

**Joint Stock Company Academy of Logistics and Transport**



**APPROVING IT**  
US ALT ot solution  
city of (Protocol no. 5)  
President-Rector  
Amirgalieva S. N.

**EDUCATIONAL PROGRAM**

**Name: 6B07330 -ARCHITECTURE OF BUILDINGS AND  
STRUCTURES**

**Level of training: Bachelor's degree**

**Code and classification of training areas: 6B073-Architecture and Civil  
engineering**

**Code and group of educational programs: B073-Architecture**

**Registration date in the register: 05.12.2022**

**Registration number: 6B07300183**

**Almaty, 2023**

## CONTENT

1. Information about the review, approval and approval of the program, developers, experts and reviewers	3
2. Regulatory references	4
3. Passport of the educational program	5
4. Competence model of the graduate	6
5. Matrix of correlation of learning outcomes in the educational program with academic disciplines / modules	10
6. Structure of the bachelor's degree program	13
7. Working curriculum for the entire period of study	14
8. Catalog of university component disciplines	16
9. Catalog of elective component disciplines	22
10. Expert opinions	30
11. Reviewer's conclusion	31
12. Recommendation letters	32
13. Review and approval protocols	33
14. Approval sheet	36
15. Change registration sheet	37

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

## 1 DEVELOPED:

Assistant Professor

(position)

Head of PCH-46, art. Alm

(position)

Assistant Professor

(position)

Associate Professor

(position)

Student gr. ZPPH-21-1p

(position)

(signature)

(signature)

(signature)

(signature)

(signature)

Karibayeva G. B.

(Full name)

D. G. Amirov

(Full name)

Ismagulova S. O.

(Full name)

A. K. Ibraimov

(Full name)

Kannazarova A.

(Full name)

## 2 EXPERTS:

Director of the branch of JSC NC

"KTZ" - "Almaty branch of the backbone network"

(position)

Head of the Track Department of

the branch of JSC NC "KTZ" -

"Almaty branch of the main

network"

(position)

(signature)

(signature)

(signature)

(signature)

Zheksenbiev A. T.

(Full name)

Nurbolat R. V.

(Full name)

## 3 REVIEWER:

Candidate of Technical Sciences,

Associate Professor, KazNTU

named after K. I. Satpayev

(position)

(signature)

Dzholdasova K. K.

(Full NAME)

## 4 REVIEWED AND

## RECOMMENDED:

AC meeting (department) «...»

Protocol № 6 « 15 » 03 2023г

COC-UMB meeting «...»

Protocol № 7 « 15 » 03 2023г

EMC meeting

Protocol № 4 « 29 » 03 2023г

(signature)

(signature)

(signature)

(signature)

Ismagulova S.O

(FULL NAME)

Chigambayev T.O

(FULL NAME)

Zharmagambetova M.S.

(FULL NAME)

**5 APPROVED** by the decision of the Academic Council dated « 20 » 03 2023г. № 13

**6 UPDATED** 28.0.04.2023.2023

## **2. REGULATORY REFERENCES**

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

1. Law of the Republic of Kazakhstan "On Education" dated July 27, 2007 No. 319-III (with amendments and additions as of January 08, 2021).
2. National Qualifications Framework approved by the protocol of March 16, 2016 of the Republican Tripartite Commission on Social Partnership and Regulation of Social and Labor Relations.
3. Industry framework of qualifications in the field of "Education", approved by the Minutes of the Meeting of the Industry Commission of the Ministry of Education and Science of the Republic of Kazakhstan on social partnership and regulation of social and labor relations in the field of education and Science No. 3 dated November 27, 2019.
4. State mandatory Standard of Higher Education (Appendix 7 to the Order of the Minister of Education and Science of the Republic of Kazakhstan dated October 31, 2018 No. 604 with amendments and additions as of May 05, 2020).
5. Qualification directory of positions of managers, specialists and other employees, approved by Order No. 553 of the Minister of Labor and Social Protection of the Population of the Republic of Kazakhstan dated December 30, 2020.
6. Rules of organization of the educational process on credit technology of training, approved by the Order of the Minister of the Ministry of Education and Science of the Republic of Kazakhstan No. 152 dated 20.04.2011. (with additions and amendments No. 563 dated October 12, 2018).
7. Classifier of training areas for personnel with higher and postgraduate education, approved by Order No. 569 of the Minister of Education and Science of the Republic of Kazakhstan dated October 13, 2018 (with amendments and additions as of June 05, 2020).
8. Algorithm for inclusion and exclusion of educational programs in the Register of Educational programs of Higher and Postgraduate Education, approved by Order No. 665 of the Minister of Education and Science of the Republic of Kazakhstan dated December 4, 2018 (with additions and amendments as of December 22, 2020).
9. RI-ALT-33 "Regulations on the procedure for developing an educational program for higher and postgraduate education".
10. Atlas of New Professions: "Specialist in renovation in construction".

### 3. PASSPORT OF THE EDUCATIONAL PROGRAM

№	Field name	Note
1	Registration Number	6B07300183
2	Code and classification of the field of education	6B07-Engineering processing and construction industries
3	Code and classification of training	areas6B07 3-Architecture and construction
4	Code and group of educational programs	B073 -Architecture
5	Name of the educational program	6B07330- Architecture of buildings and structures
6	Type of OP	New
7	Goal of OP	Training of specialists who have professional competencies in the field of architectural design of buildings, structures, objects, who are able to develop design and working technical documentation, conduct author's supervision during project implementation
8	ISCED level	6
9	NRC level	6
10	ORC level	6
11	Distinctive features of the OP	No
	Partner University (SOP)	-
	Partner University(DDOP)	-
12	Form of training	Full
13	-time course Language of study	Kazakh, Russian
14	Amount of credits	300
15	Academic degree awarded	Bachelor of Arts in the educational program "6B07330-Architecture of buildings and structures"
16	Availability of an appendix to the training license	KZ12AA00025205 (010)
17	Availability of accreditation OP	
	Name of the accreditation body	
	Duration of accreditation	

## **4. GRADUATE COMPETENCE MODEL**

### **Objectives of the educational program:**

1. OEnsure that the necessary professional competencies, knowledge and practical skills are obtained for performing labor functions in the field of architecture and construction in accordance with the qualification framework of an architect specialist in the Republic of Kazakhstan;
2. To ensure theadaptation of higher education in the specialty and scientific research to the changing needs of society and the achievements of scientific thought;
3. Totrain a responsible, moral, creative specialist who is able to make innovative decisions and create a comfortable, high-tech, harmonious material environment for people;
4. Totrain highly qualified, competitive specialists in the field of architecture who are in demand domestic and international labor markets.
5. In practice, implement democratic principles of educational process management, expand academic freedom and opportunities of higher education institutions

### **Learning outcomes:**

PO1 -Solve technical and applied problems taking into account the laws, theories of classical and modern physics, mathematics, as well as methods of physical research, thinking using computer technologies and theorems of mechanics in the study of motion and equilibrium of mechanical systems.

PO2 - Choose building materials according to the conditions of their purpose and use, chemical properties and granulometric composition for designing strong, stable and durable planar and spatial reinforced concrete, stone and wooden structures for artistic ideas in capital construction projects.

PO3 - Demonstrate skills in choosing types and categories of architectural drawing, methods and means of visual representation in architectural and construction drawings and architectural graphics, techniques for designing the architectural environment, patterns of perception and construction of color and composition in decorative and applied art (DPI) and design.

PO4 – Organize a geodetic survey of the object using the basics of geoinformatics in design, computer modeling of information and communication technologies for the architectural environment, with the consolidation of theoretical knowledge for further use in practice.

RO5 - Apply the skills of analytical thinking and analysis of economic, technological and industrial problems and tasks facing management and staff, orientation and justification of management decisions and assessment of their consequences, taking into account time resources and protection of constitutional human rights, excluding corruption violations.

PO6 – Install heating, ventilation, gas supply, water supply systems for buildings of various purposes, lighting, landscaping, drainage devices of city streets and roads in compliance with environmental protection with a single control center through a mobile application-household appliances, security system, lighting, climate control, audio system, energy and water supply, fixing skills during practice.

RO7 - Draw up normative and methodological documents on the illumination of highways, ground and underground passages, on the principles of light and color space by scientific research methods that meet the requirements of design and composition aesthetics in architecture, the relationship between sculptural and architectural forms and space.

