maintenance	Legal support for land management and cadastre Legal support for urban development Reconstruction and renovation of urban areas Industrial practice 2
PD	KV	Legal support for land management	180	6	8	LO4	Studies the main regulatory documents of urban planning, the procedure for organizing regulatory support for urban planning activities, subjects,	The engineering geodesy Engineering	Industrial practice 2 FINAL

		and cadastre					organization and management of urban planning activities, methods of analysis and processing of questionnaires (questionnaires) and statistical data in order to optimize decisions on urban planning and territorial development, methods writing urban planning regulations to implement the text part of the urban planning plan of the land plot.	geology and hydrogeology Digital mapping Theoretical foundations of land management Soil science Geodetic work during cadastre maintenance	EXAMINATION
		Legal support for urban planning				LO4	Reveals the content of the system of legal regulation of urban development activities in a market economy, helps to instill skills in applying this system in practical activities to manage urban development, including the system and principles of technical regulation and standardization, master methods of analyzing regulatory legal acts, technical regulations and standards in design and construction .	The engineering geodesy Engineering geology and hydrogeology Digital mapping Theoretical foundations of land management	Industrial practice 2 FINAL EXAMINATION

11. Reviewer's conclusion.

Рецензия

на образовательную программу

«6В07331 – Кадастр и градостроительство» по направлению подготовки **«6В073 – Архитектура и строительство»**

Образовательная программа (бакалавриат – 4 года) **«6В07331 – Кадастр и градостроительство»** содержит следующую информацию: квалификация выпускника, форма и срок обучения, направление и характеристика деятельности выпускников, приведен полный перечень компетенций, которыми должен обладать выпускник в результате освоения данной образовательной программы.

Дисциплины учебного плана по реценгируемой образовательной программе формируют весь необходимый перечень общекультурных и профессиональных компетенций, предусмотренных ГОСО по соответствующим видам деятельности.

В учебном плане образовательной программы определен перечень всех учебных дисциплин обязательного компонента и компонента по выбору, трудоемкость каждой учебной дисциплины в кредитах, последовательность их изучения, виды учебных занятий и формы контроля. Каталог элективных дисциплин. Каталог внутривузовского компонента полностью отражают преемственность дисциплин («Виртуальное компьютерное моделирование в архитектуре и градостроительстве», «Инженерное благоустройство территорий и транспорта», «Территориальное планирование и зонирование»).

Соблюдена последовательность изучения дисциплин, включены дисциплины необходимые для производства и технологического процесса.

Содержание рабочих программ учебных дисциплин и практик позволяет сделать вывод, что оно соответствует компетентностной модели выпускника.

Образовательная программа предусматривает профессионально-практическую подготовку бакалавров в виде практики. Содержание программ практик свидетельствует об их способности сформировать практические навыки обучающихся.

Для разработки образовательной программы были привлечены опытный профессорско-преподавательский состав, ведущие представители работодателя, обучающиеся, учтены их требования при формировании дисциплин профессионального цикла.

Заключение:

В целом, реценгируемая образовательная программа отвечает основным требованиям ГОСО, национальной рамке квалификаций, отраслевой рамке квалификаций, профессиональных стандартов. Атласу новых профессий и способствует формированию общекультурных и профессиональных компетенций по направлению подготовки **«6В073 – Архитектура и строительство»**.

Рецензент

«Казахского национального
исследовательского технического
университета имени К.И. Сатпаева»
Профессор кафедры «СиСМ»
доктор технических наук _____ **Шаяхметов С.Б.**

(подпись, дата)

13. Protocols of review and approval

Academy of Logistics and Transport

PROTOCOL№6 (beginning of the formation of the OP)

Meetings
Academic Committee for the Educational Program and Leading Teachers of the Department of Civil Engineering

Almaty «15» 03 2023

Chairman: Ismagulova S.O.
Secretary: Zhadraev R.Zh.

Present : members of the Academic Committee, leading teaching staff of the department
Representatives from the production: V.S.N., Doctor of Technical Sciences, Professor of «KazdorNII» JSC - Shalkarov A.A. Deputy Director of «GEO TRACK» LLP Masanov T.K., Director of «GEO TRACK» LLP Nusupov D.K.
Students:2nd year Master's student, group MN-ITI-21-1 Konysbai A.D.

AGENDA :

5. Consideration of the graduate competency model
6. Consideration of the possibility of including disciplines in QED and RUP

On the first question

SPEAKER:
Head Department Ismagulova S.O. proposed to consider the competency model of a graduate at 3 levels of education: bachelor's, master's, and doctorate.
The graduate competency model includes the following parts:

- The purpose and objectives of the educational program;
- Learning outcomes;
- Area, objects, types and functions of professional activity;
- List of positions in the educational program;
- Professional certificates received upon completion of training;
- Requirements for previous level of education.

