

**JOINT STOSC COMPANY«ALT University»
NAMED AFTER MUKHAMEDZHAN TYNYSHBAYEV**



APPROVED
by decision of the ALT US from
"27"032025 (Minutes №8)
Chairman of the Board-Rector
Zharmagambetova M.S.

EDUCATIONAL PROGRAM

**Name: 6B07347 – DIGITAL CONSTRUCTION IN BIM
TECHNOLOGY**

Level of training: bachelor's degree

**Code and classification of areas of study: 6B073-Architecture and
construction**

**Code and group of educational programs: B074-URBAN
PLANNING, CONSTRUCTION WORK AND CIVIL ENGINEERING**

Date of registration in the Register: 25.06.2025

Registration number: 6B07300222

Almaty, 2025

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1. INFORMATION ABOUT CONSIDERATION, APPROVAL AND APPROVAL OF THE PROGRAM, DEVELOPERS, EXPERTS AND REVIEWERS

1 DEVELOPED:

Assistant Professor

(position)

Assistant Professor

(position)

Head of the Monolithic Concrete sector at JSC «KazRICA

(position)

Assistant Professor

(position)

Head of Department «ASI»

Assistant Professor

(position)

(signature)

Murzalina G.B.

(Full name)

(signature)

Jumagfliyev T.K.

(Full name)

(signature)

Kuralov U.S.

(Full name)

(signature)

Jexenbayev Y.K.

(Full name)

(signature)

Kulmanov K.S.

(Full name)

2 EXPERTS:

Director of «RM Company LTD»

LLP

(position)

Director of «PROFIPGS» LLP

(position)

(signature)

Bugybayev R.R.

(Full name)

(signature)

Kakenov Y.N.

(Full name)

3 RECENSEE:

Chief Engineer of «RM Company

LTD»

(position)

(signature)

Ongalbay M.M.

(Full name)

4 REVIEWED AND RECOMME:

Meeting of the AC (Department)

«ASI»

Protocol № 7 «18» 02 2025y.

Meeting of UMB «TS»

Protocol № 8 «17» 03 2025y.

UMS meeting

Protocol №4 «20» 03 2025y.

(signature)

Kulmanov K.S.

(Full name)

(signature)

Abdreshov Sh.A

(Full name)

(signature)

Kodzhabergenova A.K.

(Full name)

5 APPROVED by the decision of the Academic Council of «27» 03 2025y. №8

2. NORMATIVE REFERENCES

The educational program is developed on the basis of the following regulatory legal acts and professional standards:

1. The Law of the Republic of Kazakhstan “On Education” dated July 27, 2007 No. 319-III (as amended and supplemented as of March 27, 2024).
2. The 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. The State Compulsory Standard of Higher and Postgraduate Education (Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No. 2, as amended by the Order of the Acting Minister of Science and Higher Education of the Republic of Kazakhstan dated April 22, 2025 No. 200).
4. The Qualification Directory of Positions of Managers, Specialists, and Other Employees approved by the Order of the Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan dated August 12, 2022 No. 309.
5. The Rules for Organizing the Educational Process Based on Credit Technology in Institutions of Higher and/or Postgraduate Education, approved by Order of the Minister of Education and Science of the Republic of Kazakhstan No. 152 dated April 20, 2011 (with additions and amendments introduced by the Order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated March 26, 2025 No. 134).
6. The Classifier of Areas of Training for Higher and Postgraduate Education, approved by the Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 13, 2018 No. 569 (as amended and supplemented as of June 5, 2020).
7. The Algorithm for Inclusion and Exclusion of Educational Programs in the Register of Educational Programs of Higher and Postgraduate Education, approved by the Order of the Minister of Education and Science of the Republic of Kazakhstan dated December 4, 2018 No. 665 (as amended and supplemented as of December 23, 2020 No. 536).
8. RI-ALT-33 “Regulation on the Procedure for Developing an Educational Program of Higher and Postgraduate Education.

3. PASSPORT OF THE EDUCATIONAL PROGRAM

№	Fieldname	Note
1	Registrationnumber	6B07300222
2	Code and classification of the field of education	6B07 Engineering, Manufacturing and construction industries
3	Code and classification of training areas	6B073Architecture and construction
4	Code and group of the educational program (OP)	B074-Urban planning,construction work and civil engineering
5	Name of the educational program (OP)	6B07347 – Digital construction in BIM technology
6	Type of educational program (OP)	New EP
7	The purpose of the educational program (OP)	The purpose of the program is to train specialists who are proficient in modern digital technologies in construction. The training is aimed at developing the skills of designing, building and operating facilities using BIM technologies to improve quality, optimize costs, effectively manage the life cycle of buildings and introduce innovations into the construction industry.
8	Level according to the International Standard Classification of Education (ISCED)	6
9	National Qualification Framework (NQF) level	6
10	Level according to the Industry Qualification Framework (ORC)	6
11	Distinctive features of the educational program (OP)	No
	Partner university, joint educational program (SOP)	-
	Partner university, double-degree educational program (DDOP)	-
12	Formoftraining	Full-time
13	Languageofinstruction	Kazakh, Russian
14	Volumeofloans	240
15	Academicdegreeawarded	Bachelor of Engineering and Technology in the educational program «6B07347 – Digital construction in BIM technology»
16	Availability of an appendix to the license for the direction of training	KZ87LAA00036465
17	Availability of educational program accreditation (OP)	
	Name of the accreditation body	
	Validityperiodofaccreditation	

4. THE GRADUATE'S COMPETENCE MODEL

Objectives of the educational program:

1. Training in modern technologies: Introducing students to advanced digital tools and techniques, such as управления traffic management systems, intelligent transport systems(ITS), and automation of design and construction processes.
2. Developing Data Analysis skills: Teaching students how to collect, process, and analyze data from sensors and other sources to improve traffic management and safety.
3. Integrating sustainable development: Developing students ' understanding of the importance of sustainable development and ecology in the context of transport infrastructure, including the use of environmentally friendly technologies and materials.
4. Improving safety and efficiency: Training in techniques designed to increase road safety and optimize traffic flows through digital solutions.
5. Prepare for innovation: Encourage creative thinking and innovative approaches to solving transport infrastructure problems, including the use of new technologies such as artificial intelligence and the Internet of Things (IoT).
6. Practical application of knowledge: Providing students with opportunities to apply theoretical knowledge in practice through internships, projects, and industry collaborations.
7. Formation of highly qualified specialists who are able to adapt to the rapidly changing conditions and requirements of modern transport.

Learning outcomes:

LR1- Demonstrate knowledge of engineering mathematics, building physics, and chemistry methods using modern graphics and computer modeling, including artificial intelligence (AI) elements, to analyze data on physical parameters of civil and industrial construction facilities, power supply circuits, short-circuit current calculations, and electrical safety and reliability.

LR2- To establish the level of stability, durability, reliability, and maintainability of construction facilities based on modern theories, motion control of mechanical structures, strength hypotheses, stress and strain calculation methods, and operational load analysis in order to ensure safe and efficient operation of buildings and structures.

LR3 - Classify the mechanical properties of soils, including compression, shear, and deformation, using geoinformation systems to visualize and analyze geological maps and soil data. The calculation of the bearing capacity of foundations, taking into account their interaction with the ground in difficult geological conditions, ensures the reliability and durability of the foundations.

LR4 – To draft a topographic survey of a site using the basics of engineering geodesy, geolocation technologies, the design of infrastructure systems and information and communication technologies (ICT), with the consolidation of these skills during practice for subsequent use in the design of civil and industrial construction facilities.

LR5- Formulate solutions on occupational safety, life safety, digital inclusion (DI) and biodiversity conservation based on the legislation of the Republic of Kazakhstan and international requirements, using resource-saving methods in the diagnosis and control of the technical condition of buildings and structures, thereby ensuring their safe and reliable operation.

LR6 – To introduce knowledge of economic theory to develop economic analysis skills using models and tools of economic science when working with data matrices, structuring interactive dashboards and using business intelligence (BI) technologies, effectively managing time resources.

LR7- Create projects of buildings and structures, taking into account their functional and technical characteristics; fundamentals of computer-aided design (CAD) systems; architecture and functionality of such systems; stages and principles of construction; technological processes; principles of sustainable development.

LR8- Choose machinery and equipment for the construction and repair of buildings and structures in order to ensure the technological reliability of infrastructure systems and protect ecosystems.

LR9 – Implement technologies that minimize the negative impact on the environment, economic calculations, cost planning, and sound economic decisions. Developing skills in using digital tools to improve the quality of life and work, overcoming digital inequality, recognizing corruption risks, anti-corruption measures in everyday life, searching and using specialized sources of information in foreign languages, including scientific articles and databases.

LR10 – Develop projects of reinforced concrete and metal structures for various types of buildings and structures, taking into account their specifics, as well as pay attention to construction technologies and organizations aimed at efficient use of resources and increasing the energy efficiency of facilities in accordance with international standards and requirements of sustainable development.

LR11 – To form teams of like-minded people, based on socio-humanitarian, physical and moral principles, to strengthen interaction between management and the team, develop corporate cooperation and reduce risks during maintenance and repair of civil and industrial facilities, in accordance with the goals of sustainable development and the interests of society and business.

Field of professional activity: Automobile and aviation transport: design, construction, maintenance and repair of highways and airfields

Objects of professional activity:

- local executive authorities in the field of road transport and their regional structures;
- organizations and enterprises of the transport industry in the field of design, construction, maintenance and repair of highways and airfields, the highway network of highways, city and village streets and access roads of industrial enterprises;
- organizations and enterprises in the field of manufacturing of building materials and structures for objects of the transport and communication complex.

Types of professional activity:

- production and technological;
- organizational and managerial;
- project.

Functions of professional activity:

1) Organization of manufacturing of building materials and structures for transport and communication facilities; organization of design, construction, maintenance and repair of highways and airfields; use of standard methods for calculating the reliability of structures of highways and airfields.

