

**NPJSC «Kazakh National Research Technical University  
named after K. I. Satbayev»  
Institute of Architecture and Construction named after T.K. Basenov  
Department of "Architecture"**

## **CURRICULUM PROGRAM**

**7M07316 – «Architecture and urban planning»  
(profile direction (1.5 years))**

**Master of Engineering and Technology on the curriculum program  
7M07316 – «Architecture and urban planning»**

1st edition  
in accordance with the GOSO of higher education 2018

**Almaty 2020**

Developed:	Discussed: meeting of the INSTITUTE	Approved: E&MB of Satbayev University	Page 1 of 44
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**The program is drawn up and signed by the parties:**

**From KazNRTU named after K. I. Satbayev:**

1. Head of the Department "Architecture» \_\_\_\_\_ Khojikov A.V.
2. Director of Institute \_\_\_\_\_ Kuspangaliev B. U.
3. The chairmen of the UMG department \_\_\_\_\_ Maulenova G. D.

**From employers:**

1. Co-Chairman of the Advisory Board of the Institute, deputy Director OC «KA Stroy Ltd» \_\_\_\_\_ Karmanov Sh. D.

**From partner University:**

1. Professor of the faculty of Land management, architecture and design of the Kazakh agrotechnical University. S. Seifullin, doctor of architecture, the Professor, MAAM \_\_\_\_\_ Kornilova A.A.

Approved at the meeting of the Educational and methodical Council of the Kazakh national research technical University named after K. I. Satpayev. Protocol No. 4 of 14.01.2020

**Qualification:**

Level 7 of the National qualifications framework:

7M07 Engineering, manufacturing and construction industries:

7M073 Architecture and construction:

7M07316 – Architecture and urban planning (master's degree).

**Professional competence:**

Graduate master can work as a designer, project Manager, to carry out management activities.

**Short description of the program:**

**1. Purposes**

Preparation of masters of engineering and technology in the educational program 7M07316—"Architecture and urban planning" – training of specialists with a high level of professional culture, having a civil position, able to formulate and solve scientific and practical problems, to carry out research, management, teaching activities.

The purposes of the educational program are presented in table 1.

Table 1. Purposes of the educational program

Purpose code	Statement of purpose
Ц1	Understanding the methods of research and preparation of tasks for the design of the object. The solution of modern scientific and practical problems. The practical use of the methodology of scientific research.
Ц2	In-depth understanding of structural design, construction and engineering issues related to building design. The development of fundamental courses at the intersection of Sciences that guarantee their professional mobility.
Ц3	Adequate knowledge of physical problems and technologies, as well as the functions of buildings in order to ensure their conditions of internal comfort and protection from climatic influences. Theoretical and methodological basis for the formation of sustainable architecture, providing a holistic perception of the world
Ц4	Mastering the design skills necessary to meet customer requirements within the constraints imposed by cost factors and building regulations. Accounting for the results of architectural research.
Ц5	Knowledge of the industries, organisations, regulations and procedures for translating design concepts into buildings and integrating plans into overall planning, taking into account data of scientific research.
Ц6	Preparation of graduates for self-study and development of new professional knowledge and skills, continuous professional self-improvement, the formation of new professional thinking. Preparation for independent scientific research, readiness for analytical work, synthesis of scientific results.

**2. Types of professional activity**

Graduates of the master's degree can perform the following professional activities:

- design work in the field of architecture and urban planning;
- administrative and managerial activities in the bodies of architecture and urban planning under the city and regional akimats.

**3. Sphere of professional activity:**

- management activities in the structural units of the Department of architecture and urban planning of the district, city and regional level, regional and district akimats, in architectural formations of various forms of ownership.