SPEAKER: V.S.N., Doctor of Technical Sciences, Professor of «KazdorNII» JSC - Shalkarov A.A., who proposed, due to the specifics of their organization, to reflect the followingin the objects of professional activity: Modern innovative technologies in the transport and communications sector.

SPEAKED:
Member of the department Kvashnin M.Ya., who proposed to approve.
After reviewing the graduate competency model, it was proposed to approve this Model for 3 levels of education.

DECIDED:
- provide a competency model of a graduate at 3 levels of education: bachelor's, master's, doctoral studies for consideration and approval by the Council of the Institute of Transport Engineering.

On the second question

SPEAKER: Head of the department Ismagulova S.O. with a proposal to hear representatives of employers and students on the inclusion of new disciplines in the QED and RUP of admission for 2023.

SPEAKED BY: Director of «GEO TRACK» LLP Nusupov D.K.

Organizations are interested in specialists with a good level of training and knowledge in the field of cadastre for land registry, land management and geodetic work.

We make proposals to include the following popular disciplines in the RUP:Virtual computer modeling in architecture and urban planning, Engineering landscaping and transport, Reconstruction and renovation of urban areas.

SPEAKED BY:2nd year master's student, group MN-ITI-21-1 Konysbay A.D.

We consider it necessary to include the following disciplines in the RUP:Geodetic work during cadastre maintenance, Cadastral assessment of land settlements, Legal support for land management and cadastre.

DECIDED:

5. Please take note of the information;
6. Take into account suggestions and recommendations of employers and students;

Consider including the following disciplines in the RUP: Geodetic work during cadastre maintenance, Cadastral assessment of land settlements, Legal support for land management and cadaster, Virtual computer modeling in architecture and urban planning, Engineering landscaping and transport, Reconstruction and renovation of urban areas.

Chairman: **Ismagulova S.O.**

Secretary: **Zhadraev R.Zh.**

Academy of Logistics and Transport

PROTOCOL №7 (before approval of the OP on the CS)

Meetings of the COC UMB Institute of Transport Engineering

Almaty «15» 03 2023

Chairman: Chigambaev T.O.
Secretary: Utepova A.

Present : members of the UMB KOC, members of the Academic Committee
Representatives from the production: V.S.N., Doctor of Technical Sciences, Professor of «KazdorNII» JSC - Shalkarov A.A. Deputy Director of «GEO TRACK» LLP Masanov T.K., Director of «GEO TRACK» LLP Nusupov D.K.
Students: 2nd year Master's student, group MN-ITI-21-1 Konysbai A.D.

AGENDA:

1. Review of the Catalog of Elective Disciplines (CED), the Work Curriculum (WCU), passports of educational programs for bachelor's, master's and doctoral studies.

SPEAKER: Head. Department Ismagulova S.O. submitted (a) for consideration the QED, RUP of bachelor's, master's and doctoral studies.

At the Department of Civil Engineering, a meeting was held with the participation of representatives of employers and students to discuss the structure and content of the educational program 6B07331 - Cadastre and urban planning.

Representatives of employers and students proposed a number of new relevant disciplines, which the department approved and included in the new QED and RUP.

DECIDED:

7. Please take note of the information;
8. Take into account all suggestions and recommendations of employers and representatives of student activists;
9. Submit KED, RUP and EP of bachelor's, master's and doctoral studies for consideration and approval by the Council of the Institute, the Academy's Board of Directors.

Chairman of the COC UMB: **Chigambaev T.O.**

Secretary: **Utepova A.**

14. APPROVAL SHEET.

№п/п	Ф.И.О.	Место работы и должность	Подпись	Дата
1	Исмагулова С.Д.	зав. каф. „СИ"		30.03.23г
2	Смаилова Ф.И.	зав.кафедр. „ЯП"		30.03.23г.
3	Арипбаев Т.К.	зав.каф ПС		30.03.23г
4	Машимбетова А.Т.	зав каф ОЧ		30.03.23г
5	Шунгисов Б.Т.	зав. каф АТС		30.03.23г.
6	Касымова Д.Т.	зав каф ИК		30.03.23г.
7	Мусаева Р.Д.	зав. каф МСТ		30.03.23г.
8	Сусекова А.Р.	зав. каф. Э		30.03.23г.

15. REGISTRATION SHEET OF CHANGES.

№	Section, paragraph document	Type of change (replace, cancel, add)	Number and date notices	Change made	
				date	Last name and initials, signature, position