2) Management of production processes, analysis of the results of production activities; management of works on the implementation of design and construction works, maintenance and repair of highways and airfields; technical diagnostics of highways and airfields, the use of measuring instruments of road laboratories; analysis and evaluation of production and non-production costs or resources for high-quality design, construction, maintenance and repair of highways and airfields.

3) Development of new technologies, development of design and technological documentation using computer technology; calculation of strength and stability under various types of loading of highways and airfields, development of projects for new and reconstruction (modernization) of existing highways and airfields; selection of building materials for the manufacture of structures of highways and airfields, justification of technical solutions; development of technical specifications and technical conditions for projects of new and reconstruction (modernization) of existing highways and airfields, constructions of highways and airfields, technological processes of maintenance and repair of highways and airfields, means of technical diagnostics of highways and airfields using modern information technologies and computer programs; design of new constructions of highways and airfields, corresponding to the latest achievements of science and technology, safety requirements.

The list of specialist positions:

Head of the Capital Construction Department, head of the production (technical, production and technical) department, head of the site (workshop), head of the logistics Department, Head of the Safety and Labor Protection Department, Head of the regulatory research Laboratory for Labor, Head of the tool Department, head of the production laboratory (production control), head of the quality control department, head of the road laboratory, site master (road master), work producer (foreman), master of industrial training, foreman, project manager, project manager, lead engineer, design engineer, process engineer (technologist), repair engineer, inventory engineer of buildings and structures, metrology engineer, labor organization

engineer, labor rationing engineer, safety and labor protection engineer, engineer for environmental protection (ecologist), laboratory engineer, engineer, chief specialist, leading specialist, specialist, design technician, site technician, process technician, inventory technician of buildings and structures, metrology technician, labor technician, technician, laboratory technician, laboratory assistant

Professional certificates obtained at the end of training: Road worker, asphalt concrete worker.

Requirements for the previous level of education: general secondary, technical and vocational, post-secondary, higher education (bachelor's degree).

In the course of training, students undergo various types of professional practice:

- educational;
- production;
- pre-graduation.

Educational practice.

During the internship, students should get an idea of the role of transport equipment in the country's economy, the variety of vehicles, the importance of mechanization and automation in increasing labor productivity, as well as an idea of the main technological processes of operation, maintenance and repair of transport equipment and technology of transport enterprises.

Production practice 1.

During the period of practical training, the student receives certain practical knowledge, skills and abilities according to the chosen Educational program.

The objectives of the practical training are: deepening and consolidation of theoretical knowledge gained in the course of training; obtaining skills for the practical use of professional knowledge gained during theoretical training; training in skills for solving practical and managerial tasks; familiarity with the specifics of a bachelor's professional activity in a particular production; formation of a professional position of a specialist, a style of behavior, mastering professional ethics.

The objectives of industrial practice are to consolidate, deepen and systematize the knowledge gained during the study of theoretical basic and profile disciplines at a particular enterprise or organization and to acquire initial practical experience.

Pre-graduate practice 2.

The content of the pre-graduate practice is determined by the topic of the thesis (project). During the pre-graduate practice, the student collects factual material about the production (professional) activities of the enterprise (organization) and uses it in the development of the graduation project (work). The practice involves working out a given problem (the topic of the thesis) on the materials of the activity of a particular enterprise (organization) with the student's independent formulation of conclusions, suggestions, recommendations, etc. In the course of practice, the student must show his knowledge and skills of a specialist, organizational skills, decision-making skills, performance discipline, responsibility, initiative.

Final certification it is carried out in the form of writing and defending a thesis (project) or preparing and passing a comprehensive exam. The purpose of the final certification is to evaluate the learning outcomes and the acquired competencies achieved upon completion of the study of the educational program of higher education.

The thesis (project) aims to identify and evaluate the analytical and research abilities of the graduate and is a generalization of the results of the student's independent study of an urgent problem in the field of his chosen specialty. The comprehensive exam program reflects

integrated knowledge and key competencies that meet the requirements of the labor market in accordance with the educational program of higher education.

5. MATRIX OF CORRELATION OF LEARNING OUTCOMES ACCORDING TO THE EDUCATIONAL PROGRAM WITH ACADEMIC DISCIPLINES/MODULES

[illegible]

science competencies													
16	Engineering mathematics 1	5	+										
17	Engineering mathematics 2	5	+										
18	Construction Physics	5				+							
19	Construction chemicals	4											
Professional module													
20	Engineering geodesy	6			+								
21	Building materials	6			+								
22	Architectural design of buildings and structures using BIM technologies	5									+		
23	Occupational safety and health	5					+						
Information Technology and Artificial Intelligence Module													
24	Engineering graphics and computer modeling	4			+								
25	Basics of Python programming	3						+					+
A practice-oriented module													
26	Professionally oriented foreign language	3					+						+
27	Educational practice (geodetic)	2											
The module of natural science competencies													
28	Theoretical mechanics	4	+	+									
29	Fundamentals of classical mechanics	4	+	+									
30	Resistance of materials	5	+	+									
31	Applied mechanics	5	+	+									
32	Construction mechanics	5	+	+									
33	Mechanics of structural strength	5	+	+									
Professional module													
34	Geology and mechanics of soils	5			+				+				
35	Geoinformation systems in geology	5			+				+				
36	Foundations and foundations	5			+				+				
37	Geotechnics in foundation engineering	5			+				+				
38	Electrical engineering and the basics of electronics	4			+				+				
39	Электротехнические расчеты объектов строительства	4			+				+				

The module of economic and managerial competencies													
40	Managerial economics	3				+							
41	Time management	3				+							
Professional module													
42	Design and calculation of reinforced concrete structures using BIM technologies	5		+							+		
43	Design and calculation of metal structures using BIM technologies	5		+							+		
44	Reconstruction of buildings and structures using BIM technologies	5							+			+	
A practice-oriented module													
45	Information modeling of building structures (BIM Structures)	5		+							+		
46	Design and calculation of reinforced concrete structures using BIM technologies	5		+	+								
47	Building production technology 1	5							+				
48	Building production technology 2	5							+	+			
49	Building production technology 3	5							+	+			
50	Technical operation of buildings and structures	5							+	+			
51	Production practice 1	5							+	+			
52	Production practice 2/ Pre-graduate practice	5							+	+			
Information Technology and Artificial Intelligence Module													
53	Computer-aided design of buildings and structures	4				+					+		
54	Computer-aided design systems for buildings and structures	4				+					+		
Professional module													
55	BIM technologies in the design of engineering systems and networks of buildings and structures	4										+	
56	BIM technologies in water supply, sanitation, heat	4										+	

	and gas supply and ventilation systems												
57	Construction machinery and equipment	4								+			
58	Machines and mechanisms in construction	4								+			
A practice-oriented module													
59	Technology of construction of high-rise buildings	6								+			
60	Technological processes of construction of high-rise buildings	6								+			
61	Organization and planning of construction of buildings and structures	5									+		
62	Organization of construction production	5									+		
63	Diagnostics of buildings and structures using BIM technologies	5								+			
64	Inspection and testing of buildings and structures using BIM technologies	5								+			
The Infrastructure Program module / The module of the additional educational program													
65	Information Modeling technology in the field of architecture and construction	3					+						
66	Minor program 1	3					+						
67	Regulatory and technical documentation in construction	3										+	
68	Minor program 2	3										+	
69	Estimated pricing in architecture and construction	3								+			
70	Minor program 3	3								+			
The module of personal competencies													
71	Service to society	1											+
72	Business communications	1											+
73	FINAL CERTIFICATION	8	+	+	+	+	+	+	+	+	+	+	+

6. STRUCTURE OF THE BACHELOR'S DEGREE PROGRAM

№ п/п	Name of cycles of disciplines	Total labor intensity	
		in academic hours	in academic credits
1	The cycle of general education disciplines (OOD)	1680	56
1)	is a mandatory component	1530	51
	History of Kazakhstan	150	5
	Philosophy	150	5
	Foreign language	300	10
	Kazakh (Russian) language	300	10
	Information and Communication Technologies (in English)	150	5
	Module of socio-political knowledge (sociology, political science, cultural studies, psychology)	240	8
	Physical Culture	240	8
2)	Component of choice	150	5
2	Cycle of basic disciplines (DB)	at least 5280	at least 176
1)	University component		
2)	Professional practice		
3	Cycle of profile disciplines (PD)		
1)	University component		
2)	Professional practice		
4	Additional types of training (DVO)		
1)	Component of choice		
5	Final certification		
1)	Writing and defending a thesis, graduation project, or preparing and passing a comprehensive exam	at least 240	at least 8
	Total	at least 7200	at least 240

7. CURRICULUM FOR THE ENTIRE PERIOD OF STUDY

JSC "ALT University named after Mukhametzhan Tyynyshpayev"

THE CURRICULUM

The form of education: full-time

Direction of training:
68073 – Architecture and construction

Group of educational programs:
8074 – Urban planning, construction and civil engineering