**4. Objects of professional activity:**

- architectural and town-planning objects: territories of the cities and suburban zones, rural settlements with adjacent territories, territories of separate administrative areas, territories of village councils, parts of territories of settlements allocated on socially significant signs;
- architectural and construction objects: buildings, constructions, their complexes of residential, public, industrial, industrial purpose, interiors of buildings and constructions;
- architectural and landscape objects: landscaped, landscaped, watered, equipped land; objects of transport and engineering infrastructure;
- small architectural forms: items of equipment and elements of improvement, placed in open areas, providing the opportunity and conditions for the implementation of all types of human activity;
- design processes of architectural-territorial, architectural-town-planning, architectural-building, architectural-landscape objects and small architectural forms;

**5. Subject of professional activity:**

- solution of issues of design of residential and public buildings, their complexes;
- functional organization of design solutions, aesthetics and harmony of designed objects;
- study of experience in the design of populated areas, civil buildings and promotion of achievements in the field of architecture;
- organization and implementation of measures for the preservation and restoration of monuments of architecture, etc.

## PASSPORT OF THE EDUCATIONAL PROGRAM

### 1. Scope and content of the program

The period of study in the master's degree is determined by the volume of mastered academic credits. When mastering the set amount of academic credits and achieving the expected results of training for a master's degree, the educational program of the master's degree is considered to be fully mastered. The profile of the magistracy at least 92 academic credits for the entire period of study (1,5 year), including all types of educational and scientific activities of undergraduates.

Planning the content of education, the method of organization and conduct of the educational process is carried out by the University and the scientific organization on their own on the basis of credit technology training.

The content of the master's educational program consists of:

- 1) theoretical training, including the study of cycles of basic and major disciplines;
- 2) practical training of undergraduates: different types of practices, scientific or professional training;
- 3) research work, including the implementation of the master's thesis - for scientific and pedagogical magistracy
- 4) final certification.

#### **The content of the EP**

In the implementation of the educational program of postgraduate education 7M07316 – "Architecture and urban planning" is used credit-modular system of the educational process, based on the modular principle of the content of the educational program and the construction of curricula, the use of credit units (credits) and relevant educational technologies.

Educational program 7M07316–"Architecture and urbanism" contains:

- 1) theoretical training, including the study of cycles of basic and major disciplines;
- 2) additional types of training – different types of practices, experimental research/research work;
- 3) intermediate and final certification.

Implementation of educational programs is carried out on the basis of educational and methodical complexes of specialty and disciplines.

The total complexity of theoretical training is determined by the list of subjects studied, given in the Working curriculum.

The main criterion for the completion of the educational process for the preparation of masters is the development of undergraduates:

- at scientific and pedagogical training – not less than 92 credits (ECTS), of which not less than 52 credits of theoretical training, not less than 28 credits of practice; writing and defending a master's thesis – 12 credits.

One academic credit is equal to 30 academic hours of the following types of academic work:

- classroom work of a graduate student during the academic period in the form of a semester;
- work of a master student with a teacher during the period of professional and research practices;
- work of a master's student with a teacher during the research work (experimental research) of a master's student;
- the work of a master's degree student to write a master's thesis;
- the work of a student on the preparation and delivery of a comprehensive examination.

Previous level of education: higher education.

Specialization: within the educational program of the magistracy 7M07316 – "Architecture and urban planning" it is possible to specialize in areas implemented by selecting the appropriate specialized electives from the catalog.

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

The main objectives of the educational master's program 7M07316 – "Architecture and urban planning" are:

- choice of individual direction of education;
- deepening of theoretical and practical individual training in the field of architecture and urban planning and related Sciences, due to the needs of the state and the market, scientific and practical activities of educational institutions engaged in the preparation of masters;
- acquisition of skills in the organization and conduct of research, obtaining the necessary groundwork for the continuation of scientific work in doctoral studies;
- development of the ability to self-improvement and self-development, needs and skills of independent creative mastery of new knowledge throughout their active life.

## 2. Requirements for applicants

Previous level of education of entrants – higher professional education (bachelor). The applicant must have a diploma of the established sample and confirm the level of knowledge of the English language with a certificate or diplomas of the established sample.

The procedure for admission of citizens to the master's degree is established in accordance with the "Standard rules for admission to educational institutions that implement educational programs of postgraduate education."

The formation of the contingent of undergraduates is carried out through the placement of the state educational order for the training of scientific and pedagogical personnel, as well as payment for training at the expense of citizens' own funds and other sources. Citizens of the Republic of Kazakhstan shall be provided with the right to receive free postgraduate education on a competitive basis in accordance with the state educational order, if they receive this level for the first time.