RO8 - Make architectural projects according to functional, aesthetic, structural and technical, economic requirements, using spatial imagination, creative thinking, innovative solutions using

knowledge of the methodology of territorial zoning and planning the development of settlements, establishing their borders.

RO9 – Practice proficiency in modern computer technology languages and state, Russian and English languages for data analysis, compositional and virtual computer modeling in solving architectural problems, taking into account the natural environment, urban context and internal space of premises using business analytics.

RO10-To justify the choice of interiors of the main premises and elements of public and residential buildings, their comparative analysis and connection with the environment, in compliance with the basics of architectural and design design of interiors, regulatory and technical literature during the period of reconstruction and renovation to improve the architectural and spatial environment and restoration of monuments, with the consolidation of skills during practice.

RO11 – To predict the philosophical and cultural and moral and physical state of the individual in order to study the history of architecture, preserve architectural monuments, and solve problems in landscape and architectural design that meet the aesthetic and regulatory requirements of landscape art and design.

**Area of professional activity:**

- research and design (creation, transformation, preservation, adaptation, use) of a harmonious, comfortable and safe artificial environment and its components, monitoring the implementation of projects;

- \*performing communication and mediation functions to explain and confirm project decisions in the process of communication between the customer, construction contractor, local community and interested parties;

- участие participation in the management of the design process, organization of the project firm's activities, administration of the architectural and design industry and the process of creating an artificial habitat at the local and regional levels

- theoretical understanding, critical analysis and evaluation of architecture as a field of knowledge and activity from the point of view of its prerequisites, methods, results and consequences, expertise of design decisions.

**Objects of professional activity:** The objects of professional activity of graduates are architectural design, organization and management

**Types of professional activity:**

**• production and technological activities:**

- ability to design architectural objects and spaces in accordance with the needs and demands of society;

- ability to develop and present project materials using modern digital technologies;

- use specialized scientific literature in their professional activities;

- apply modern innovative technologies in project proposals, taking into account current trends in the field of architectural and construction design;

**• organizational and managerial activities:**

- ability to organize individual and collective professional activities in the field of architectural design; application of creative thinking to generate promising innovative architectural ideas;

- ability to work in a team and individually, showing communication skills, flexibility of thinking and professional rhetoric; striving for professional and personal growth;

- **design and development activities:**

- ability to develop architectural sections of design and estimate documentation and participate in the development of working design and estimate documentation;
- ability to make decisions on ensuring the functional organization of the environment, taking into account design solutions and engineering systems, integrating innovative technologies into the ideological and figurative design of architectural objects;
- be able to model design solutions, assess problems and trends in development in the field of architecture;

- **scientific and pedagogical activities:**

- work in scientific and educational organizations of architectural, construction and design direction;

**List of specialist positions:**

- architect.
- lighting designer.
- restorer.
- landscape architect.
- менеджер architectural project manager.

**Professional certificates obtained at the end of training:** not provided

**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(art)program
- training (geodetic) system
- production area.
- pre-graduate program.

**Educational practice (art).**

The main objectives of the art practice are to train students in the fields of fine arts: artistic design consolidation of theoretical knowledge and practical skills in the implementation of research and creative work in the field of design and artistic design works in the real educational process, establishing the connection between theory and practice, expanding aesthetic, cultural and professional horizons.

**Educational practice (geodesy).**

During practical training, students should gain an understanding of the role of transport equipment in the country's economy, the diversity of vehicles, the importance of mechanization and automation in increasing labor productivity, as well as an understanding of the main technological processes of operation, maintenance and repair of transport equipment and technology of transport enterprises.

**Production practice 1.**

During the internship period, the student receives certain practical knowledge, skills and abilities in the chosen Educational Program.

The goals of industrial practice are: to deepen and consolidate the theoretical knowledge obtained in the course of training; to gain skills in the practical use of professional knowledge obtained during theoretical training; to learn skills in solving practical and managerial tasks; to get



acquainted with the specifics of the bachelor's professional activity in a particular production; to form professional skills of a specialist, behavior style, and mastering professional ethics.

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

### **Production practice 2.**

The content of practical training is determined by the topic of the thesis (project) or questions of a comprehensive exam. During the production practice period, the student collects factual material about the production (professional) activities of the enterprise (organization) and uses it when developing a diploma project (work). Practice involves working out a given problem (topic of the thesis) on the materials of a specific 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 as a specialist, organizational skills, decision-making skills, executive discipline, responsibility, initiative.

Collects and interprets information for writing an independent paper or taking a comprehensive exam.

**Final certification** is conducted 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 assess the results of training and mastered 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 actual problem in the field of the 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 IN THE EDUCATIONAL PROGRAM WITH ACADEMIC DISCIPLINES/MODULES

№	Name of the discipline	Number of credits	Matrix of correlation of learning outcomes in the educational program with the academic disciplines										
			RO1	RO2	RO3	RO4	RO5	RO6	RO7	RO8	RO9	RO10	RO11
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	History of Kazakhstan	5											+
2	Philosophy	5											+
3	Foreign language	10									+		
4	Kazakh (Russian) language	10									+		
5	Information and communication technologies	5				+							
Module of socio-political knowledge		8											
6	Sociology	2											+
7	Cultural Studies	2											+
8	Political Science	2											+
9	Psychology	2											+
10	Physical education	8											+
Module component of the University		5											
11	Ecology and life safety	5						+					
12	Research Methods	5							+				
13	Fundamentals of Economics and entrepreneurship	5					+						
14	Basics of law and anti-corruption culture	5					+						
15	Engineering mathematics	9	+										
16	Applied physics	9	+										
17	fundamentals of computer simulation	6				+							
18	Building materials	6		+									
19	Art tools and technologies in professional activities of	6			+								
20	Painting and architectural coloring	6			+								
21	Monumental-decorative painting	6			+								
22	Architectural drawing	6			+								
23	Architectural drawing	6			+								

24	Typology of buildings and structures	6		+									
25	Geology, soil mechanics, foundations	6		+									
26	Teaching practice (art)	2			+								
27	Educational practice (survey)	2				+							
28	Engineering mechanics	6	+										
29	Applied mechanics	6	+										
30	Modern computer technology in architectural practice	6				+					+		
31	the Basics VM – technologies in architecture	6									+		
32	Engineering surveying	6				+							
33	Fundamentals of Geoinformatics	6				+							
34	History of architecture	6											+
35	Architectural monuments	6											+
36	Fundamentals of architectural design	6				+							
37	principles of design of architectural environment	6				+							
38	Compositional modeling and animation in architecture and urban planning	6				+					+		
39	Virtual computer simulation in architecture and urban planning	6				+					+		
40	Engineering networks and equipment	6						+					
41	Engineering system	6						+					
42	Light-organization of architectural environment	6							+				
43	Technology light space organization	6							+				
44	Building structures	9		+									
45	Architectural design of public buildings	9				+					+		
46	Architectural design of residential buildings	9									+		
47	Architectural design of industrial buildings and structures	9									+		

48	Architectural design of rural settlements	9							+	+			
49	Landscape architectural design	9											+
50	Reconstruction and renovation of urban areas	6								+		+	
51	Restavracija	6										+	
52	Production practice 1	3						+					
53	Manufacturing practice 2	4										+	
54	interior Design of residential and public buildings	6								+		+	
58	Interior design of buildings	6										+	+
59	Artistic design of interior items	6		+								+	
60	Interior design of premises	6							+			+	
61	Sculpture and sculptural-plastic modeling	6							+				
62	Academic sculpture in architecture	6							+				
63	Aesthetics of architecture and design	6			+				+				
64	Aesthetics of composition design in architecture	6			+				+				
65	Engineering landscaping and transport	6						+					+
66	Land improvement planning	6						+					+
67	Management Economics	3					+						
68	Transport Logistics	3					+						
69	Resource saving in transport	3					+						
70	Time management	3					+						
71	Digital diagnostics of construction sites	3				+	+						
72	Business analytics Power BI	3									+		
73	FINAL CERTIFICATION: Writing and defending a thesis	8	+	+	+	+	+	+	+	+	+	+	+