Name of educational program:
6807347 – Digital construction and BIM technologies

Admission: 2025 year

Degree: Bachelor of Engineering and Technology

№	Discipline code	Naming of cycles and disciplines	Total labor capacity		Form of control, instrument		Academic workload, contact hours							Distribution of workload by type of activity										Securing position in the department
			In academic hours	In academic and extracurricular hours	In academic credits	Exam	CP	Total hours	Classroom classes				1 course					2 course					3 course	
									Lectures	Practical	Laboratory facilities	MSF	10 weeks	10 weeks	10 weeks	10 weeks	10 weeks	10 weeks	10 weeks	10 weeks	10 weeks			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
THE CYCLE OF GENERAL EDUCATION DISCIPLINES (GED)																								
1	Required component:		1530	51	21			1530	60	440	0	168	642	6	6	13	13	6	7	0	0	0		
1.1	The module of general education competencies																							
1.1.1	23-0-0-OK-46	History of Kazakhstan	150	5	4			150	20	20		5	100									CHOPM		
1.1.2	23-0-0-OK-F1	Philosophy	150	5	0			150	20	20		5	100									CHOPM		
1.1.3	23-0-0-OK-FK	Physical education	240	8	1,2,3,4			240	40			32	168	2	2	2	2					CHOPM		
1.2	Language competence module																							
1.2.1	23-0-0-OK-F1a	Foreign language	300	10	1,2,3,4,5			300		200		40	60	2	2	2	2	2				LE		
1.2.2	23-0-0-OK-F1b	Kazakh (Russian) language	300	10	1,2,3,4,5			300		190		40	160	2	2	2	2	2				LE		
1.3	The module of socio-political competencies																							
1.3.1	23-0-0-OK-50tr	Sociology	240	8	4			240	5	10		5	37									CHOPM		
1.3.2	23-0-0-OK-Kul	Culturelogy	240	8	3			240	5	10		5	37									CHOPM		
1.3.3	23-0-0-OK-Pol	Political science	240	8	5			240	5	10		5	37									CHOPM		
1.3.4	23-0-0-OK-Psi	Psychology	240	8	1			240	5	10		5	37									CHOPM		
1.4	Information Technology and Artificial Intelligence Module																							
1.4.1	23-0-0-OK-63	Information and communication technologies	150	5	3			150	20	20		0	102									ICT		
1.5	Component of choice:		150	5	1			150	20	20		0	102	0	0	0	0	0	0	0	0	0		
1.6	The module of economic and managerial competencies																							
1.6.1	23-0-0-KV-00T	Environmentally sustainable technologies	150	5	5			150	20	20		0	102									MVLS		
1.6.2	23-0-0-KV-00P	Green economy and sustainable entrepreneurship	150	5	5			150	20	20		0	102									LMT		
1.6.3	23-0-0-KV-00Q	Fundamentals of financial literacy	150	5	5			150	20	20		0	102									LMT		
1.6.4	23-0-0-KV-00R	Digital inclusion	150	5	5			150	20	20		0	102									ICT		
1.6.5	23-0-0-KV-00S	Basics of law and anti-corruption culture	150	5	5			150	20	20		0	102									CHOPM		
1.7	TOTAL for the GED cycle:		1530	56	22			1530	100	440	0	176	944	6	6	13	13	11	7	0	0	0		
THE CYCLE OF BASIC AND PROFILE DISCIPLINES (BD, PD)																								
CYCLE OF BASIC DISCIPLINES (BD)																								
2	The university component:		1590	53	12			1590	100	200	40	165	1025	14	14	8	5	0	3	0	5	0		
2.1	The module of natural science competencies																							
2.1.1	24-0-0-VK-001	Engineering mathematics 1	150	5	1			150	10	20		15	105	5								GE		
2.1.2	24-0-0-VK-002	Engineering mathematics 2	150	5	2			150	10	20		15	105	5								GE		
2.1.3	25-0-0-VK-00F	Construction Physics	150	5	1			150	10	10	10	15	105	5								ACE		
2.1.4	25-0-0-VK-00G	Construction chemistry	120	4	2			120	10	10	10	15	75		4							GE		
2.2	Professional module																							
2.2.1	25-0-0-VK-00d	Engineering geology	180	6	3			180	10	20	10	15	125			6						TC		
2.2.2	25-0-0-VK-00e	Building materials	180	6	2			180	20	10	10	15	125									ACE		
2.2.3	25-0-0-VK-00F	Architectural design of buildings and structures using BIM technologies	150	5	4			150	10	20		15	105									ACE		
2.2.4	25-0-0-VK-00G	Occupational safety and health	150	5	0			150	10	20		15	105									MVLS		
2.3	Information Technology and Artificial Intelligence Module																							
2.3.1	25-0-0-VK-00H	Engineering graphics and computer modeling	120	4	1			120	10	20		15	75	4								TC		
2.3.2	25-0-0-VK-00I	Python programming basics	90	3	2			90		10		15	65		2							ICT		
2.4	A practice-oriented module																							
2.4.1	25-0-0-VK-00J	Professionally oriented foreign language	90	3	0			90		40		15	35									LE		
2.4.2	25-0-0-VK-00K	Educational practice (internship)	88	3	3			88														TC		
2.5	Component of choice:		930	31	7			930	70	100	30	105	625	4	4	4	4	4	4	4	4	4		
2.6	The module of natural science competencies																							
2.6.1	25-0-0-VK-00L	Theoretical mechanics	120	4	1			120	10	20		15	75	4								TC		
2.6.2	25-0-0-VK-00M	Fundamentals of classical mechanics	120	4	2			120	10	20		15	75									TC		
2.6.3	25-0-0-VK-00N	Resistance of materials	120	4	3			120	10	20		15	105									TC		
2.6.4	25-0-0-VK-00O	Applied mechanics	120	4	3			120	10	20		15	105									TC		
2.6.5	25-0-0-VK-00P	Construction mechanics	120	4	3			120	10	20		15	105									TC		
2.6.6	25-0-0-VK-00Q	Mechanics of structural strength	120	4	3			120	10	20		15	105									TC		
2.7	Professional module																							
2.7.1	25-0-0-VK-00R	Geology and Soil Mechanics	180	6	4			180	10	10	10	15	165									ACE		
2.7.2	25-0-0-VK-00S	Geoinformation systems in geology	180	6	4			180	10	10	10	15	165									ACE		
2.7.3	25-0-0-VK-00T	Foundations and bases	180	6	5			180	10	20		15	105									ACE		
2.7.4	25-0-0-VK-00U	Geotechnics in foundation engineering	180	6	5			180	10	20		15	105									ACE		
2.8	The module of economic and managerial competencies																							
2.8.1	25-0-0-KV-00E	Electrical engineering and the basics of electronics	120	4	7			120	10	10	10	15	75									E		
2.8.2	25-0-0-KV-00F	Electrotechnical calculations of construction facilities	120	4	7			120	10	10	10	15	75									E		
2.9	The module of economic and managerial competencies																							

8.CATALOG OF DISCIPLINES OF THE UNIVERSITY COMPONENT

 Director "PM Company LTD" LLP " Бугыbayev R. 2025 yr.	I approve "Transport and construction" Director of the Institute ИСТИТУТЫ Abdreshov Sh.A. "21" 07 2025 zh. АО «АЛТ Университет имени Мухамеджана Туралиева»
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CATALOG OF DISCIPLINES OF THE UNIVERSITY COMPONENT
EDUCATIONAL PROGRAM «6B07347 – Digital construction and BIM technologies»
Education level: Bachelor's degree Duration of study: 3 years Admission year: 2025

Cycle	Component	Name of the discipline	Total labor intensity		Term	Learning outcomes academic hours	Brief description of the discipline	Prerequisites	Post-requirements academic hours
			academic hours	academic hours					
1	2	3	4	5	6	7	8	9	10
BD	VK	Engineering mathematics 1	150	5	1	LO 1	Mastering the mathematical apparatus for solving theoretical and applied problems of a specific profile, getting an idea of mathematical modeling and interpretation of the solutions obtained. The course sections include elements of linear algebra and analytical geometry, an introduction to mathematical analysis, and differential calculus of functions of one and several variables. provide students with the necessary mathematical tools to solve problems related to the design, analysis and optimization of engineering systems.	Basic school knowledge in mathematics	Engineering Mathematics 2, Construction Chemistry, Engineering Geodesy
BD	VK	Engineering mathematics 2	150	5	2	LO 1	Formation of mathematical knowledge and skills necessary for the study of related natural sciences, disciplines of the professional cycle and skills of mathematical modeling and research in professional activities. The course sections include integral calculus of functions of one and several variables, ordinary differential equations, and series theory. Special attention is	Engineering mathematics 1	Architectural design of buildings and structures, Educational practice (geodetic

							paid to the application of mathematical methods to solve engineering problems.		
BD	VK	Construction Physics	150	5	1	LO 1	Formation of knowledge, skills and competencies necessary for the development, design and operation of energy-efficient, comfortable and durable buildings and structures. He studies the physical processes and phenomena occurring in building structures and buildings, as well as their interaction with the environment, the basics of construction and architectural acoustics, building climatology, lighting engineering, thermal engineering. The course helps to learn how to minimize the negative impact of external and internal physical factors on buildings.	Basic school knowledge in physics	Engineering Mathematics 2, Construction Chemistry, Engineering Geodesy, Educational practice (geodetic)
BD	VK	Construction chemicals	120	4	2	LO3	The formation of knowledge in the field of building chemistry is associated with the development of science and technology aimed at improving building materials and their application processes. Construction chemistry studies and develops chemical materials, additives and substances that affect the properties of building structures, ensuring their strength, durability, resistance to external influences and energy efficiency. An important part of the course is studying the environmental impact of building chemicals.	Engineering Mathematics 1, Construction Physics	Building materials, Construction mechanics
BD	VK	Engineering geodesy	180	6	3	LO 4	Forms professional competencies necessary for the application of basic knowledge in the field of geodesy. It provides geodetic measurements for solving typical construction tasks, detailed breakdown of structures, control of the geometry of structures under construction, carrying out executive surveys at various stages of construction and installation work, as well as mastering the skills of working with basic geodetic instruments in production conditions.	Engineering Mathematics 1,2, Building Physics, Building Materials.	Architectural design of buildings and structures, Building structures, Fundamentals of water supply and sanitation, heat and gas supply and ventilation, Technology of construction production
BD	VK	Building materials	180	6	2	LO 3	The formation of knowledge about building materials consists in obtaining in-depth	Engineering Mathematics 1, Construction Physics	Engineering geodesy, Building structures,