At the "entrance" the master student must have all the prerequisites necessary for the development of the appropriate educational program of the magistracy. The list of necessary prerequisites is determined by the higher education institution independently.

In the absence of the necessary prerequisites undergraduates are allowed to master them on a fee basis.



### 3. Requirements for completion of studies and diploma

#### Degree / qualifications awarded

The graduate of this educational program is awarded the academic degree "master of engineering and technology" in the direction.

A graduate who has mastered the master's program, must have the following General professional competencies:

- the ability to independently acquire, comprehend, structure and use in professional activity new knowledge and skills, to develop their innovative abilities;
- the ability to independently formulate research goals, establish the sequence of professional tasks;
- the ability to apply in practice knowledge of fundamental and applied sections of disciplines that determine the direction (profile) of the master's program;
- the ability to professionally select and creatively use modern scientific and technical equipment to solve scientific and practical problems;
- ability to critically analyze, present, protect, discuss and disseminate the results of their professional activities;
- possession of skills of drawing up and registration of scientific and technical documentation, scientific reports, reviews, reports and articles;
- willingness to lead the team in the field of their professional activities, tolerant of social, ethnic, religious and cultural differences;
- readiness for communication in oral and written forms in a foreign language to solve the problems of professional activity.

A graduate who has mastered the master's program 7M07316 – "Architecture and urban planning", must have professional competencies corresponding to the types of professional activities to which the master's program is focused:

research and production activities:

- the ability to independently carry out production and research and production field, laboratory and interpretation work in solving practical problems;
- ability to professional operation of modern field and laboratory equipment and devices in the field of master's degree program;
- the ability to use modern methods of processing and interpretation of complex information to solve production problems;

project activity:

- the ability to independently prepare and submit projects of research and production works;
- readiness to design complex research and production works in solving professional problems;

organizational and management activities:



- readiness to use practical skills of organization and management of research and production works in solving professional problems;
- readiness for practical use of normative documents in the planning and organization of scientific and production works.

When developing a master's program, all General cultural and General professional competences, as well as professional competences related to the types of professional activity for which the master's program is focused, are included in the set of required results of the master's program.

## 4. Working curriculum of the educational program

### 4.1. Duration of training 1,5 years

Academic degree: Magister

Term of study: 1,5 years

year of study	Code	Name of course	Component	Academic credits	lecture/ lab/ prac/MSIW	Prerequisites	Code	Name of course	Component	lecture/ lab/ prac/MSIW	Prerequisites	
<b>1</b>	<b>1 semester</b>						<b>2 semester</b>					
	LNG202	Foreign language (professional)	BD IC	6	0/0/3/3		1201	ELECTIVE	BD OC	4		
	MNG274	Management	BD IC	6	2/0/1/3		1202	ELECTIVE	PS OC	6		
	HUM204	Psychology of management	BD IC	4	1/0/1/2		1203	ELECTIVE	PS OC	6		
	ARC201	Architectural project	PS IC	6			1204	ELECTIVE	PS OC	6		
	1101	ELECTIVE	BD OC	6			1205	ELECTIVE	PS OC	6		
	ARC222	Theory of architecture	PS IC	6	2/0/1/3		AAP221	Master's student experimental research work, including internship and master's project implementation	MSERW	4		
	<b>In total</b>			<b>34</b>			<b>In total</b>			<b>32</b>		
<b>2</b>	<b>3 semester</b>											
	AAP246	Work placement	PS	9								
	AAP220	Master's student experimental research work, including internship and master's project implementation	MSERW	14								
	ECA206	Registration and defense of the master's thesis	FA	12								
	<b>In total</b>			<b>35</b>								
	<b>In all</b>			<b>101</b>								

Number of credits for the whole period of study	
Cycles of disciplines	Credits
The cycle of general education	0
A cycle of basic disciplines ( BD IC, BD OC)	26
A cycle of principal subjects (PS IC, PS OC)	45
<b>All on the theoretical classes:</b>	<b>71</b>
MSERW	18
Registration and defense of the master's thesis (RaDMT)	12
<b>In TOTAL:</b>	<b>101</b>