## 6. STRUCTURE OF THE BACHELOR'S DEGREE PROGRAM

№	a Name	of discipline cyclesTotal labor	
		intensity in academic hours	in academic credits
1	Cycle general education disciplines (OD)	<b>1680</b>	<b>56</b>
1)	<b>Mandatory component</b>	<b>1530</b>	<b>51</b>
	Andhistory of Kazakhstan	150	5
	Philosophy	150	5
	Foreign language	300	10
	Kazakh (Russian) language	300	10
	Information and communication technologies	150	5
	Socio-political knowledge module (sociology, political science, cultural studies, psychology)	240	8
	Physical culture	240	8
2)	<b>University component and (or) elective component</b>	<b>150</b>	<b>5</b>
2	Cycle of basic and profile disciplines (DB, PD)	not less than 7080	not less than 236
1)	<b>University component and / or optional component</b>		
2)	<b>Professional practice</b>		
3	Additional types of training (FEO)		
1)	<b>Optional component</b>		
4	Final certification	not less than 240	not less than 8
	<b>Total</b>	<b>not less than 9000</b>	<b>not less than 300</b>

## 7. WORKING CURRICULUM FOR THE ENTIRE PERIOD OF STUDY

JSC "Academy of Logistics and Transport"

CURRICULUM

APPROVED

By the decision of the ALT Academic Council  
from "20" 2023 d. Protocol no. 15

Chairman of the Academic Council  
S. N. Amiralieva

Form of study: full-time

Training area:  
68073-Architecture and Construction

Group of educational programs:  
68073-Architecture

Name of the educational program:  
6807330-Architecture of buildings and structures

Degree: Bachelor of Engineering and Technology

Admission: 2023

№	Discipline code	Name of cycles and disciplines	Total labor intensity		Form of control, semester	Amount of training load, contact hours						Distribution by semester											Assignment to the department
			in academic hours	in academic credits		Total hours	Classroom settings			SRO	SRO	1st course		2nd course		3rd year		4th year		Course 5			
							lectures	practical	laboratory			1 sem. 15 weeks	2 sem. 15 weeks	3 sem. 15 weeks	4 sem. 15 weeks	5 sem. 15 weeks	6 sem. 15 weeks	7 sem. 15 weeks	8 sem. 15 weeks	9 sem. 15 weeks	10 sem. 15 weeks	11 sem. 15 weeks	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CYCLE OF GENERAL EDUCATION SUBJECTS (OE):																							
1.1.	Required component:		1520	51	13		1520	120	356	15	120	917	21	16	7	7	0	0	0	0	0	0	
1.1.1.	23-0-B-OK-K	History of Kazakhstan	150	5	3		150	30	15		8	97			5								SRSFV
1.1.2.	23-0-B-OK-FU	Philosophy	150	5	4		150	30	15		8	97			5								SRSFV
1.1.3.	23-0-B-OK-FY	Foreign language	300	10	1,2		300		90		16	194	5	5									YAP
1.1.4.	23-0-B-OK-KRYS	Kazakh (Russian) language	300	10	1,2		300		90		16	194	5	5									YAP
1.1.5.	23-0-B-OK-IT	Information and communication technologies	150	5	1		150	30		15	8	97	5										ICTa
1.1.6.	23-0-B-OK-SOS	Socio-political knowledge, module:																					
	23-0-B-OK-SOS	Sociology						7	15		8	30			4								SRSFV
	23-0-B-OK-KSI	Cultural Studies						8	15		8	29											SRSFV
	23-0-B-OK-PSI	Political Science						7	15		8	30											SRSFV
	23-0-B-OK-PSI	Psychology						8	15		8	29											SRSFV
1.1.7.	23-0-B-OK-FK	Physical Culture	240	8	1,2,3,4		240		60		32	120	2	2	2	2							SRSFV
1.2.	Component of your choice:		150	5	1	0	150	30	15	0	8	97	0	0	5	0	0	0	0	0	0	0	
1.2.1.	23-0-B-KV-ESGO	Module of a component for choosing a DSO:																					
	23-0-B-KV-ESGO	Ecology and life safety																					ATSIBZHD
	23-0-B-KV-ESGO	Methods of scientific research																					SRSFV
	23-0-B-KV-GOP	Fundamentals of economics and entrepreneurship	160	5	3		160	30	15		8	97			4								LMT
	23-0-B-KV-GPAK	Fundamentals of law and anti-corruption culture																					SRSFV
TOTAL for the OOD cycle:			1650	56	14	0	1650	150	373	15	128	1014	21	16	12	7	0	0	0	0	0	0	
CYCLE OF BASIC DISCIPLINES (OB):																							
2.1.	University component:		2280	76	13		2280	360	240	120	96	1352	9	15	12	8	12	14	6	0	0	0	
2.1.1.	23-0-B-VK-AR	Engineering Mathematics	270	9	2		270	45	40		8	172			9								CI
2.1.2.	23-0-B-VK-AP	Applied Physics	270	9	1		270	45	30	15	8	172	9										CI
2.1.3.	23-0-B-VK-CKM	Fundamentals of computer modeling	180	6	2		180	30	30		9	112			9								ICTa
2.1.4.	23-0-B-VK-SVIM	Building materials	180	6	3		180	30	15	15	8	112			6								II
2.1.5.	23-0-B-VK-HSTPD	Artistic means and technologies in professional activity	180	6	3		180	30	15	15	8	112			6								II
2.1.6.	23-0-B-VK-ZHAK	Printing and architectural coloration	180	6	4		180	30	15	15	8	112					6						II
2.1.7.	23-0-B-VK-WDZh	Monumental and decorative painting	180	6	5		180	30	15	15	8	112					6						II
2.1.8.	23-0-B-VK-AR	Architectural drawing	180	6	5		180	30	15	15	8	112					6						II
2.1.9.	23-0-B-VK-ARCH	Architectural and construction drawing	180	6	6		180	30	15	15	8	112						6					II
2.1.10.	23-0-B-VK-TZB	Typology of buildings and structures	180	6	6		180	30	30		8	112							6				II
2.1.11.	23-0-B-VK-GWSDP	Geology, soil mechanics, foundations and foundations	180	6	7		180	30	15	15	8	112								6			II
2.1.12.	23-0-B-VK-UPH	Training practice (artistic)	60	2	4		60										2						II
2.1.13.	23-0-B-VK-UPH	Training practice (geodesic)	60	2	6		60												2				II
2.2.	Component of your choice:		1440	48	8		1440	255	150	75	64	896	0	0	6	6	18	6	12	5	0	0	
2.2.1.	23-0-B-KV-MKH	Mechanical Engineering	180	6	3		180	30	30		8	112			6								II
	23-0-B-KV-PN	Applied Mechanics																					II
2.2.2.	23-0-B-KV-SKTAP	Modern computer technologies in architectural practice	180	6	4		180	30	15	15	8	112											ICTa
	23-0-B-KV-COBRTA	Fundamentals of BIM technologies in architecture																					II
2.2.3.	23-0-B-KV-SKOD	Engineering geodesy	180	6	5		180	30	15	15	8	112											II
	23-0-B-KV-GGI	Fundamentals of geoinformatics																					II





## 8. CATALOG OF UNIVERSITY COMPONENT DISCIPLINES

### EDUCATIONAL PROGRAM 6B07330- Architecture of buildings and structures

**Level of education: Bachelor**

**Duration of study: 4 years**

**Year of admission: 2023 years**

Cycle	Component	Name of the discipline	Total labor		intensity Semester	Learning	outcomesBrief description of disciplines	Prerequisites	Prerequisites
			Post-requirements in academic hours	in academic credits					
2	3	4	5	6	7	8	9	10	11
BD	VK	Engineering mathematics	270	9	2	PO1	Mastering the mathematical apparatus for solving theoretical and applied problems of a specific profile, getting an idea of the mathematical field of the University. modeling and interpretation of the obtained solutions. Questions of linear algebra, analytic geometry, mathematical analysis, differential equations, and series theory are considered. Within the framework of the discipline, calculation and graphic work is performed. Active learning methods – teamwork, brainstorming.	Basic school knowledge in mathematics	Engineering mechanics, Applied mechanics
BD	VK	Applied Physics	270	9	1	PO1	Formation of students' skills, skills in the use of fundamental laws, theories of classical and modern physics, as well as methods of physical research, thinking, scientific outlook, in independent cognitive activity, to be able to model physical situations using computer technologies, etc. ideas about the modern natural science picture of the world. Within the framework of the discipline, calculation and graphic work is performed. Laboratory work is performed on the Coursera platform. Active learning methods – teamwork, brainstorming.	Basic school knowledge in physics	Engineering mathematics, Building materials, Geology, soil mechanics, foundations and foundations
BD	VK	Fundamentals of computer modeling	180	6	2	PO4	Competencies are formed about the purpose of modeling tools, technical and software tools, as well as in the development of object models for various purposes, as well as programming languages Python, Java and etc. The discipline uses interactive teaching methods, computational and analytical methods, case-task methods, and game methods.	Information and communication technologies	Modern computer technologies in architectural practice, Fundamentals of BIM technologies in architecture, Compositional modeling and animation in architecture and urban planning, Virtual computer