							knowledge about various types of materials, their characteristics and methods of application. This knowledge is necessary in order to choose the materials for construction competently, thereby ensuring the durability, safety, economic efficiency and functionality of the facilities. The course is aimed at familiarizing students with various types of building materials, such as concrete, brick, metal, wood, glass, insulation and finishing materials. An important task is to study their physical and mechanical properties.		Technology of construction production 1
BD	VK	Architectural design of buildings and structures	150	5	4	LO9	Formation of professional skills in the field of building design for various purposes, taking into account functional, constructive, aesthetic and regulatory requirements. In the course of training, they master the principles of spatial planning solutions, work with architectural graphics, layout design and modern software modeling tools. Special attention is paid to the harmonious combination of architectural form, engineering solutions and urban context.	Engineering Mathematics 1,2, Building Physics, Building Materials.	Environmentally sustainable technologies, Foundations and foundations, Geotechnics in foundation engineering, Building structures, Technology of construction production 1, 2,3
BD	VK	Occupational safety and health	150	5	8	LO6	Formation of knowledge and skills that ensure human safety in professional and daily activities. The course covers the prevention of occupational injuries, minimization of occupational risks, as well as the basics of ensuring the sustainability of systems in emergency situations. Special attention is paid to legislation in the field of occupational safety, occupational hygiene and ergonomics, as well as means of individual and collective protection.	Building materials, Engineering geodesy, Technology of construction production 1, 2,3	Technical operation of buildings and structures, Production practice 2, Diagnostics of buildings and structures, Inspection and testing of buildings and structures, Minor program 3.
BD	VK	Engineering graphics and computer modeling	150	5	1	LO4	Formation of basic skills in the field of technical drawing, project documentation and creation of three-dimensional models using modern software tools. The methods of graphical representation of technical objects, reading and executing drawings, as well as the basics of 2D	Basic school knowledge in computer science	Fundamentals of Python programming, Engineering Mathematics 2, Engineering Geodesy, Architectural design of

							and 3D modeling are studied. The course lays the foundation for subsequent engineering design and preparation of design documentation.		buildings and structures.
BD	VK	BasicsofPythonProgramming	90	3	2	LO4	It forms the basic knowledge and skills necessary for the effective use of Python in solving various programming tasks. It includes mastering the syntax and basic constructions of the language, developing logical thinking and the ability to solve practical problems using programming. It covers the key elements of Python: variables, operators, data structures (lists, tuples, sets, dictionaries), conditional operators, loops, functions, and classes.	Engineering Mathematics 1, Engineering Graphics and Computer Modeling	Architectural design of buildings and structures, Building structures
BD	VK	Professionally oriented foreign language	90	3	6	LO 9	It takes into account the needs for learning a foreign language, determined by the specifics of the future profession or specialty. It involves a combination of mastering a professionally oriented foreign language with the development of personal qualities, knowledge of the culture of the country of the language being studied and the formation of special skills based on professional and linguistic knowledge. Provides the mastery of specialized vocabulary and phraseology used in a specific professional field.	Computer and engineering modeling, The basics of artificial intelligence, , Engineering mathematics 1.2, Construction Physics.	Computer-aided design of buildings and structures, Information modeling technology in architecture and construction, Regulatory and technical documentation in construction
BD	VK	Educational practice (geodetic)	60	2	3	LO4	It provides familiarization with the fields of professional activity and training profiles, as well as with the skills of performing geodetic surveys of the area, forward and reverse movement, leveling, reference to reference points, taking out points and elevation marks from the map. It includes solving typical engineering and geodetic tasks and mastering the correct use of various types of geodetic equipment for accurate measurements and surveys. It provides for setting up and calibrating instruments, as well as working with software for processing the received data.	Engineering Mathematics 1-2, Construction Physics. Engineering geodesy, Building materials,	Architectural design of buildings and structures, Occupational safety and life safety, Geology and mechanics of soils, Foundations and foundations, Technology of construction production 1, Technology of construction production

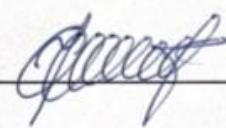
									2
BD	VK	Design and calculation of reinforced concrete structures	150	5	6	LO2,9	Formation of knowledge and practical skills in the design and calculation of reinforced concrete structures, taking into account current regulatory documents and requirements. The issues of strength, stability, crack resistance, reinforcement and construction of elements are studied. Special attention is paid to design schemes, selection of materials and ensuring the reliability of building structures in various operating conditions.	Engineering Mathematics 1-2, Structural Physics, Building materials, Architectural design of buildings and structures, Building structures	Design and calculation of special structures, Reconstruction of buildings and structures, Technology of construction production 3, Technology of construction of high-rise buildings
BD	VK	Design and calculation of metal structures	150	5	7	LO2,9	Formation of knowledge and skills in the design and calculation of metal structures, taking into account current standards and safety requirements. The strength characteristics of metals, calculation of stability, reliability of joints, as well as methods for increasing the durability of structures are studied. Special attention is paid to the calculation of the elements of the frames of buildings, structures and bridges in various operating conditions.	Engineering Mathematics 1-2, Structural Physics, Building materials, Architectural design of buildings and structures, Building structures	Design and calculation of special structures, Reconstruction of buildings and structures
BD	VK	Reconstruction of buildings and structures using BIM technologies	150	5	8	LO 7,10	Forms the knowledge and skills necessary for the reconstruction of buildings and structures using BIM technologies. It covers the processes of creating digital models of existing facilities, developing design solutions for modernization and restoration, as well as coordinating all stages of work using information modeling to improve the efficiency, accuracy and quality of reconstruction.	Engineering Mathematics 1-2, Construction physics, Building materials, Architectural design of buildings and structures, Building structures, Design and calculation of reinforced concrete structures, Design and calculation of metal structures, Technology of construction production 1,2,3	Technical operation of buildings and structures, Diagnostics of buildings and structures, Inspection and testing of buildings and structures

BD	VK	Building structures	150	5	5	LO2,9	Forms the basic knowledge of shaping, calculation and construction of load-bearing structures, the ability to choose the right materials, cross-section shape, design scheme, based on the purpose and purpose of operation, develop design solutions for buildings and structures under construction, master the skills of calculating structural elements according to limiting conditions, ensuring compliance with the required indicators of reliability, efficiency, efficiency. The main purpose of the course is to teach the principles of building structure design. This includes knowledge of the requirements for strength, safety, stability, and cost-effectiveness of design solutions.	Engineering Mathematics 1-2, Structural Physics, Building materials, Architectural design of buildings and structures	Design and calculation of reinforced concrete structures, Design and calculation of metal structures, Design and calculation of special structures, Reconstruction of buildings and structures, Technology of construction production 2, 3, Technology of construction of high-rise buildings, Reconstruction of buildings and structures.
BD	VK	Design and calculation of special structures	150	5	8	LO 2,3	Formation of knowledge and skills in the field of design and calculation of special structures for various purposes. The features of design solutions, design schemes, and methods for ensuring strength, stability, and reliability in difficult operating conditions are studied. The issues of the choice of materials, construction technologies and compliance with regulatory requirements for the creation of facilities of increased responsibility and special purpose are considered.	Engineering Mathematics 1-2, Structural Physics, Building materials, Architectural design of buildings and structures, Building structures	Technical operation of buildings and structures, Diagnostics of buildings and structures, Inspection and testing of buildings and structures
BD	VK	Construction production technology 1	150	5	5	LO7	Formation of knowledge and skills in the field of organization and technology of construction production. The main construction processes, methods of construction of buildings and structures, technologies of excavation, concrete, installation and finishing works are studied. Special attention is paid to the rational use of machinery, labor organization, labor protection and safety, as well as ensuring the quality of construction products at all stages of production.	Engineering Mathematics 1-2, Structural Physics, Engineering Geodesy, Building Materials, Geology and Mechanics of soils, Architectural design of buildings and structures	Технология строительного производства 2,3, Технология возведения высотных зданий, Реконструкция зданий и сооружений, Техническая эксплуатация зданий

									и сооружений, Организация строительного производства, Охрана труда и безопасность жизнедеятельности
BD	VK	Construction production technology 2	150	5	6	LO7,8	Formation of in-depth knowledge and skills in the field of technology for the construction of buildings and structures from prefabricated structures. Advanced methods of organizing construction processes, modern building materials and technologies, as well as mechanization and automation of construction work are studied. The features of the construction of large and complex facilities, construction management, as well as issues of quality, safety and ecology at all stages of the construction process are considered.	Engineering Mathematics 1-2, Construction physics, Engineering Geodesy, Building materials, Architectural design of buildings and structures, Foundations and foundations, Technology of construction production 1	Technology of construction production 3, Technology of construction of high-rise buildings, Reconstruction of buildings and structures, Technical operation of buildings and structures, Organization of construction production, Labor protection and life safety
BD	VK	Construction production technology 3	150	5	7	LO 7,8	Formation of in-depth knowledge and skills in the field of organization and technology of construction of buildings and structures from monolithic structures. Innovative methods and technologies used in modern monolithic concrete and reinforced concrete construction processes, including automation, mechanization and the use of highly efficient materials, are considered. The issues of construction project management, quality assurance, safety and ecology, as well as cost and time optimization at all stages of construction are being studied.	Engineering Mathematics 1-2, Construction physics, Engineering Geodesy, Building materials, Architectural design of buildings and structures, Foundations and foundations, Technology of construction production 1,2	Reconstruction of buildings and structures, Technical operation of buildings and structures, Organization of construction production, Labor protection and life safety

BD	VK	Technical operation of buildings and structures	150	5	9	LO 8	Formation of knowledge and skills in the field of technical operation of buildings and structures. The basic principles of maintenance, repair and operation of various engineering systems and structures are studied. The issues of monitoring the condition of buildings, emergency prevention, maintenance planning, as well as efficient use of resources and increasing energy efficiency during operation are considered.	Инженерная математика1-2, Строительная физика, Строительные материалы, Архитектурное проектирование зданий и сооружений, Основания и фундаменты, Технология строительного производства 1,2,3	FINAL CERTIFICATION
		Productionpractice1	150	5	6	LO8	The main objectives of industrial practice are: consolidation of theoretical knowledge and practical skills in the chosen educational program in an industrial environment, acquisition of organizational work experience, obtaining a working specialty, formation of practical skills and competencies in the process of mastering the bachelor's program. Students have the opportunity to work with the technologies and methods that have been studied in theory, which allows them to strengthen their understanding and see how this knowledge is applied in practice.	Educational practice (geodetic), Technology of construction production 1	Productionpractice2

BD	VK	Production practice 2/ Pre-graduate practice	150	5	9	LO 8	It forms the knowledge and skills necessary for successful preparation for professional activity. At this stage of training, the opportunity is provided to apply the theoretical knowledge gained during the educational process in a real-world production environment. Pre-graduate practice includes preparation for writing a thesis focused on solving real problems and challenges that arise in the company.	Educational practice (geodetic), Industrial practice 1, Technology of construction production 1,2,3, Organization of construction production, Labor protection and life safety	FINAL CERTIFICATION
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Head of the Department of Architectural and Construction Engineering,  K.S. Kulmanov.