## Catalog of elective disciplines

Academic degree: Master of engineering and technology

Term of study: 1,5 years

Basic Discipline - Components of choice - 20 credits					
	Code	Name of disciplines	Academic credits	lecture/ laboratory/ practice/IWS	Semester
1101	ARC219	Modern aspects of the history and theory of urban planning	6	2/0/1/3	1
	ARC211	The main directions of modern architecture	6	2/0/1/3	
1201	ARC239	Urban analysis I	4	1/0/1/2	2
	ARC237	Regulatory and regulatory framework in architecture and urban planning I	4	1/0/1/2	
<b>Total:</b>			<b>20</b>		
Profile Discipline - Components of choice - 48 credits					
	Code	Name of disciplines	Academic credits	lecture/ laboratory/ practice/IWS	Semester
1202	ARC245	Psychology of perception of architectural environment I	6	2/0/1/3	2
	ARC248	The problems of the built environment of human life I	6	2/0/1/3	
1203	ARC221	Social bases of architecture	6	2/0/1/3	2
	ARC220	Socio-demographic conditions architecture	6	2/0/1/3	
1204	ARC208	Methodology in energy efficiency architecture	6	2/0/1/3	2
	ARC223	Energy efficiency in urban planning	6	2/0/1/3	
1205	ARC244	Scientific methods of reconstruction and restoration I	6	2/0/1/3	2
	ARC243	Scientific methods of reconstruction and modernization I	6	2/0/1/3	
<b>Total:</b>			<b>48</b>		

## 5. Modular educational program

Component	Code.	Name of course	Semester	Academic credits	lecture	laboratory	practice	MSIW	Control type	Department
<b>Profile training module</b>										
<b>Basic disciplines (BD) (26 credits)</b>										
<b>Institute component (IC) (16 credits)</b>										
BD 1.1.1	LNG202	Foreign language (professional)	1	6	0	0	3	3	Exam	EL
BD 1.2.1	MNG274	Management	1	6	2	0	1	3	Exam	SD
BD 1.3.1	HUM204	Management psychology	1	4	1	0	1	2	Exam	S&EPMC
<b>Optional component (OC) (10 credits)</b>										
<b>Architecture Theory Special Questions Module</b>										
BD 1.4.1	ARC219	Modern aspects of the history and theory of urban planning	1	6	2	0	1	3	Exam	Architecture
BD 1.4.2	ARC211	The main directions of modern architecture							Exam	Architecture
BD 1.5.1	ARC239	Urban analysis I	2	4	1	0	1	2	Exam	Architecture
BD 1.5.2	ARC237	Regulatory and regulatory framework in architecture and urban planning I							Exam	Architecture
<b>Profiling disciplines (PD) (45 credits)</b>										
<b>Institute component (IC)</b>										
PS	AAP246	Work placement	3	9					Report	Architecture
<b>Architecture theory and practice module</b>										
PS 1.1.1	ARC222	Theory of architecture	1	6	2	0	1	3	Exam	Architecture
PS 1.2.1	ARC201	Architectural project	1	6	0	0	3	3	Exam	Architecture
<b>Optional component (OC)</b>										
<b>Professional Research Module</b>										
PS 1.3.1	ARC245	Psychology of perception of architectural environment I	2	6	2	0	1	3	Exam	Architecture
PS 1.3.2	ARC248	The problems of the built environment of human life I							Exam	Architecture

<b>Professional Research Module</b>										
PS 1.4.1	ARC221	Social bases of architecture	2	6	2	0	1	3	Exam	Architect ure
PS 1.4.2	ARC220	Socio-demographic conditions architecture							Exam	Architect ure
PS 1.5.1	ARC208	Methodology in energy efficiency architecture	2	6	2	0	1	3	Exam	Architect ure
PS 1.5.2	ARC223	Energy efficiency in urban planning							Exam	Architect ure
PS 1.6.1	ARC244	Scientific methods of reconstruction and restoration I	2	6	2	0	1	3	Exam	Architect ure
PS 1.6.2	ARC243	Scientific methods of reconstruction and modernization I							Exam	Architect ure
<b>Experimental research module (18 credits)</b>										
MSE RW	AAP220	Master's student experimental research work, including internship and master's project implementation	2	4					Report	Architect ure
MSE RW	AAP221	Master's student experimental research work, including internship and master's project implementation	3	14					Report	Architect ure
<b>Final certification module (12 credits)</b>										
FE	ECA206	Registration and defense of the master's thesis	4	12					Project defense	
<b>Total credits</b>			<b>101</b>							

## 6. Descriptors of level and scope of knowledge, skills and competences

The requirements for the level of training of a master's degree are determined on the basis of Dublin descriptors of the second level of higher education (master's degree) and reflect the mastered competencies expressed in the achieved learning results.