									modeling in architecture and urban
BD	VK	Building materials	180	6	3	PO2	Forms the basic knowledge about the types of building materials, methods of their production, properties and applications various building materials, familiarization with standard methods of testing building materials and determining their properties, standardization of requirements for building materials depending on the conditions of their use. Within the framework of the discipline, interactive methods are used: case-learning, discussion.	Applied Physics	Monumental and decorative painting, Painting and architectural coloristics, Geology, soil mechanics, foundations and foundations
BD	VK	Artistic means and technologies in professional activity	180	6	3	PO3	The discipline studies project images to develop the skills of a professional artistic language in the technology of professional activity, which helps to express ideas using artistic techniques, evaluate an architectural project using modeling methods and harmonization of an artificial habitat with the help of development of projects based on the analysis of data on similar functional purpose and place of development, conditions of urban design of capital construction objects	Construction materials	Monumental and decorative painting, Painting and architectural coloristics, Architectural drawing, Architectural and construction drawing
BD	VK	Painting and architectural coloristics	180	6	4	RO3	The discipline studies the main painting techniques, tools materials, techniques in designing the architectural environment, patterns of perception and color construction, methods of visual language of academic painting and visual modeling of three-dimensional form and space, types of plastic expression, actual means of development, expression of architectural design developing creative abilities and practical skills in the field of art and architecture. Teaching methods and technologies used: interactive lecture, interactive seminar, case stages and project method. Use of the platform	Building materials, Art tools and technologies in professional activity	Monumental and decorative painting, Painting and architectural coloristics,
BD	VK	Monumental and decorative painting	180	6	5	RO3	The discipline provides for the study of the laws of composition in decorative and applied arts (DPI) and design, what role and significance does a sketch play in the design process? understanding the design and DPI, distinguish between the plastic variety of forms and the ability to embody them in a work, stimulate the form in necessary situations, know the step-by-step construction, consistent methodology for performing a masterpiece in art, various art materials, techniques for depicting monumental and decorative construction. Active learning methods include working together in pairs, groups, and groups, discussions, and role-playing games.	Artistic means and technologies in professional activity, Painting and architectural coloristics	Architectural drawing, Architectural and construction drawing, Typology of buildings and structures
BD	VK	Architectural drawing	180	6	5	RO3	The discipline provides the main types and categories of architectural drawing, methods and means of visual representation, linear-constructive and light-tone modeling of three-dimensional shape and space on a plane, which, in the future, is necessary to increase the author's ability to demonstrate spatial imagination and express it qualitatively the artistic concept of the considered object	Artistic means and technologies in professional activity, Painting and architectural coloristics	Architectural and construction drawing, Typology of buildings and structures, Educational practice (art)

							(object) in its architectural design. The discipline uses interactive teaching methods, calculation and graphic method.		
BD	VK	Architectural and construction drawing	180	6	6	RO3	The discipline considers images in architectural and construction drawings, materials used in construction, their design features and symbols, building shapes, the sequence of architectural and construction drawings, refinement of level marks, architectural graphics, orthogonal drawing, perspective, axonometry, fundamentals of construction theory the main methods of spatial constructions on a plane, the laws of linear perspective, the technique of architectural drawing, knowledge of Eurocodes. Interactive teaching methods and a computational and analytical method are used.	Painting and architectural coloristics, Monumental and decorative painting, Architectural drawing	Architectural design of residential buildings, Architectural design of industrial buildings and structures, Architectural design of rural settlements
BD	VK	Typology of buildings and structures	180	6	6	RO2	Study of types and types of structural and design schemes, design methodology of industrial and civil buildings and structures. Introduction of students to the method of static calculation and construction of basic types in planar and spatial reinforced concrete, stone and wooden structures, their types and methods of reinforcement used for various construction objects. The discipline uses interactive teaching methods, computational and analytical methods, and case-task methods.	Artistic means and technologies in professional activity, Painting and architectural coloristics, Monumental and decorative painting, Architectural drawing	Interior design of residential and public premises, Architectural design of residential buildings, Architectural design of industrial buildings and structures, Architectural design of rural localities
BD	VK	Geology, soil mechanics, foundations and foundations	180	6	7	RO2	Form the necessary set of knowledge about engineering and geological processes and phenomena, soil properties, defects that occur during the joint operation of soils, foundations and foundations, stressed soil conditions of foundations, principles of operation of structures on modern field sites. and laboratory installations and devices, for solving geotechnical problems, about general laws and principles of construction of structures. Guest lectures and the calculation and analytical method are used.	Applied physics, Building materials	Landscape architectural design, Urban reconstruction and renovation, Restoration, Engineering landscaping and transport, Planning of landscaping
BD	VK	Educational practice (art)	60	2	4	PO3	Familiarize with the main conditions for the survey, design, construction and operation of runways and taxiways of airfields, paying attention to pay attention to the construction of unique ground structures that carry out airport activities for airfield support of civil aircraft flights on domestic and international air lines in modern conditions, and instill practical skills in performing calculations when solving transport problems. Interactive teaching methods and a computational and analytical method are used.	Art tools and technologies in professional activity, Building materials	Monumental and decorative painting, Architectural drawing, Architectural and construction drawing
BD	VK	Educational practice (geodesic)	60	2	6	RO4	Studies methods of designing and surveying highways, road drainage and roadbed taking into account the national economic significance of these structures, rules for justifying design standards principles of road tracing, selection of holes for drainage structures,	Engineering geodesy, Fundamentals of Geoinformatics, Fundamentals of	design Engineering networks and equipment, Engineering systems,

							classification of terrain according to the complexity of tracing, sources of dampening of the roadbed, requirements for the efficiency and safety of road transport using computer technologies (Excel, AutoCAD, IndorCAD Road). Guest lectures of specialists are provided.	architectural design, Fundamentals of Architectural environment	Architectural design of public buildings, Architectural design of industrial buildings and structures, Landscape architectural design, Reconstruction and renovation of urban buildings Restoration
PD	VK	Building structures	270	9	4	PO2	Develops basic knowledge of calculation and construction of load-bearing structures using computer technologies (Excel, AutoCAD, Revit). You can also learn how to choose the right materials, shape of cross-sections, design scheme of the structure, based on the purpose and purpose of operation, and develop design solutions for newly constructed or reinforced transport structures. The discipline uses interactive teaching methods, calculation and graphic method.	Engineering mathematics, Building materials Engineering mechanics, Applied Mechanics	Typology of buildings and structures, Architectural design of public buildings, Architectural design of residential buildings, Architectural design of industrial buildings and structures, Architectural design of rural settlements, Landscape architectural design, Reconstruction and renovation of urban areas
PD	VK	Architectural design of public buildings	270	9	6	RO4	Discipline: types of public buildings, their classification, the technological process and its impact on the spatial planning and design solution, methods of engineering surveys, the basics of designing parts and structures in accordance with the terms of reference using standard applied calculation and graphical software packages, and the requirements for the construction industry. The discipline provides software training, computer modeling and practical analysis of results.	Architectural history, Architectural monuments of Building structures, Fundamentals of architectural design, Fundamentals of architectural environment	design Architectural design of residential buildings, Architectural design of industrial buildings and structures, Architectural design of rural settlements, Landscape architectural design
PD	VK	Architectural design of residential buildings	270	9	7	RO8	The discipline is designed to study the development trends of modern architecture and urban planning, design and estimate documentation used in architectural activities, methods and rules of architectural design of residential buildings, aul districts, settlements and districts, design features of a multifunctional residential building with interior decoration, principles and methods of architectural design of reconstruction and restoration of one-story and multi-story residential buildings. The discipline provides software training, computer modeling and practical analysis of results.	Architectural history, Architectural monuments of Building structures, Fundamentals of architectural design, Fundamentals of architectural environment design, Architectural design of public buildings	, Architectural design of industrial buildings and structures, Architectural design of rural settlements, Landscape architectural design, Reconstruction and renovation of urban areas, Restoration