9.CATALOG OF DISCIPLINES OF THE COMPONENT BY CHOICE

 AGREED Director "BIM Company LTD" LLP " Bugybayev R. 2025 yr.	I approve "Transport and construction" Director of the Institute Abdreshov Sh.A. 03 2025 zh.
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CATALOG OF DISCIPLINES OF THE COMPONENT BY CHOICE
EDUCATIONAL PROGRAM «6B07329– Construction of industrial and civil buildings and structures»
Education level: Bachelor's degree Duration of study: 3 years Admission year: 2025

Cycle	Component	Name of the discipline	Total labor intensity		Term	Learning outcomes academic hours	Brief description of the discipline	Prerequisites	Post-requirements academic hours
			academic hours	academic hours					
1	2	3	4	5	6	7	8	9	10
GED	KV	Environmentally sustainable technologies	150	5	5	LO 5	The formation of knowledge about environmentally sustainable technologies includes the study and development of solutions aimed at the sustainable development of society with minimal impact on the environment. These technologies play a key role in reducing pollution, managing natural resources, reducing greenhouse gas emissions, and preserving ecosystems. Education in environmentally sustainable technologies contributes to the formation of competencies that are necessary for the creation and implementation of innovative solutions aimed at a sustainable future.	History of Kazakhstan, Kazakh (Russian) language, Professionally oriented foreign language, Professionally oriented foreign language, Cultural studies, Political Science, Psychology	Final certification
		Green economy and sustainable entrepreneurship				LO 5	The use of environmentally friendly materials, reduction of energy consumption, waste reduction and minimization of environmental impact at all stages of the construction process are considered. The application of the principles of sustainable development at all stages of design, taking into account such factors as the orientation of the building to the sunny side, the use of natural light and ventilation, as well as	History of Kazakhstan, Kazakh (Russian) language, Professionally oriented foreign language, Professionally oriented foreign language, Cultural studies, Political Science,	Final certification

						the use of water.	Psychology	
		Fundamentals of financial literacy			LO6	The formation of knowledge about the principles of managing personal and family finances includes the development of skills for making informed financial decisions. This important skill helps you effectively plan your budget, manage income and expenses, invest, and properly plan your retirement savings and manage your debts. Knowledge of financial literacy contributes to the development of the ability to make informed decisions that ensure financial stability and well-being	History of Kazakhstan. Kazakh (Russian) language, Professionally oriented foreign language, Professionally oriented foreign language, Cultural studies, Political Science, Psychology	Final certification
		Digital inclusion			LO 11	The formation of knowledge about the process of ensuring equal access to digital technologies and Internet resources is aimed at eliminating digital inequality and creating conditions for the full participation of every person in the digital society, regardless of their age, social status, education, physical condition or place of residence. The goal of digital inclusion is to ensure equal opportunities for everyone in the use of modern technologies, which contributes to the integration of various population groups into the digital environment and to improving the quality of life.	History of Kazakhstan. Kazakh (Russian) language, Professionally oriented foreign language, Professionally oriented foreign language, Cultural studies, Political Science, Psychology	Final certification

		Fundamentals of law and anti-corruption culture				LO 5	The formation of knowledge about the fundamentals of law and anti-corruption culture is the development of important concepts aimed at developing legal awareness and shaping public behavior focused on upholding the rule of law and combating corruption. This helps to foster responsibility, respect for the law and an active civic position. Training in the basics of law (for example, the Constitution, laws, regulations), so that participants understand their rights and obligations, as well as be aware of the possible consequences of violations.	History of Kazakhstan. Kazakh (Russian) language, Professionally oriented foreign language, Professionally oriented foreign language, Cultural studies, Political Science, Psychology	Final certification
BD	KV	Theoretical mechanics	120	4	1	LO1	Formation of logical thinking and scientific foundation of engineering education. He studies the basic concepts, axioms, laws and theorems that make it possible to formulate equations describing the behavior of systems, a specific phenomenon in mathematical form, mathematical models of the behavior of material bodies, the basic methods of classical mechanics in the study of motion and equilibrium of mechanical systems in the study of professional disciplines. It allows you to delve into Newton's laws, the laws of conservation (energy, momentum, etc.), as well as their application to a wide range of mechanical systems.	Engineering mathematics 1, Construction Physics, Building materials, Computer and engineering modeling.	Resistance of materials, Construction mechanics, Building materials, Architectural design of buildings and structures, Building structures
		Fundamentals of classical mechanics					It provides the development of scientific knowledge in the theoretical branch of physics — classical mechanics, mastering theoretical methods for solving physical problems and the formation of a modern physical picture of the world. In the process of studying mechanical phenomena, an understanding of the physical nature of electrical and magnetic processes is achieved, which contributes to a holistic perception of physical laws. The use of Newton's laws makes it possible to predict the	Engineering Mathematics 1, Structural Physics, Engineering Graphics and computer modeling.	Resistance of materials, Construction mechanics, Building materials, Architectural design of buildings and structures, Building structures

							movement of bodies under the influence of forces, from simple cases such as falling objects to complex systems, including the movement of planets and spacecraft.		
BD	KV	Resistance of materials	150	5	2	LO 2	Formation of knowledge about the strength, rigidity and stability of rods and rod systems, study of the basics of designing rod structures operating under tension, compression, shear, shear, torsion and bending. He studies methods and practical techniques for calculating rods, flat and volumetric structures under various force, deformation and temperature influences using classical and modern methods of structural calculation and mechanical testing.	Engineering Mathematics 1, Structural Physics, Theoretical Mechanics	Architectural design of buildings and structures, Construction mechanics, Foundations and foundations, Building structures
		Applied mechanics					Formation of a theoretical basis for understanding calculation methods for strength, rigidity and stability of machine and equipment elements, ensuring its reliability and efficiency. It studies the deformations and strength conditions of bodies and provides the general principles necessary to ensure the reliability of structures of any purpose, the correct calculation of the dimensions of structural elements and parts. The subject helps to find effective solutions for the design, operation and optimization of various mechanisms, machines and structures.	Engineering Mathematics 1, Structural Physics, Theoretical Mechanics	Fundamentals of financial literacy, Critical thinking, Managerial economics, Time management.
BD	KV	Construction mechanics	150	5	3	LO 2	Formation of skills in designing standard structures related to the choice of a design scheme, determining the most loaded structural elements and calculating internal forces and stresses. Studies methods for calculating forces in statically definable and indefinable rod systems under constant and temporary loads, determining displacement in rod systems to ensure the strength and reliability of structures combined with high efficiency.	Engineering Mathematics 1, Structural Physics, Theoretical Mechanics, Resistance of materials	Architectural design of buildings and structures, Foundations and foundations, Building structures, Reconstruction of buildings and structures
		Mechanics of structural strength					Formation of skills in the field of work analysis and calculation of structures made of various	Engineering Mathematics 1,	Architectural design of buildings and structures,

		h					materials under various influences using modern computing equipment. He studies the features of the laws of stress and strain distribution in structural elements under various conditions of external load, principles and methods of static and dynamic calculation of engineering structures for strength, rigidity, stability. The search for the most effective solutions that provide the necessary strength with minimal cost of materials and resources.	Structural Physics, Theoretical Mechanics, Resistance of materials	Foundations and foundations, Building structures, Reconstruction of buildings and structures
BD	KV	Geology and mechanics of soils	150	5	4	LO2,3	The formation of skills in the field of geology and mechanics of soils is aimed at studying the structure, composition, properties and behavior of soils (land masses), as well as their interaction with engineering structures and structures. These disciplines form the basis for the design and construction of infrastructure facilities such as buildings, bridges, roads, and other structures. The training includes the development of methods for analyzing and evaluating ground conditions, which contributes to the effective design and safety of construction facilities.	Construction Physics, Construction Chemistry, Building Materials, Theoretical Mechanics	Foundations and foundations, Electrical engineering and fundamentals of electronics, Building structures, Technology of construction production 1,2,3, Engineering systems and networks of buildings and structures.
		Geoinformation systems in geology					The use of information systems in construction is used to select the optimal location for construction, assess risks related to geology and soil, as well as in the planning and management of construction projects.	Construction Physics, Construction Chemistry, Building Materials, Theoretical Mechanics	Construction Foundations and foundations, Electrical engineering and fundamentals of electronics, Building structures, Technology of construction production 1,2,3, Engineering systems and networks of buildings and structures
BD	KV	Foundations and foundations	150	5	5	LO 3	Formation of knowledge about the basic laws of soil behavior under load, the theory of stress-strain state and their interaction with structures. He studies the basic methods for determining the sedimentation of foundations, the stability of slopes and slopes, as well as the morphology,	Theoretical Mechanics, Fundamentals of Classical Mechanics, Resistance of materials, Applied Mechanics, Engineering Geology,	Design and calculation of reinforced concrete structures, Design and calculation of metal structures, Design and calculation of special

							dynamics and regional features of the upper horizons of the Earth's crust (lithosphere) and their relationship with engineering structures. One of the main tasks is to create foundations that will ensure the stability of the entire building or structure under any external influences.	Hydrogeology and soil mechanics,	structures, Technology of construction production 1,2,3, Reconstruction of buildings and structures
		Geotechnics in foundation engineering					Formation of knowledge about the basic laws of soil behavior under load, the theory of stress-strain state and their interaction with structures. He studies the basic methods for determining the sedimentation of foundations, the stability of slopes and slopes, as well as the morphology, dynamics and regional features of the upper horizons of the Earth's crust (lithosphere) and their relationship with engineering structures. It is important to correctly determine the physical, mechanical, and hydrological properties of the soils at the construction site (density, strength, subsidence, groundwater level, seismic activity, and other characteristics).	Theoretical Mechanics, Fundamentals of Classical Mechanics, Resistance of materials, Applied Mechanics, Engineering Geology, Hydrogeology and soil mechanics,	Design and calculation of reinforced concrete structures, Design and calculation of metal structures, Design and calculation of special structures, Technology of construction production 1,2,3, Reconstruction of buildings and structures
		Electrical engineering and the basics of electronics	120	4	7	LO1	Formation of basic knowledge and skills in the field of electrical engineering and the basics of electronics. The laws of electrical circuits, principles of operation of electrical machines and apparatuses, as well as elements and circuits of analog and digital electronics are studied. The basics of measuring electrical quantities, safety when working with electrical installations, and the use of electrical equipment in construction and other industries are considered.	Construction physics, Building materials, Architectural design of buildings and structures, Engineering graphics and computer modeling,	Occupational safety and health, Reconstruction of buildings and structures, Regulatory and technical documentation in construction.