The results of training are formulated at the level of the entire educational program of the magistracy, and at the level of individual modules or discipline.

Descriptors reflect the learning outcomes characterizing the learner's abilities:

1) demonstrate developing knowledge and understanding in the field of architecture, urban planning, construction, engineering systems and networks, based on advanced knowledge, in the development and (or) application of ideas in the context of design and research activities;

2) apply professionally their knowledge, understanding and abilities to solve problems in a new environment, in a broader interdisciplinary context;

3) collect and interpret information to form judgments based on social, ethical and scientific considerations;

4) clearly and unambiguously communicate information, ideas, conclusions, problems and solutions to both professionals and non-specialists;

5) training skills necessary for self-continuation of further training in the field of architecture, urban planning, construction, engineering systems and networks.

## 7. Competences on completion of training

7.1 Requirements to key competences of graduates of profile magistracy. Upon completion of the training, the master should:

1) have an idea about:

– the role of science and education in public life;

– contradictions and socio-economic consequences of globalization processes;

– philosophy and methodology in the architectural and construction sphere, the state and trends of architecture, urban planning, construction, engineering systems and networks in the Republic of Kazakhstan, CIS and foreign countries.

2) *know*:

– the latest achievements of architectural science;

– possibilities of computer technologies, applied problems of architecture, modern mathematical and natural science research methods used in architectural science;

– the main trends in the development of architecture and architectural science in Kazakhstan, CIS and foreign countries.

3) *be able*:

- critically analyze existing concepts, theories and approaches to the analysis of processes and phenomena;



- integrate the knowledge gained in different disciplines to solve research problems in new unfamiliar conditions;
- by integrating knowledge to make judgments and decisions based on incomplete or limited information;

– to carry out information-analytical and information-bibliographic work with the involvement of modern information technologies;

- creative thinking and creative approach to solving new problems and situations;
- fluent in a foreign language at a professional level;

4) *have the skills:*

- use of modern information technologies in the educational process;
- professional communication and intercultural communication;
- oratory, correct and logical design of their thoughts in oral and written form;
- development of design and estimate documentation of buildings, constructions and their complexes, landscape and town-planning objects, monuments of architecture, promotion of achievements of architectural and town-planning activity;

- solution of issues of design of residential and public buildings, their complexes;
- functional organization, design solutions, aesthetics and harmony of the designed objects;

– expanding and deepening the knowledge necessary for daily professional activities and continuing education in doctoral studies.

5) *be competent:*

- in art, to own professional computer programs and the basic requirements providing durability, advantage and beauty of buildings and constructions, to be guided freely in the solution of architectural and architectural and town-planning tasks;
- in ways to ensure constant updating of knowledge, skills and abilities.

## 7.2 Composition of master's competences

The development of the master's educational program should ensure the formation of the following groups of competencies:

*academic competencies* – advanced scientific-theoretical, methodological knowledge and research skills, providing the development of research projects or solving problems of scientific research, innovation, continuous self-education;

*social and personal competences* – personal qualities and abilities to follow social and cultural and moral values; abilities to social, intercultural interaction, critical thinking; social responsibility, allowing to solve social and professional, organizational and administrative, educational tasks;

*professional competence* – in-depth knowledge of special disciplines and abilities to solve complex professional problems, tasks of research and scientific-pedagogical activity, to develop and implement innovative projects, to carry out continuous professional self-improvement.



Requirements for master's academic competences. The master must:

S&PC-1. To be able to take into account social, moral and ethical standards in social and professional activities.

S&PC-2. Be able to cooperate and work in a team.