PD	VK	Architectural design of industrial buildings and structures	270	9	8	RO8	The discipline includes theoretical and practical basics of designing industrial buildings, structures and complexes, placement, classification and grouping of enterprises, architectural and planning formation of industrial districts and zones , their impact on the planning structure of cities, construction in extreme conditions, architectural formation of master plans industrial buildings, structural and compositional solutions, issues of economics of design solutions. Guest lectures of specialists are provided.	Building structures, Fundamentals of architectural design, Fundamentals of architectural environmentdesign, Architectural design of public buildings, Architectural design of residential buildings	Landscape architectural design, Reconstruction and renovation of urban areas, Restoration, Engineering landscaping and transport, Planning of landscaping
PD	VK	Architectural design of rural settlements	270	9	8	RO7, RO8 The	Discipline is based on a brief description of the following topics: historical review and prospects for the development of architecture and planning of rural settlements in the unified settlement system, the architectural and planning structure of rural settlements, the organization of transport and pedestrian traffic, the architecture of a public center, the architectural and planning structure of housing construction, the planning of green spaces in the architectural and planning organization of settlements, the characteristic of the suitability of the territory for construction according to natural conditions. Active learning methods – performing individual calculation and graphic tasks.	Building structures, Fundamentals of architectural design, Fundamentals of architectural environmentdesign, Architectural design of public buildings, Architectural design of residential buildings	Landscape architectural design, Reconstruction and renovation of urban areas, Restoration, Engineering landscaping and transport, Planning of landscaping
PD	VK	Landscape architectural design	270	9	9	PO11	The discipline studies the issues of anthropogenic landscape, natural and anthropogenic space, landscaping and landscaping of the environment, settlement system, landscape art and design, formation of landscape organization of space, urban green space system, stylistic methods of landscape design, accounting for sanitary and hygienic factors and rationing of park construction, visual analysis and landscape composition of garden and park objects, the natural component of parks, and artificial components of the landscape environment. The discipline provides software training, computer modeling and practical analysis of the results	,Fundamentals of architectural design of structuralengineering, Fundamentals of architectural environment design, Architectural design of public buildings, Architectural design of residential buildings	Sculpture and sculptural-plastic modeling, Academic sculpture in Architecture, Aesthetics of Architecture and Design, Aesthetics of design and composition in Architecture, Engineering landscaping and transport, Planning of landscaping
PD	VK	Reconstruction and renovation of urban areas	180	6	9	RO8, RO10	Studies the issues of reconstruction of the operated environment, the main provisions of the current system of legislative and regulatory literature in the field of reconstruction and renovation, develops project skills to improve the architectural and spatial environment of residential areas, the citywide center and other public service areas, as well as functional and territorial zones of the established part of the city in order to improve the architectural and spatial environment	Architectural history, Architectural monuments of Building structures, Fundamentals of architectural design, Fundamentals of	Production practice 2, Final certification

							of residential areas. The discipline uses interactive teaching methods.	Architectural environment design,	
PD	VK	Restoration	180	6	9	RO10	The discipline studies the basics of existing and prospective restoration methods, the basics of adaptive techniques, the use of various methods when working on the restoration of monuments, ways to maximize the preservation of authentic elements of the monument, historical information about the structures of ancient buildings and structures, teaches structural strengthening, types of domes, arches and lintels, authentic material in monuments. Interactive teaching methods and a computational and analytical method are used.	Architectural history, Architectural monuments of Building structures, Fundamentals of architectural design, Fundamentals of Architectural environment design,	Production practice 2 Final certification
PD	VK	Production practice 1	90	3	8	RO6	The main tasks of production practice are: consolidation of theoretical knowledge and practical skills in the chosen educational program in production conditions, acquisition of experience in organizational work, obtaining a working specialty, formation of practical skills and competencies in the process of mastering the bachelor's program.	Architectural design of public buildings, Architectural design of residential buildings, Architectural design of rural settlements	Landscape architectural design, Reconstruction and renovation of urban areas, Restoration
PD	VK	Production site practice Practical training 2	120	4	11	RO10	The purpose of bachelor's degree practice is to ensure the relationship between the theoretical knowledge obtained during the assimilation of the chosen educational program and practical activities. The objectives of this practice are to consolidate and deepen the theoretical knowledge gained by students in the course of training, collect information for writing the final qualification work, study best practices at the enterprise, as well as gain experience in independent research work, master various methods of scientific work.	Landscape architectural design, Urban areas reconstruction and renovation, Restoration	andrating certification
<b>Total</b>			<b>4470</b>	<b>149</b>					

## 9. CATALOG OF ELECTIVE COMPONENT DISCIPLINES

### EDUCATIONAL PROGRAM

### 6B07330-Architecture of buildings and structures

**Level of education: Bachelor**

**Duration of study: 4 years**

**Year of admission: 2023 years**

Cycle	Components	Name of disciplines	Total labor		Term	learning outcomes	Short description of the discipline	Prerequisites	Post-prerequisiteslearning outcomes
			in academic hours	in academic credits					
2	3	4	5	6	7	8	9	10	11
ODD	KV	Ecology and life safety	150	5	3	RO6	Study of basic environmental concepts, environmental problems and approaches to their solution, sources and types of environmental pollution by enterprises, principles of regulating the quality of atmospheric air and water, the main provisions of legislation in various fields, natural and man-made emergencies, their causes, methods of prevention and protection. Teaching methods - analysis of specific situations (case-study).	Engineering mathematics, Applied physics	Resource conservation in transport, Landscape architectural design
		Methods of scientific research				RO7	Students gain theoretical and applied knowledge on methods of scientific research of problems in the field under study, train specialists with cognitive skills in the field of science, form deep ideas about the content of scientific activity, its methods and forms of knowledge.	Engineering mathematics, Applied Physics	Typology of buildings and structures, Geology, soil mechanics, foundations and foundations
		Fundamentals of economics and entrepreneurship				RO5	Studies the activities of enterprises in various types of markets, the model of equilibrium and market functioning, state regulation of prices and tariffs. Considers the concept of entrepreneurship and the limits of its legal regulation, conditions for the development of entrepreneurship, organizational and legal forms of doing business, business planning, business secrecy, social responsibility of entrepreneurship. Active learning methods: case studies; business role-playing games, group work.	Engineering Mathematics	Time Management, Managerial Economics, Business Analytics Power BI
		Fundamentals of law and anti-corruption culture				RO5	Improving public and individual legal awareness and legal culture of students, as well as forming a knowledge system and a civic position on combating corruption as an anti-social phenomenon. As a result of studying the course, the student should master the fundamental concepts of law, the constitutional structure of state power of the Republic of Kazakhstan, the rights and freedoms of citizens enshrined in the Constitution, the mechanism and protection of legitimate interests of a person in case of their violation.	Sociology, CulturalStudies, Political Science, Psychology	Management economics, Transport logistics

DB	KV	Engineering mechanics	180	6	3	RO1	Formation of logical thinking and scientific foundation of engineering education. Study of the laws of motion and equilibrium of material bodies, construction of mathematical models of behavior of mechanical systems using theorems of mechanics. Application of methods for studying the equilibrium and motion of mechanical systems for solving technical problems. Active learning methods include the use of interactive tools, a blitz survey – a series of short questions, and performing individual calculation and graphic works.	Engineering mathematics, Applied physics	of Building structures, Light organization of the architectural environment, Technologies of light organization of space
		Applied mechanics				RO1	Studies the theoretical foundations and methods of calculations for strength, rigidity, durability and stability of structural elements of transport structures, the main types of mechanisms, parts and assemblies of machines, general principles of design and construction, which is necessary for the assessment reliability of operating equipment under operating conditions. Active learning methods – performing individual calculation and graphic tasks.	Engineering mathematics, Applied physics	of Building structures, Light organization of the architectural environment, Technologies of light organization
DB	KV	, Modern computer technologies in architectural practice	180	6	4	PO4, PO9	The discipline studies computer technologies in practice, the main directions of their development, CAD capabilities based on ArchiCAD and AutCAD, an overview of opportunities for engineering design and development.- construction design, layout and calculation of engineering equipment in buildings and structures, preparing the territory and working with the general plan of geoinformation systems, solving architectural problems, instills skills in creating an information environment. The discipline provides software training, computer modeling and practical analysis of results.	Information and communication technologies, Fundamentals of computer modeling,	Compositional modeling and animation in architecture and urbanplanning, Virtual computer modeling in architecture and urbanplanning, Digital diagnostics of construction objects
		Fundamentals inIM-technologies in architecture				RO 9	The discipline develops skills in software products, working with BIM elements, digital modeling skills using the ArchiCAD interface, 3D-modeling, etc.elements, rules of operation of the 3D layer space, types of projections using 3D modeling tools for zoning and explication of premises, specifications, rules for working with complex geometry of 3D elements, the main directions of computer technologies in architectural design using BIM technologies. The discipline provides software training, computer modeling and practical analysis of results.	Information and communication technologies, Fundamentals of computer modeling,	Compositional modeling and animation in architecture and urbanplanning, Virtual computer modeling in architecture and urbanplanning, Digital diagnostics of construction objects
DB	KV	Engineering Geodesy	180	6	5	PO4	Studies the composition and technology of geodetic works that provide surveys, design, construction, operation of structures, the main requirements for solving typical engineering and geodetic problems, their geometric essence. Gets skills in reading a topographic map, solving corresponding problems of both graphic and mathematical calculation on its basis. The discipline uses interactive teaching methods.	Engineering Mathematics, Fundamentals of Computer Modeling	Training Practice (Geodetic Engineering Networks and equipment, Engineering Systems,) Reconstruction and renovation of urban territories
		Fundamentals of geoinformatics				RO4	Study of general information about geoinformation systems, basic terms and concepts, issues of data input and output, their digitization, methods of presenting spatial and attribute information, brief characteristics of the main GIS, their advantages and disadvantages, general ideas about GIS software, basic geoinformation technologies	Engineering Mathematics, Fundamentals of Computer Modeling	Training Practice (Geodetic Engineering Networks and equipment, Engineering Systems,) Reconstruction and