		Hydraulic engineering calculations and measurements					Formation of knowledge and skills in performing electrical calculations of construction facilities. The methods of calculating electrical loads, the choice of cable lines, protection devices and grounding systems are being studied. Power supply schemes, calculation of short-circuit currents, ensuring electrical safety and reliability of power supply are considered. Special attention is paid to the application of regulatory documents and software tools in the design of power grids of buildings and structures.	Construction physics, Building materials, Architectural design of buildings and structures, Engineering graphics and computer modeling,	Occupational safety and health, Reconstruction of buildings and structures, Regulatory and technical documentation in construction.
BD	KV	Managerial economics	90	3	6	LO 7	Formation of the conceptual framework and development of economic analysis skills using modern models and patterns of economics, consideration of economic problems and tasks facing the head of the company. Studying this discipline will allow students to acquire and develop knowledge in the field of analytical research of economic, technological and technical parameters of an enterprise, as well as to master the skills of applying special methods of economic justification of management decisions and assessing their consequences.	Environmental sustainable technologies, Fundamentals of financial literacy,	Construction production technology 3, Technical operation of buildings and structures, Engineering systems and networks of buildings and structures, Organization of construction production
BD	KV	Time management					The discipline studies a system of methods, tools and approaches that are aimed at effective time management in order to achieve the tasks set. The course is designed to improve the skills of organizing and optimizing the use of working time, increase work productivity, reduce stress, planning, delegation, use of tools and technologies, as well as to know your time and energy rhythms in order to use your time effectively.	Environmental sustainable technologies, Fundamentals of financial literacy,	Construction production technology 3, Technical operation of buildings and structures, Engineering systems and networks of buildings and structures, Organization of construction production
BD	KV	Computer-aided design of buildings	120	4	8	LO 4. 9	The use of computer technologies (CAD, CAD) to create design documentation and 3D models. It allows you to automate the creation of	Digital inclusion, Information and communication	Minor program Final assessment. 3

		and structures					drawings, preparation of project documentation and other operations.	technologies, Engineering graphics and computer modeling	
		Computer-aided design systems for buildings and structures					Software that implements information technology for performing design functions is an organizational and technical system designed to automate the design process, consisting of personnel and a set of technical, software and other automation tools for its activities.	Digital inclusion, Information and communication technologies, Engineering graphics and computer modeling	Minorprogram 3 Finalassessment.
BD	KV	Engineering systems and networks of buildings and structures	120	4	7	LO10	Formation of knowledge and skills in the field of design, installation and operation of engineering systems and networks of buildings and structures. The systems of water supply, sewerage, heating, ventilation, electricity, low-current and automated systems are being studied. The issues of energy efficiency, reliability, safety and sustainable functioning of engineering networks, as well as compliance with current regulations and requirements of technical operation are considered.	Engineering Mathematics 1,2, Construction Physics, Construction Chemistry, Building materials, Architectural design of buildings and structures, Technology of construction production 1	Occupational safety and health, Technical operation of buildings and structures
		Technological reliability of main pipelines					Formation of basic knowledge and skills in the field of water supply, sanitation, heat and gas supply and ventilation. The principles of designing, calculating and operating engineering systems that ensure the comfort and safety of buildings are studied. Network schemes, equipment selection, issues of energy efficiency, reliability and environmental friendliness are considered. Special attention is paid to the requirements of regulatory documents and technical solutions for various types of buildings and structures.	Engineering Mathematics 1,2, Construction Physics, Construction Chemistry, Building materials, Architectural design of buildings and structures, Technology of construction production 1	Occupational safety and health, Technical operation of buildings and structures
BD	KV	Construction machinery and equipment	120	4	4	LO 8	Studies the general devices of construction machinery, lifting and transport machinery, machinery for excavation and preparatory work, machinery for crushing and sorting stone materials, machinery and equipment for the	Engineering Mathematics 1,2, Building Physics, Building Chemistry, Building Materials, Engineering Geodesy,	Technology of construction production 1, 2,3, Foundations and foundations, Electrical engineering and fundamentals of electronics,

							preparation of concrete mixtures and mortars and their transportation, machinery and equipment for the distribution and compaction of concrete mixtures, mechanized tools. The discipline uses discussion		Reconstruction of buildings and structures, Technology of construction of high-rise buildings, Organization of construction production
		Machines and mechanisms in pipeline construction					Forms a systematic understanding of the mechanization of construction processes and the variety of construction machinery. It covers issues related to drives and running gear, lifting and transport equipment, machines for excavation, drilling and piling operations, equipment for the preparation, transportation and compaction of concrete and mortars, as well as equipment for finishing work. The course uses a computational and analytical method to study the technical characteristics and operating principles of construction machinery.	Engineering Mathematics 1,2, Building Physics, Building Chemistry, Building Materials, Engineering Geodesy,	Technology of construction production 1, 2,3, Foundations and foundations, Electrical engineering and fundamentals of electronics, Reconstruction of buildings and structures, Technology of construction of high-rise buildings, Organization of construction production
BD	KV	Technology of construction of high-rise buildings	180	6	7	LO7	Formation of knowledge and practical skills in the field of technology for the construction of high-rise buildings. The features of construction processes at different stages, methods of organizing work in cramped conditions, the use of special equipment, modern building materials and technologies are studied. The issues of ensuring safety, quality, stability of structures and compliance with regulatory requirements during the construction of high-rise buildings are considered.	Engineering geodesy, Building materials, Architectural design of buildings and structures, Geology and mechanics of soils, Foundations and foundations, Construction machinery and equipment, Building structures, Technology of construction production 1, 2,	Occupational safety and health, Reconstruction of buildings and structures, Organization of construction production, Technical operation of buildings and structures,
		Technological processes of construction of high-rise buildings					In-depth knowledge and practical skills are being developed in the field of designing and organizing technological processes in the construction of high-rise buildings. The principles of developing technological maps, choosing the optimal sequence of work, calculating labor costs and the duration of	Engineering geodesy, Building materials, Architectural design of buildings and structures, Geology and mechanics of soils, Foundations and	Occupational safety and health, Reconstruction of buildings and structures, Organization of construction production, Technical operation of buildings and structures,

							construction stages are studied. The interaction of various types of work (excavation, concrete, installation, finishing), logistics of material flows, the use of modern technology, automation and digital technologies, including BIM, is analyzed. Attention is paid to risk assessment, increasing the efficiency and sustainability of processes in conditions of dense urban development. Mastering the material makes it possible to develop and justify technological solutions that ensure safety, quality and economic efficiency in the construction of high-rise buildings.	foundations, Construction machinery and equipment, Building structures, Technology of construction production 1, 2,	
BD	KV	Organization and planning of construction of buildings and structures	150	5	8	LO8	Develops knowledge and skills necessary for effective management of civil and industrial facilities construction processes. It includes planning, coordination and control of all stages of project implementation — from the development of project documentation to the commissioning of facilities. Special attention is paid to meeting deadlines, budgets and safety standards, as well as minimizing risks and rational use of resources.	Engineering geodesy, Building materials, Architectural design of buildings and structures, Foundations and foundations, Construction machinery and equipment, Building structures, Technology of construction production 1, 2, 3	Technical operation of buildings and structures, Industrial practice 2/ Pre-graduate practice, Final certification
		Organization of construction production					It forms the knowledge and skills necessary for effective management of construction processes. It covers the planning, organization, coordination and control of all stages of construction production, as well as the management of resources, personnel and time parameters of the project. The main objective is to ensure high-quality, safe and timely execution of construction works while optimizing costs and minimizing risks arising during the implementation of the project.	Engineering geodesy, Building materials, Architectural design of buildings and structures, Foundations and foundations, Construction machinery and equipment, Building structures, Technology of construction production 1, 2, 3	Technical operation of buildings and structures, Industrial practice 2/ Pre-graduate practice, Final certification
		Diagnostics of buildings and	150	5	9	LO7	Formation of knowledge and skills necessary to assess the technical condition of civil and	Engineering geodesy, Building materials,	Pre-graduate practice, Final certification