S&PC-3. Possess communication skills to work in an interdisciplinary and international environment.

Requirements for professional competencies of the master. A master must be able to:

*Project activity*

PC- 8. Formulate design tasks.

PC-9. Apply methods of analysis of options, development and search for compromise solutions.

PC-10. Use automation tools in the design, constantly master new achievements in the field of automation.

*Organizational and management activities*

PC-11. To make the best management decisions.

PC-12. To master and implement management innovations in architectural and construction activities.

*Innovative activity*

PC-13. To carry out a feasibility study of innovative projects.

PC-14. To develop normative and methodical documents in architecture, engineering and construction.

PC-15. Use modern computer technologies to solve engineering and innovative problems of professional activity.

7.3 Requirements for research work of a master's degree student in a profile master's degree:

1) corresponds to the profile of the educational program of the master's degree, which is performed and protected by a comprehensive master's thesis;

2) relevant and contains scientific novelty and practical significance;

3) based on modern theoretical, methodological and technological achievements of science and practice;

4) performed using modern methods of scientific research;

5) contain research (methodical, practical) sections on the basic protected provisions;

6) based on international best practices in the relevant field of knowledge;

#### 7.4 Requirements for the organization of practices:

The educational program of the profile magistracy includes two types of practices that are conducted in parallel with theoretical training or in a separate period:

1) research in the cycle of PD – at the place of performance of master's work.

The research practice of the undergraduate is conducted in order to get acquainted with the latest theoretical, methodological and technological achievements of domestic and foreign science, modern methods of research, processing and interpretation of experimental data.

### **8. Annex to the certificate according to the standard ECTS**

The application is developed according to the standards of the European Commission, the Council of Europe and UNESCO/CEPES. This document serves only for academic recognition and is not an official confirmation of the document on education. Without a diploma of higher education is not valid. The purpose of completing the European Annex is to provide sufficient data on the holder of the diploma, the qualification obtained, the level of this qualification, the content of the training program, the results, the functional purpose of the qualification, as well as information on the national education system. The model of the application on which the estimates will be translated uses the European credit transfer or transfer system (ECTS).

The European diploma Supplement provides an opportunity to continue education in foreign universities, as well as to confirm the national higher education for foreign employers. When traveling abroad for professional recognition will require additional legalization of the diploma of education. The European diploma Supplement is completed in English upon individual request and is issued free of charge.

**Foreign language (professional)**

CODE – LNG202

CREDIT – 6 (0/0/3/3)

PREREQUISITE – Academic English, Business English, IELTS 5.0-5.5

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**THE PURPOSE AND OBJECTIVES OF THE COURSE**

The aim of the course is to develop students ' English language skills for their current academic studies and improve their performance in project management

**BRIEF DESCRIPTION OF THE COURSE**

The course aims to build vocabulary and grammar for effective communication in project management and to improve reading, writing, listening and speaking skills at the Intermediate level. It is expected that students will acquire a vocabulary of business English and learn grammar structures, which are often used in the context of management. The course consists of 6 modules. The 3rd module of the course ends with an intermediate test, and the 6th module is accompanied by a test at the end of the course. The course ends with the final exam. Students also need to practice on their own (MIS). MIS - independent work of undergraduates under the guidance of a teacher.

**KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE**

Upon successful completion of the course, students are expected to be able to recognize the main idea and message, as well as specific details when listening to monologues, dialogues and group discussions in the context of business and management; understand written and spoken English on topics related to management; write management texts (reports, letters, e-mails, minutes of meetings), following the generally accepted structure with a higher degree of grammatical accuracy and using business words and phrases, talk about different business situations, using the appropriate business vocabulary and grammatical structures - in pairs and group discussions, meetings and negotiations.

## Management

CODE – MNG274

CREDIT – 4 (1/0/1/2)

PREREQUISITE – not

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### THE PURPOSES AND OBJECTIVES OF THE COURSE

Training of undergraduates in the basics of project management, the expansion of their professional capabilities in terms of the application of management knowledge in the field of professional activity.