							and training techniques source information, creating and editing objects. The discipline uses interactive teaching methods.		renovation of urban territories
DB	KV	History of Architecture	180	6	5	RO11	The discipline aims to study historical periods and major successes of architecture, the most significant monuments and progressive achievements of regional folk architecture, architectural trends, the origin of archetypes of buildings and structures from the late period to the beginning of the XXI century, characteristic differences and progressive trends in the evolution of architecture RC for their further use in modern realities. Active learning methods are used, such as interactive and digital technologies, project-based learning methods, problem-based learning technology, and gamification.	Culturalstudies, History of Kazakhstan, Philosophy,	Typology of buildings and structures, Restoration
		Architectural monuments				RO11	The discipline aims to study historical monuments, art, urban planning and architecture, which are structures, historical sites and objects related to the stages of development of the country, society, cultural and everyday features of the peoples of Kazakhstan, historical squares and centers, architectural monuments of the Republic of Kazakhstan. ensembles and complexes, architecture of religious buildings, monumental decorative and applied and other types of art. Active learning methods are used, such as interactive and digital technologies, project-based learning methods, problem-based learning technology, and gamification.	Culturalstudies, History of Kazakhstan, Philosophy,	Typology of buildings and structures, Restoration
DB	KV	Fundamentals of architectural design	180	6	5	RO4	The discipline provides for the study of the basics of forming an architectural and spatial environment, taking into account the laws of architectural composition, design theory, architectural design techniques in accordance with functional, aesthetic, structural and technical, economic and other fundamental requirements, standards and legislation at all stages: from the draft design - before detailed development and evaluation of the completed project according to the project program criteria. The discipline provides software training, computer modeling and practical analysis of results.	Engineering mathematics, Fundamentals of computer modeling, Modern computer technologies in architectural practice, Fundamentals of BIM technologies in architecture	Architectural design of public buildings, Architectural design of residential buildings, Architectural design of industrial buildings and structures, Architectural design of rural settlements



		Fundamentals of designing the architectural environment				RO4	The discipline considers the issues of solving drawing and graphic problems using two-dimensional graphics, typical issues of preparation of design documentation, methods of solving problems of designing construction structures by methods of three-dimensional solid-state modeling, application of computer technologies in the study of geometric and graphic problems.	Engineering mathematics, Fundamentals of computer modeling, Modern computer technologies in architectural practice, Fundamentals of BIM technologies in architecture	Architectural design of public buildings, Architectural design of residential buildings, Architectural design of industrial buildings and structures, Architectural design of rural settlements
DB	KV	Compositional modeling and animation in architecture and urban	planning 180	6	6	RO4	Studies the main types of composition, properties and regularities of three-dimensional forms, the main theoretical provisions for solving compositional problems, characteristic techniques of sketch search for compositional ideas and subsequent layout, objective laws in the construction of three-dimensional forms in architectural design in order to understand the methodology of architectural creativity, which is the basis of the professional design culture of an architectural specialist. The discipline uses interactive teaching methods.	Art tools and technologies in professional activity, Painting and architectural coloristics, Fundamentals of computer modeling	Landscape architectural design, Reconstruction and renovation of urban buildings, Restoration
		Virtual computer modeling in architecture and urban planning				RO4	Formation of students' knowledge and skills in the field of computer modeling of various types of processes (physical, technological, economic, etc.) using means and methods of three-dimensional visualization of digital terrain models and digital terrain models in order to use regulatory documents on quality, standardization in the practical activities of a specialist in the field of architecture and urban planning. The discipline uses interactive teaching methods.	Artistic means and technologies in professional activity, Painting and architectural coloristics, Fundamentals of computer modeling	Landscape architectural design, Reconstruction and renovation of urban buildings, Restoration
DB	KV	Engineering networks and equipment	180	6	7	RO6	The discipline studies the basics of designing heating and ventilation systems, methods for calculating the installation heat capacity of heat and gas supply systems for buildings for various purposes air conditioning, principles of design and reconstruction of indoor microclimate systems to maintain the specified indoor air parameters at any time of the year, the use of equipment and technology in systems for removing harmful substances. The discipline uses interactive teaching methods, computational and analytical methods.	Engineering mathematics, Applied physics, Fundamentals of architectural design, Fundamentals of architectural environment	design Architectural design of industrial buildings and structures, Architectural design of rural settlements of rural settlements
		Engineering systems				RO6	The discipline provides for the study of the values, functions of water supply and sanitation systems, installation and operation technologies, the main directions and prospects for the development of water supply systems for enterprises of various industries transport and methods of solving typical problems in the field of design and calculation of water supply systems, taking into account the latest achievements of science and technology. The discipline uses interactive teaching methods, computational and analytical methods.	Engineering mathematics, Applied Physics, Fundamentals of architectural design, Fundamentals of architectural environment	design Architectural design of industrial buildings and structures, Architectural design of rural settlements
DB	KV	Light organization of the architectural environment	180	6	7	RO7	The discipline studies regulatory and methodological documents, including building codes for lighting transport highways, land and off-street pedestrian areas the main principles of organization of light	Engineering Mathematics, Applied physics,	Aesthetics of architecture and design, Aesthetics of design and composition in

							and color space as an important tool in the formation of architectural and design proposals, the methodology for analyzing the lighting of territories of open urban and interior spaces, the algorithm of the project process in the light design of the environment. Active learning methods – performing individual calculation and graphic tasks.	Artistic means and technologies in professional activity	architecture, Engineering landscaping and transport, Planning of landscaping
		Technologies of light organization of space				RO7	The discipline provides for the study of the idea of the light climate in the space of buildings, streets, the formation of concepts about the influence of light on compositional construction internal space, methods of architectural and design design, methods and principles of organization of light and color space, as the main means in the formation of architectural and design environment, technologies of light organization of space and possession of technical means of their design. Active learning methods – performing individual calculation and graphic tasks.	Engineering mathematics, Applied physics, Artistic means and technologies in professional activity	Aesthetics of architecture and design, Aesthetics of design and composition in architecture, Engineering landscaping and transport, Planning of landscaping
PD	KV	of residential and public premises	Interior design 180	6	8	RO8, RO10	The discipline teaches the formation of professional skills in designing interiors of public and private buildings. The main goal of the project is to study the general principles and means of creating interiors , to use various methods of compositional modeling in the design process, to develop skills in conducting a comparative analysis of the interiors of architectural objects, to create the internal space of buildings using modeling methods and to harmonize the interiors of public and residential buildings. The discipline provides software training, computer modeling and practical analysis of results.	Monumental and decorative painting, Architectural drawing Compositional modeling and animation in architecture and urbanplanning, Virtual computer modeling in architecture and urban	planning Artistic design, of interior items, Interior design of premises, Aesthetics of architecture and design, Aesthetics of design and composition in architecture
		Interior design of premises of buildings				RO10, RO11	The discipline studies the basics that determine the interior, requirements for the interior, nature and urban planning conditions as the basis for interior design, requirements for the interior of human psychology and physiology, interior design and equipment of the main objects of the building premises, functional and planning organization of the main room and its elements, methods of interior organization, communication with the environment, use of color, transformation of space. The discipline provides software training, computer modeling and practical analysis of results.	Monumental and decorative painting, Architectural drawing Compositional modeling and animation in architecture and urbanplanning, Virtual computer modeling in architecture and urban	planning Artistic design, of interior items, Interior design of premises, Aesthetics of architecture and design, Aesthetics of design and composition in architecture
PD	KV	Artistic design of interior items	180	6	9	RO10	The discipline studies the basics of architectural and design design of interiors, sketching, interior coloristics, design in interior design with knowledge of the technology of making author's objects to order and drawing up technical specifications, determining the areas of participation and responsibility of the architect in the project implementation with the ability to correctly build the design stages, project fullness, and implement the conceived idea from the sketch to the implemented project. The discipline provides software training, computer modeling and practical analysis of results.	Interior design of residential and public premises, Interior design of buildings	Sculpture and sculptural-plastic modeling, Academic sculpture in architecture, Aesthetics of architecture and design, Aesthetics of design and composition in architecture