BD	KV	structures					industrial facilities. This includes the study of methods and tools for diagnosis, control and monitoring of the condition of structures, equipment and systems used in the oil and gas industry. An important task is to identify defects, corrosion, cracks and other damages at an early stage, which helps prevent accidents, improve operational safety and extend the service life of facilities.	Architectural design of buildings and structures, Foundations and foundations, Construction machinery and equipment, Building structures, Technology of construction production 1, 2, 3	Pre-graduate practice, Final certification
		Inspection and testing of buildings and structures					Formation of knowledge and skills necessary for conducting regular inspections, diagnostics and monitoring of the condition of civil and industrial facilities. This includes the study of control methods and technologies aimed at timely detection of defects, damage and wear of structures, equipment and systems. An important task is to ensure the safety of operation, prevent accidents and breakdowns, as well as optimize maintenance and repair processes in order to increase the service life of facilities and minimize the cost of their operation.	Engineering geodesy, Building materials, Architectural design of buildings and structures, Foundations and foundations, Construction machinery and equipment, Building structures, Technology of construction production 1, 2, 3	
BD	KV	Information modeling technology in architecture and construction	90	3	7	LO4	The application of the process of creating digital 3D models of buildings, including architectural, engineering and other data. This model serves as a single source of information about the project at all stages of its life cycle, from design to operation.	Engineering graphics and computer modeling, Information and communication technologies	Occupational safety, Maintenance and repair of oil and gas pipelines, Pipeline transportation of oil and gas, Production practice 2
		Minor program 1					The first of the three disciplines, which allows you to form additional professional competencies in various subject areas. The program allows you to study disciplines in another field of knowledge that complements their main specialization (major). This helps to develop interdisciplinary thinking and provides an opportunity to gain additional skills and knowledge that may be useful in the future. In general, the aim is to provide students with the	History of Kazakhstan, Kazakh (Russian, foreign) language, Professional foreign language, Sociology, Cultural studies, Political Science, Psychology	Occupational safety, Maintenance and repair of oil and gas pipelines, Pipeline transportation of oil and gas, Production practice 2

							opportunity to expand their professional training, improve interdisciplinary skills and increase their competitiveness in the labor market.		
BD	KV	Regulatory and technical documentation in construction	90	3	8	LO9	Develops the knowledge and skills necessary to understand and apply the regulatory and technical documentation governing the design, construction, operation and safety of civil and industrial facilities. It includes the study of standards, technical regulations, norms and rules, as well as mastering the skills of working with various types of documentation that ensure compliance with legal requirements, industrial safety and quality at all stages of the life cycle of oil and gas industry facilities. Special attention is paid to preparing for the correct interpretation and implementation of regulatory requirements to ensure safe, efficient and environmentally sustainable activities in the industry.	Building materials, Architectural design of buildings and structures	Technical operation of buildings and structures, Industrial practice 2/ Pre-graduate practice, Diagnostics of buildings and structures, Estimated pricing in architecture and construction, Final certification
		Minorprogram 2					The second of the three disciplines, which allows you to form additional professional competencies in various subject areas. The program helps to develop skills that are useful in various professions, such as analytical skills, information processing, critical thinking and creativity. This makes students more flexible and ready to solve complex problems in different fields and at that time.		
BD	KV	Estimated pricing in architecture and construction	90	3	9	LO7	The discipline studies the formation of knowledge and skills related to the process of determining the cost of construction, repair and reconstruction of facilities based on the calculation of all costs associated with the performance of work and the use of materials. Estimated pricing includes the development of estimates that help to accurately plan costs, assess the financial needs of the project and	Fundamentals of financial literacy, Building materials, Architectural design of buildings and structures, Managerial economics, Construction production technology	Final certification

							effectively manage resources at all stages of construction.	1,2,3, Reconstruction of buildings and structures, Construction machinery and equipment	
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		Minor program 3					The third of the three disciplines, which allows you to form additional professional competencies in various subject areas. Provides an opportunity to master an additional field of knowledge that complements the basic professional training. Promotes the formation of a holistic and multidisciplinary education by integrating knowledge from related disciplines with the main specialization in the oil and gas industry.	History of Kazakhstan, Kazakh (Russian, foreign) language, Professional foreign language, Sociology, Cultural studies, Political Science, Psychology	Final certification
BD	KV	Service to society	30	1	1	LO 11	Формирует знания и навыки, необходимые для активного участия в жизни общества. Особое внимание уделяется служению обществу — добровольной деятельности, направленной на благо других людей и социума в целом. Это может проявляться в помощи нуждающимся, участии в благотворительных и волонтерских инициативах, защите окружающей среды, а также в деятельности в сферах образования, здравоохранения и культуры. Подобные формы социальной активности способствуют развитию ответственности, гуманности и гражданской позиции.		
		Business communications					It forms the knowledge and skills necessary for successful interaction in a professional environment. Special attention is paid to the exchange of information in the business sphere in order to achieve common goals. Business communications include both oral and written communication that takes place both within an organization (internal communications) and outside it (external communications). Effective mastery of these skills contributes to productive work, mutual understanding and the development of business relationships.		

Head of the Department of Architectural and Construction Engineering,



10.EXPERT CONCLUSIONS

ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ

на образовательную программу «6B07347 – Цифровое строительство и BIM-технологии»

Реализация образовательной программы «6B07347 – Цифровое строительство и BIM-технологии» осуществляется посредством последовательности изучаемых дисциплин, с установлением конкретных задач и целевых индикаторов. Четко прослеживается междисциплинарное взаимодействие, которое заключается в комплексной связи между содержанием отдельных учебных дисциплин, посредством которых достигается внутреннее единство программы подготовки специалистов.

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.

Цель образовательной программы актуальна, сформулирована достаточно лаконично и объединяет в себе результаты обучения. В описании дисциплин отражены их цели и содержание, как индикатора достижения результатов обучения по данной образовательной программе. Также представлены: рабочий учебный план, рабочие программы учебных дисциплин, методических и других материалов, обеспечивающих качество подготовки обучающихся.

Следует отметить, что созданы условия для максимального приближения системы оценки и контроля компетенций студентов-бакалавров к условиям их будущей профессиональной деятельности. С этой целью кроме преподавателей конкретной дисциплины в качестве внешних экспертов активно используются работодатели.

Считаю, что структура и содержание образовательной программы «6B07347 – Цифровое строительство и BIM-технологии» имеет направленность на удовлетворение потребностей рынка труда и работодателей, соответствует аналогичным образовательным программам Европейского образовательного пространства и позволяет достичь ожидаемых результатов обучения.

Эксперт
Директор ТОО «РМ Компани ЛТД»



Р.Р.Бугыбаев

EXPERT CONCLUSIONS

ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ на образовательную программу «6B07347 – ЦИФРОВОЕ СТРОИТЕЛЬСТВО И BIM-ТЕХНОЛОГИИ»

Реализация образовательной программы «6B07347 – Цифровое строительство и BIM-технологии» осуществляется посредством последовательности изучаемых дисциплин, с установлением конкретных задач и целевых индикаторов. Четко прослеживается междисциплинарное взаимодействие, которое заключается в комплексной связи между содержанием отдельных учебных дисциплин, посредством которых достигается внутреннее единство программы подготовки специалистов.

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. Актуально изучение вопросов экологической обстановки и обеспечение условий безопасной трудовой деятельности на предприятиях.

Образовательные траектории разработаны в соответствии с запросами гражданского и промышленного строительства в отрасли «Строительство».

Цель образовательной программы актуальна, сформулирована достаточно лаконично и объединяет в себе результаты обучения. В описании дисциплин отражены их цели и содержание, как индикатора достижения результатов обучения по данной образовательной программе. Также, в образовательной программе, разработанной на основе профессионального стандарта, отражены основные трудовые функции в компетенциях и результатах обучения, указаны виды связей с работодателями: проведение гостевых лекций, лекций ведущих топ менеджеров, наличие филиалов кафедр на базе организаций.

Таким образом, представленная на экспертизу образовательная программа «6B07347 – Цифровое строительство и BIM-технологии» по направлению подготовки кадров «6B073 – Архитектура и строительство», полностью соответствует требованиям ГОСО, имеет четкую последовательность при разработке, отвечает современным запросам рынка труда, профессиональным стандартам и может быть реализована для подготовки кадров по образовательной программе «6B07347 – Цифровое строительство и BIM-технологии» по направлению «B074 – Градостроительство, строительные работы и гражданское строительство».



Директор ТОО «ПрофиПГС» Какенов Е.Н.

11. REVIEWER'S CONCLUSION

Рецензия

на образовательную программу
по направлению подготовки «6В07347 – Цифровое строительство и BIM-технологии»

Образовательная программа (бакалавриат) «6В07347 – Цифровое строительство и BIM-технологии» содержит комплекс учебно-методических документов, отражающих цели, задачи, формируемые компетенции следующую информацию: квалификация выпускника, форма и срок обучения, направление и характеристика деятельности выпускников, приведен полный перечень компетенций выпускников, формы контроля знаний, включая итоговую аттестацию.

Дисциплины учебного плана по рецензируемой образовательной программе формируют весь необходимый перечень общекультурных, общепрофессиональных и профессиональных компетенций, а также развитие у них личностных качеств.

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.

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 компетентности модели выпускника.

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

В целом, считаю, что рецензируемая образовательная программа подготовлена качественно, на высоком теоретическом и практическом уровне, и соответствует предъявляемым требованиям.

Рецензент
Главный инженер
ТОО «РМ Компани ЛТД»



Оналбай М.М.

12.LETTERS OF RECOMMENDATION

TOO «СК ARTIFEX»

Уважаемый (ая) Меруерт Советовна

Руководство TOO «СК ARTIFEX» в лице директора Кусаинова Салтанат Темирхановна, ознакомилось с содержанием образовательной программы «Б07347 – Цифровое строительство и BIM-технологии» и внесло следующие рекомендации:

- увеличить количество часов, выделяемых на проведение части лабораторных и практических занятий на базах работодателей с целью формирования определенных видов профессиональных компетенций;
- актуализировать содержание образовательных программ путем включения в цикл базовых и профилирующих модулей дисциплины, отражающие современные инновационные технологии в строительной сфере.
- увеличить количество часов, выделяемых на проведение производственных практик.

Предлагается включить следующие дисциплины:

1. Архитектурное проектирование зданий и сооружений с применением BIM-технологий;
2. Проектирование и расчет железобетонных конструкций с применением BIM-технологий;
3. Техническая эксплуатация зданий и сооружений.

Работодатель



TOO " СК ARTIFEX "Директор Кусаинова С.Т.