### BRIEF DESCRIPTION OF THE COURSE

The discipline is aimed at preparing graduates for:

- use of quantitative and qualitative methods to manage business processes and evaluate their effectiveness;
- design and management of any socio-economic system, part of the system, or process that meets the internal and external needs of the enterprise, organization;
- enterprise management; organization or institution, including institutions of higher professional education and research institutions, as well as their departments, support of business processes in different areas of management, the use of modern tools for the diagnosis of activities and development of the development strategy of the enterprise and organization;
- preparation of graduates to work in the ever-changing conditions of internal and external environment of the enterprise, the country and the world.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

Know:

- main functions of project management;
- the use of modern methods of assessing the effectiveness of management programs, tasks, activities;
- identification, formulation and solution of production tasks, including material, human and economic parameters.

## **Psychology of management**

CODE – HUM204

CREDIT – 4 (1/0/1/2)

PREREQUISITE – not

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### **THE PURPOSES AND OBJECTIVES OF THE COURSE**

Training of undergraduates in the basics of project management, the expansion of their professional capabilities in terms of the application of management knowledge in the field of professional activity.

### **BRIEF DESCRIPTION OF THE COURSE**

The origin and development of the theory and practice of organizational behavior will be examined, and then the main roles, skills and management functions with an emphasis on management effectiveness, illustrated by real-life examples and case studies, will be examined.

## Architectural design

CODE – ARC201

CREDIT – 6 (0/0/3/3)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

Discipline "Architectural design" is a major discipline as a mandatory component for the preparation of masters-architects.

The discipline is intended for basic training of masters in the field of architectural design of residential and civil facilities. The ability to connect the scientific and technical calculations of their research with the real problems of design: to create programs-tasks for design, to develop functional schemes, starting from the assigned scientific and theoretical tasks, to master the methodology of architectural design - this is the kind of knowledge and skills that allow undergraduates to make a scientifically sound choice, systematize and apply the basic provisions of their research work in the educational design of buildings and structures of various values.

The results obtained in the course of studying the discipline "Architectural design" enable the master not only to develop their own architectural and planning part of the project, but also directly participate in the preparation of methodical tasks for the educational design of various types of objects.

### BRIEF DESCRIPTION OF THE COURSE

The objectives of the discipline are to develop the knowledge and skills necessary for the future professional activity of architects in the field of design of civil buildings and structures; to acquire the skills of solving design problems from the organization of the necessary stages of design, the creation of creative methods of teaching architectural and artistic design.

Master's student in the process of studying the discipline develops architectural design of a building or complex of buildings in accordance with technical, environmental, social and cultural requirements and principles. The objectives of the study of this discipline is to develop an understanding of architectural design as a type of creative activity, the study of rules and regulations of design, the order of design, the organization of the sequence of works on architectural design, taking into account innovative tasks in architecture and urban planning.

## KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of studying the discipline "Architectural design" students should know:

- trends in the latest achievements of architectural science in the field of design, regional and national features of the design of buildings or complexes in accordance with modern requirements for architectural and planning solutions;
- goals and objectives of scientific and technical research and development in the field of design of residential and public buildings;
- the logic of building research and design models; techniques of drawing up of the design task; the techniques of search of new conceptual solving the project tasks;
- functional, structural, technical and figurative characteristics of the object of architecture of residential and public purpose;
- problems of innovative (conceptual) design;
- problems of specialized areas of design ("barrier-free", "earthquake-resistant", "climate-zoned", "energy-efficient", "eco-friendly");

know:

- to implement in educational design the creative idea at the proper compositional and graphic level, taking into account social, technical and artistic features of the designed object;
- to apply the principles of designing buildings in accordance with the required function, urban location, social order, and the horizon of expectations of consumers;
- technically competent to choose and use designs, materials and construction technologies, to carry out economic assessment and control the cost of construction and operation of buildings, structures and their complexes;
- to create an expressive image of a modern building in accordance with local climatic, ethnic, structural and technical design features;
- apply the knowledge gained in the study of related disciplines (to develop structural schemes and components, to use modern building materials, to carry out drawings in computer or manual graphics, to make working and demonstration models to develop modern composite solutions.).