		Interior design of premises				RO7, RO10	The discipline studies the basics that determine the interior, interior requirements, nature and urban planning conditions as the basis interior design, requirements for the interior of human psychology and physiology, interior and equipment of the main objects of the building premises, functional and planning organization of the main room and its elements, methods of interior organization, communication with the environment, use of color, transformation of space. The discipline provides software training, computer modeling and practical analysis of results.	Interior design of residential and public premises, Interior design of buildings	Sculpture and sculptural-plastic modeling, Academic sculpture in architecture, Aesthetics of architecture and design, Aesthetics of design and composition in architecture
PD	KV	Direction Sculpture and sculptural-plastic modeling	180	6	10	RO7	The discipline studies the basics of sculptural skills, develops the ability to create artistic works independently images of the subject-spatial environment and objects of decorative and applied arts, various ways of expressing an architectural design, including plastic, graphic and mock-up images, optimal methods for depicting and creating architectural forms and spaces using methods for displaying and modeling urban planning environments and forms. Guest lectures of specialists are provided.	Interior design of residential and public spaces, Interior design of buildings, Artistic design of interior items, Interior design of premises	FINAL CERTIFICATION
		Academic sculpture in architecture				RO7	Discipline gives an idea of the relationship between sculptural and architectural forms, the basics of the structure, proportional relationships of objects, the construction of basic relationships, the proportions of large volumes, their breakdown into details, the subordination of details to a large volume, their relationship, types of plastic expression and three-dimensional solutions of architectural and sculptural environment, compositional principles of the main style-forming directions using the means of monumental and decorative sculpture and architecture. The discipline provides software training, computer modeling and practical analysis of results.	Interior design of residential and public premises, Interior design of building premises, Artistic design, of interior items, Interior design of premises	FINAL CERTIFICATION
PD	KV	Aesthetics of architecture and design	180	6	10	RO3, RO7	The discipline is aimed at teaching the basic concepts of aesthetics, specifics of types of architecture, features of fine, artistic art, architectural and artistic images of the twentieth century, forecasts of the twenty-first century, design features in design, artistic activities and images in the design of the monumental environment, created using methods of interpretation of empirical data in the creative process, taking into account the peculiarities of foreign and national aesthetic culture of society. Interactive teaching methods and a computational and analytical method are used.	Interior design of residential and public premises, Interior design of building premises, Artistic design, of interior items, Interior design of premises	FINAL CERTIFICATION
PD	KV	Aesthetics of design and composition in architecture				RO3, RO7	The discipline provides for the study of design and composition aesthetics in the system of humanitarian knowledge, the subject of aesthetics, the system of aesthetic concepts and categories "Aesthetic" as a special form of human relations to reality, the main aesthetic categories are art - an aesthetic phenomenon of culture, features of architecture and design as aesthetic phenomena, an artistic image in architecture and design. The training methods are: problem	Interior design of residential and public spaces, Interior design of buildings, Artistic design of interior items, Design of interior items of	FINAL CERTIFICATION

							solving, conducting thematic colloquiums, brainstorming seminars.	premises	
PD	KV	Engineering improvement of the territory and transport	180	6	10	RO6	Studies the purpose and use of city streets and roads, their engineering system and equipment including the following elements: lighting, landscaping, drainage devices, underground communications for various purposes, transport equipment, structures for transport and pedestrians (tunnels, tunnels, etc.). overpasses, pedestrian crosswalks, viaducts, aqueducts, transport interchanges, etc.), bridges and overpasses for traffic safety purposes. The discipline uses interactive teaching methods.	Ecology and life safety, Engineering networks and equipment, Engineering systems	FINAL CERTIFICATION
		Territory improvement planning The					Discipline studies the principles of territory improvement planning and environmental protection measures, taking into account the specifics of the infrastructure of urban territories and rural settlements, considers issues of state regulation in the field of urban and rural landscaping with the choice of effective methods for ensuring social and economic development of cultural services on the territory of the architectural complex. Active teaching methods are used, such as interactive and digital technologies, project-based teaching methods.	Ecology and life safety, Engineering networks and equipment, Engineering systems	FINAL CERTIFICATION
PD	KV	Management Economics	90	3	7	RO5	Formation of the conceptual framework and development of economic analysis skills using modern models and patterns of economic science, consideration of economic problems and tasks facing the head of the company. Studying this discipline will allow students to gain and develop knowledge in the field of analytical research of economic, technological and technical parameters of the enterprise, as well as to master the skills of applying special methods of economic justification of management decisions and assessing their consequences. Active learning methods are used : situational tasks and the case method.	Engineering mathematics, Fundamentals of economics and entrepreneurship	Business analytics Power BI, Engineering land improvement and transport, Planning of land improvement

PD	KV	Transport logistics	90	3	8	RO5	Study of the main provisions of transport support for logistics systems, activities in the field of transportation, covering the entire range of operations and services for the delivery of goods from the manufacturer to the consumer, principles of design and construction of logistics systems. Mastering the skills of optimizing and organizing rational cargo flows, their processing in specialized logistics centers, ensuring an increase in their efficiency, reducing unproductive costs and expenses. The training methods are: problem solving, conducting thematic colloquiums, brainstorming seminars. Within the framework of the discipline, guest lectures are held by leading specialists of transport and logistics companies.	Fundamentals of economics and entrepreneurship, Fundamentals of law and anti-corruption culture	Resource saving in transport, Engineering improvement of the territory and transport, Planning of improvement of the territory
PD	KV	Resource saving in transport	90	3	9	RO5	Study of the main types and characteristics of energy resources, regulatory support for energy saving, improving the energy efficiency of the transportation process; energy-saving technologies in repair production and operation of transport infrastructure facilities organization and methods of energy saving management. It is used to solve problems, conduct thematic colloquiums, debates. Guest lectures are being held by leading experts of the transport and communication industry.	Fundamentals of economics and entrepreneurship, Fundamentals of Law and anti-corruption culture, Managerial economics	Engineering land improvement and transport, Planning of land improvement
PD	KV	Time management	90	3	7	RO5	Formation of students ' general ideas about the essence and types of time management, principles and methods of time resource management for more successful implementation of professional activities. Active learning methods are used : situational tasks and the case method.	Engineering mathematics, Fundamentals of economics and entrepreneurship	Business analytics Power BI, Engineering landscaping and transport, Planning of landscaping
PD	KV	Digital diagnostics of construction objects	90	3	8	RO4, RO5	Studies modern methods of diagnostics, monitoring and testing of construction objects using innovative technologies, modern geodetic means of periodic and automatic monitoring (GPS measurements, total stations, leveling, laser scanning). Active learning methods are used : situational tasks and the case method.	Engineering geodesy, Fundamentals of geoinformatics	Resource conservation in transport, Engineering landscaping and transport, Planning of territory improvement
PD	KV	Business analytics Power BI	90	3	9	RO9	Formation of students ' skills and knowledge to collect, analyze and structure data to build interactive dashboards, program at the current level of development of the multidimensional data analysis language MDX, build a database of data structures, create a database of data structures, models and algorithms of projects in current areas of BI technology, be able to analyze the essence of the subject field of the project and make decisions. Active learning methods are used - brainstorming, working in small groups.	Methods of scientific research, Fundamentals of economics and entrepreneurship	Engineering landscaping and transport, Planning of landscaping
<b>Total</b>			<b>2760</b>	<b>92</b>					

## 10. EXPERT OPINIONS

### ЭКСПЕРТНОЕ ЗАКЛЮЧЕНИЕ

на образовательную программу «6В07330 – Архитектура зданий и сооружений»

Реализация образовательной программы «6В07330 – Архитектура зданий и сооружений» 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 «6В07330 – Архитектура зданий и сооружений». Образовательные траектории разработаны в соответствии с запросами Архитектуры для транспортно-коммуникационной отрасли.