ТОО «BAISANAT GROUP»

Уважаемый (ая) Меруерт Советовна

Руководство ТОО «BAISANAT GROUP» в лице директора Қазыбек Ә.А., ознакомилось с содержанием образовательной программы «6B07347 – Цифровое строительство и BIM-технологии» и внесло следующие рекомендации:

- включить в содержание образовательной программы дисциплины: Основы нефтегазового дела.
- увеличить количество часов, выделяемых на проведение части лабораторных и практических занятий на базах работодателей с целью формирования определенных видов профессиональных компетенций;
- актуализировать содержание образовательных программ путем включения в цикл базовых и профилирующих модулей дисциплины, отражающие современные инновационные технологии в сфере строительства. Предлагается включить следующие дисциплины:

1. Архитектурное проектирование зданий и сооружений с применением BIM-технологий;
 2. Проектирование и расчет железобетонных конструкций с применением BIM-технологий;
 3. Техническая эксплуатация зданий и сооружений.
- увеличить количество часов, выделяемых на проведение производственных практик;

включить дисциплины:

- Архитектурное проектирование зданий и сооружений с применением BIM-технологий;
- Проектирование и расчет железобетонных конструкций с применением BIM-технологий;
- Техническая эксплуатация зданий и сооружений.

Работодатель



Директор ТОО «BAISANAT GROUP»

Қазыбек Ә.А.

Уважаемый (ая) Меруерт Советовна

Руководство ТОО «Dezi Invest» в лице директора Нурмуканова А.К. ознакомилось с содержанием образовательной программы «6B07347 – Цифровое строительство и BIM-технологии» и внесло следующие рекомендации:

- включить в содержание образовательной программы дисциплины: Основы нефтегазового дела.

- увеличить количество часов, выделяемых на проведение части лабораторных и практических занятий на базах работодателей с целью формирования определенных видов профессиональных компетенций;

- актуализировать содержание образовательных программ путем включения в цикл базовых и профилирующих модулей дисциплины, отражающие современные инновационные технологии в строительной сфере.

Предлагается включить следующие дисциплины:

1. Архитектурное проектирование зданий и сооружений с применением BIM-технологий;

2. Проектирование и расчет железобетонных конструкций с применением BIM-технологий;

3. Техническая эксплуатация зданий и сооружений.

- увеличить количество часов, выделяемых на проведение производственных практик.

включить дисциплины:

- Архитектурное проектирование зданий и сооружений с применением BIM-технологий;

- Проектирование и расчет железобетонных конструкций с применением BIM-технологий;

- Техническая эксплуатация зданий и сооружений.

Работодатель



Директор ТОО «Dezi Invest» Нурмуканов А.К.

Academy of Logistics and Transport

PROTOCOL №7

Meetings

Des akademischen Ausschusses für das Bildungsprogramm und der führenden Lehrer des Lehrstuhls "Architektonisch-Bauingenieurwesen»

city of Almaty

«18» 02 2025 year

Chairman: Kulmanov K.S.

Secretary: Begezhanova G.S.

Attended by: Head of the Department of "ASI" Ph.D., Assoc.Professor Kulmanov K.S., Candidate of Technical Sciences, associate professors: Bondar I.S., Espayeva G.A., Tursumbekova H.S., Candidate of Technical Sciences, assistant professors: Dyusengalieva T.M., Uteshbaeva A.A., Dzhaksenbaev E.K., Murzalina G.B., Dzhumagaliyev T.K., senior lecturers; Zhigitbaeva B.E., Suleimenov I.T., Kalpenova Z.D., Karimova M.B.

Representatives from the production: Head of the Monolithic Concrete sector at JSC «KazRICA» Kuralov A.S., Director of CK ARTIFEX LLP Kusainova S.N., Director of Baisanat GROUP LLP Kazybek A.A. Director of Dezi Invest LLP Nurmukanov A.K., Director of RM Company ATD LLP Bugybayeva R.R., Chief Engineer RM Company ATD LLPM., Director of ProfiPGS LLP Kakenov E.N.

AGENDA:

1. Consideration of the graduate's competence model
 2. Consideration of the possibility of including disciplines in QED and RUP
- On the first question

MADE A SPEECH:

The head of the department, K.S. Kulmanov, proposed to consider the graduate's competence model at 3 levels of education: bachelor's degree, master's degree, doctoral degree.

The graduate's competence model includes the following parts:

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

PERFORMED:

Representative of employers: Kazybek A.A., who proposed, due to the specifics of their organization, to reflect the following in the objects of professional activity under OP 6B07347 – Digital construction and BIM technologies: Modern innovative technologies in the construction industry. **THE SPEAKER was:**

Department member G.B. Murzalina proposed to review and approve the competency-based Model of a graduate for 3 levels of education.

THEY DECIDED:

- provide a graduate's competence model for 3 levels of education: Bachelor's degree, Master's degree, doctoral degree for consideration and approval by the Council of the Institute of Transport and Construction.

On the second question

MADE BY: Head of the department K.S. Kulmanov with a proposal to hear representatives of employers and trainees on the inclusion of new disciplines in the CAD and RUP of admission in 2025.

MADE BY: A.K. Nurmukanov, a representative of employers and director of Dezi Invest LLP, noted that organizations are interested in specialists with a good level of training and knowledge in the field of construction of industrial and civil buildings and structures. We propose adding the following in-demand disciplines to the RUP: Reconstruction of buildings and structures using BIM technologies; Design and calculation of special structures using BIM technologies; High-rise building construction technology; Diagnostics of buildings and structures using BIM technologies.

THEY DECIDED:

1. Take the information into consideration;
2. Take into account the suggestions and recommendations of employers and students;
3. Consider including the following disciplines in the curriculum: Reconstruction of buildings and structures using BIM technologies; Design and calculation of special structures using BIM technologies; High-rise building construction technology; Diagnostics of buildings and structures using BIM technologies.

Chairman:

Secretary:

Two handwritten signatures in black ink. The first signature is for Kulmanov K.S. and the second is for Begezhanova G.S.

Kulmanov K.S.

Begezhanova G.S.

**MINISTRY OF EDUCATION AND SCIENCE OF THE REPUBLIC OF KAZAKHSTAN
JSC "ALT UNIVERSITY NAMED AFTER MUKHAMEDZHAN TYNYSHPAYEV"
INSTITUTE OF TRANSPORT AND CONSTRUCTION**

EXTRACT

from the Protocol № 8

of the extraordinary meeting of the Educational and Methodological Bureau (MDB)
of the Institute of Transport and Construction

in Almaty

17 March 2025 y.

Chairman: Abdreshov S.A.

Secretary: Murzalina G.B.

Were present: UMB members, members of the Academic Committee, Representatives from the production: Head of the Monolithic Concrete sector at JSC «KazRICA» Kuralov U.S., Director of CK ARTIFEX LLP Kusainova S.T., Director of BAISANAT GROUP LLP Kazybek A.A., Director of Dezi Invest LLP Nurmukanov A.K., Director of RM Company ATD LLP Bugybayeva R.R., Chief Engineer of BAISANAT GROUP LLPRM Company ATD Onalbai M.M., Director of ProfiPGS LLP, Kakenov E.N.

AGENDA:

1. Discussion of new educational programs for the 2025-26 academic year.

On the issue

WE LISTENED TO: the director of ITiS, Sh.A. Abdreshov, who proposed to consider the following sections of educational programs for admission in 2025: the graduate's competence model and educational program passports, as well as work curricula, catalogs of the university component (CVK) and catalogs of elective disciplines (CED).

PERFORMED:

1) The head of the department, K.S. Kulmanov, who presented for consideration the sections of the new educational program 6B07347 – Digital construction and BIM technologies for admission in 2025: the graduate's competence model, the passport of the educational program, as well as the working curriculum, the catalog of the university component (CVK) and the catalog of elective disciplines (CED).

In connection with the opening of a new group of educational programs B074-Urban planning, construction work and civil engineering, the materials submitted for consideration were developed. A meeting of the Academic Committee on Educational Programs and leading teachers of the department was held at the Department of Architectural and Construction Engineering with the involvement of representatives of employers and students to discuss the structure and content of the new educational program. Following the discussion, a positive decision was made to approve them.

The presented materials were developed with the participation of employers, students and graduates, taking into account the requirements of regulatory legal acts. The working curriculum and CED for admission in 2025 have been drawn up and agreed with employers.

THEY DECIDED:

1. To approve the presented new educational program 6B07347 – Digital construction and BIM technologies for admission in 2025, including the Graduate's Competence Model, QED, QVC, work curriculum and educational program passport.

2. Submit these documents for consideration and approval by the Academic Council of the University.

Chairman of UDB ITiS

Secretary of UDB ITiS



Abdreshov S.A.

Murzalina G.B.

14. APPROVAL SHEET

No	Full name	Place of work/study	Post	Date of approval	Signature
	Сунеева Н.З	ИУиС	Директор	18.02.2025	[Signature]
	Дзюбаев К.М	ИУиС	Директор	18.02.2025	[Signature]
	Холмешев Д.Т	ИУиС	Head of dep.	18.02.2025	[Signature]
	Исраилов А.А	ИУиС	Head of dep.	18.02.2025	[Signature]
	Ахметов И.И.	ИУиС	Head of dep.	18.02.2025	[Signature]
	Зайтеева Ф.И.	ИУиС	Head of LE department	18.02.2025	[Signature]
	Исраилов Р.Д	каф. ИУиС	зав. каф.	18.02.2025	[Signature]
	Табатабаев А.Б.	каф. ИУиС	зав. каф.	18.02.2025	[Signature]
	Карабаева Г.В.	каф. ИУиС	зав. каф.	18.02.2025	[Signature]
	Султанов Х.С.	каф. ИУиС	зав. каф.	18.02.2025	[Signature]
	Тайжанов А.А.	ИУиС	Директор	18.02.2025	[Signature]
	Евсеева А.Т.	ИУиС	зав. каф.	18.02.2025	[Signature]

15. CHANGES REGISTRATION SHEET

№	Section, paragra ph of the docume nt	Type of change (replace, cancel, add)	Number and date of notification	Change made	
				Date	Surname and initials, signature, position