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 «6В07330 – Архитектура зданий и сооружений» по направлению подготовки кадров «6В073 – 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 «6В07330 – Архитектура зданий и сооружений».

Эксперт

Начальник отдела «Трасса и путь»

ТОО «Метропроект»

Эби Е.К.

личная подпись, дата М.П.



## 11. REVIEWER'S CONCLUSION

### **Рецензия на образовательную программу 6В07330 – Архитектура зданий и сооружений по направлению подготовки 6В073- Архитектура и строительство**

Образовательная программа (бакалавр) «6В07330 – Архитектура зданий и сооружений» содержит следующую информацию: квалификация выпускника, форма и срок обучения, направление и характеристика деятельности выпускников, приведен полный перечень компетенций, которыми должен обладать выпускник в результате освоения данной образовательной программы.

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

В учебном плане образовательной программы определен перечень всех учебных дисциплин обязательного компонента и компонента по выбору, трудоемкость каждой учебной дисциплины в кредитах, последовательность их изучения, виды учебных занятий и формы контроля. Каталог элективных дисциплин, Каталог внутривузовского компонента полностью отражают преемственность дисциплин (несколько 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 компетентностной модели выпускника.

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

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

#### **Заключение:**

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

Рецензент: асоц.профессор  
КазННТУ им К.И.Сатпаева



Джолдасова К.К.



## 12.RECOMMENDATION LETTERS

### РЕКОМЕНДАТЕЛЬНОЕ ПИСЬМО от работодателя ТОО «Метропроект»

Уважаемая Салтанат Нурадильевна

Руководство «Метропроекта» в лице Утегенова Н.С. ознакомилось с содержанием образовательной программы «6В07330 – Архитектура зданий и сооружений» и внесло следующие рекомендации:

- включить в содержание образовательной программы дисциплины: Эстетика дизайна и композиции в архитектуре.
- 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 транспортно-коммуникационной сфере. Предлагается включить следующие дисциплины 1.Виртуальное компьютерное моделирование в архитектуре и градостроительстве; 2. Реставрация; 3.Инженерное благоустройство территории и транспорта.
- увеличить количество часов, выделяемых на проведение производственных практик;

включить дисциплины:

- Виртуальное компьютерное моделирование в архитектуре градостроительстве;
- Реставрация;
- Инженерное благоустройство территории и транспорта.

Работодатель  
Главный инженер  
ТОО «Метропроект»

(личная подпись, дата, МП)

Утегенов Н.С.



## 13. REVIEW AND APPROVAL PROTOCOLS

### 13. ПРОТОКОЛЫ РАССМОТРЕНИЯ И УТВЕРЖДЕНИЯ

Академия логистики и транспорта

**ПРОТОКОЛ №6** (начало формирования ОП)

**Заседания**

**Академического комитета по образовательной программе и ведущих преподавателей кафедры «Строительная инженерия»**

г. Алматы

« 15 » 03 2023 года

**Председатель: Исмагулова С.О.**

**Секретарь: Жадраев Р.Ж.**

**Присутствовали:** члены Академического комитета, ведущие ППС кафедры

**Представители с производства:** Главный инженер ТОО «Метропроект- Утегенов Н.С.,  
Начальник отдела «Трасса и путь»- Әби Е.Қ., д.т.н, доцент, декан Академии  
строительства, архитектуры и дизайна, «Каспийский университет»-Ауесбаев Е.Т.

**Обучающиеся:** Оразбаева М

#### **ПОВЕСТКА ДНЯ:**

1. Рассмотрение компетентностной модели выпускника
2. Рассмотрение возможности включения дисциплин в КЭД и РУП

По первому вопросу

#### **ВЫСТУПИЛ(а):**

Зав. кафедрой Исмагулова С.О. предложила рассмотреть компетентностную модель выпускника по 3 уровням образования: бакалавриат, магистратура, докторантура.

Компетентностная модель выпускника включает в себя следующие части:

- Цель и задачи образовательной программы;
- Результаты обучения;
- Область, объекты, виды и функции профессиональной деятельности;
- Перечень должностей по образовательной программе;
- Профессиональные сертификаты, полученные по окончании обучения;
- Требования к предшествующему уровню образования.

**ВЫСТУПИЛ:** Главный инженер ТОО «Метропроект- Утегенов Н.С., который предложил в силу специфики их организации отразить в объектах профессиональной деятельности следующее: Современные инновационные технологии в архитектурно-строительной сфере.

#### **ВЫСТУПИЛ:**

Член кафедры Ибраимов А.К., который предложил утвердить

После рассмотрения компетентностной модели выпускника было предложено утвердить данную Модель по 3 уровням образования.

#### **ПОСТАНОВИЛИ:**

- предоставить компетентностную модель выпускника по 3 уровням образования: бакалавриат, магистратура, докторантура для рассмотрения и утверждения на Совете института «Транспортная инженерия».

По второму вопросу

**ВЫСТУПИЛ(а):** зав кафедрой Исмагулова С.О. с предложением заслушать представителей работодателей и обучающихся по включению новых дисциплин в КЭД и РУП приема 2023г.

**ВЫСТУПИЛ:** Начальник отдела «Трасса и путь»- Эби Е.Қ - Организации заинтересованы в специалистах, имеющих хороший уровень подготовки и знаний в области архитектуры, проектирования , а также строительства. Вносим предложения о внесении в РУП следующих востребованных дисциплин 1.Виртуальное компьютерное моделирование в архитектуре и градостроительстве; 2. Реставрация; 3.Инженерное благоустройство территории и транспорта.

**ВЫСТУПИЛ:** обучающийся Оразбаева М.

Считаем необходимым включить в РУП следующие дисциплины: Виртуальное компьютерное моделирование в архитектуре и градостроительстве, Реставрация, Инженерное благоустройство территории и транспорта.

**ПОСТАНОВИЛИ:**

1. Информацию принять к сведению;
2. Учесть предложения и рекомендации работодателей и обучающихся;

Рассмотреть включение в РУП следующие дисциплины:1.Виртуальное компьютерное моделирование в архитектуре и градостроительстве; 2. Реставрация; 3.Инженерное благоустройство территории и транспорта.

**Председатель:**



**Исмагулова С.О.**

**Секретарь:**



**Жадраев Р.Ж.**

Академия логистики и транспорта  
**ПРОТОКОЛ №7** (перед утверждением ОП на УС)

**Заседания КОК УМБ института «Транспортная инженерия»**

г. Алматы

«15 » марта 2023 года

**Председатель: Чигамбаев Т.О.**

**Секретарь: Утепова А.**

**Присутствовали:** члены КОК УМБ, члены Академического комитета

**Представители с производства:** Главный инженер ТОО «Метропроект- Утегенов Н.С., Начальник отдела «Трасса и путь»- Эби Е.К., д.т.н,доцент,декан Академии строительства,архитектуры и дизайна, «Каспийский университет»-Ауесбаев Е.Т.**Обучающиеся:** Оразбаева М.

**ПОВЕСТКА ДНЯ:**

1. Рассмотрение Каталога элективных дисциплин (КЭД), Рабочей учебной программы (РУП), паспорта образовательных программ бакалавриата, магистратуры и докторантуры.

**ВЫСТУПИЛ(а):** зав. кафедрой Исмагулова С.О. представил (а) на рассмотрение КЭД, РУП бакалавриата, магистратуры и докторантуры.

На кафедре «Строительная инженерия» было проведено заседание с привлечением представителей работодателей и обучающихся по обсуждению структуры и содержанию образовательной программы 6В07330– Архитектура зданий и сооружений

Представителями работодателей и обучающимися были предложены ряд новых актуальных дисциплин, которые кафедра одобрила и включила в новые КЭД и РУП.

**ПОСТАНОВИЛИ:**

1. Информацию принять к сведению;
2. Учесть все предложения и рекомендации работодателей, представителей студенческого актива;
3. Представить КЭД, РУП и ОП бакалавриата, магистратуры и докторантуры для рассмотрения и утверждения на Совете института, УС Академии.

**Председатель КОК УМБ**

**Чигамбаев Т.О.**

**Секретарь**

**Утепова А.**

## 14. APPROVAL SHEET

[illegible]

**15. CHANGE REGISTRATION SHEET**

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