## Urban design I

CODE – ARC202

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The discipline "Urban design" is designed to improve the theoretical level of undergraduate graduates in the field of urban knowledge, to get acquainted with the basic methods and techniques of urban design, necessary for decision-making in the practice of the architect. The purpose of the discipline – to give an idea of the place and role of urban planners in architectural practice and the basic techniques of its implementation.

### BRIEF DESCRIPTION OF THE COURSE

The study of the discipline "Urban design 1" will understand the place and role of professional urban design in the process of making design decisions in the field of urban planning, to get an idea of the basic techniques of urban analysis at different taxonomic levels of architectural and planning organization of the territory.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of studying the discipline, students should

Know:

- the method of formation of interdisciplinary models in the study of urban objects;
- social and ecological bases of development of town-planning systems;
- classification of tasks of urban planning analysis and planning;
- models of translation of social categories into spatial;
- socio-economic and environmental foundations of urban development systems;
- questions of composition of urban planning systems.

Know:

- apply methods of urban analysis in the process of architectural and urban design;
- solve different types of urban analysis tasks at different levels of urban design and forecasting;
- apply the methods of related disciplines in the process of urban analysis.

## Modern aspects of the history and theory of urban planning

CODE – ARC219

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The purpose of the development of the discipline to give professional knowledge and ideas, the concept of architectural and urban design as a practical project activity. The task of the discipline is to familiarize with some aspects of modern architectural science - history and theory of urban planning and architecture.

### BRIEF DESCRIPTION OF THE COURSE

To present a General picture of the development of modern architecture and urban planning. Acquaintance with modern concepts of architectural creativity of the leading architects of our country, foreign countries of the world on the example of the analysis of the most significant works of architecture and town planning of the XX–XXI centuries, and also with evolution of a stylistic orientation at various historical stages, acquaintance with laws of development of architectural styles.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of studying the discipline, students should know:

- modern styles and trends, their periodization;
- the main representatives of modern architecture and urban planning;
- the main works of modern architecture and urban planning;
- modern questions of the theory of the history of urban planning;
- modern problems of urban planning;
- the main problems arising in the design of modern architecture and urban planning.

be able to:

- analyze modern architectural monuments;
- determine the style of buildings and structures, as well as the construction time;
- determine the subject and object of architecture;
- to take a reasonable methodological position in the study of architecture;
- to solve creative tasks in architecture, urban planning and design.

## **The main directions of modern architecture**

CODE – ARC211

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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### **THE PURPOSE AND OBJECTIVES OF THE COURSE**

The main purpose of teaching the discipline "the Main directions of modern architecture" - to show undergraduates methods of architectural science as a set of techniques, tools, principles and rules by which architectural works are created, get new knowledge about architecture that can provide them with the knowledge necessary for practical and scientific work in the field of architecture.

The discipline "the Main directions of modern architecture" is intended to give the future teacher-architect not only the amount of knowledge and skills on the theory of architecture, but also the ability to see the system of social, technical and artistic problems, without which the creative personality of the architect can not develop.

### **BRIEF DESCRIPTION OF THE COURSE**

The Main directions of modern architecture" masters include the development of conceptual and categorical apparatus of the scientific discipline. Categories of architecture theory are called the basic concepts that reflect the most General and essential aspects of the theory of architecture of buildings and structures, their relationships and relationships. Only the totality of all categories gives undergraduates the opportunity to present the content of architecture as a whole, the logic of building architectural forms and organization of space, the laws of architecture, the development of knowledge and skills necessary for the future professional activity of teachers-architects in the field of teaching architectural design of civil buildings and structures; in the acquisition of undergraduates skills understanding the relationship of design of different types of buildings and complexes and conditions of urban situations, special regional conditions, etc.

The subject of the discipline "the Main directions of modern architecture" is the science designed to solve questions about the nature and specifics of the creation and design of architecture, its General theoretical laws. This discipline reveals the specifics of the existing theory of architecture, which considers architecture as an art to design and build buildings, structures, create a materially organized environment. The basis of the subject of the theory of architecture - the General patterns of occurrence, development and functioning of architecture as art, its essence, content and forms.

### **KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE**

As a result of the study of the discipline undergraduates should

Developed:	Discussed: meeting of the INSTITUTE	Approved: E&MB of Satbayev University	Page 25 of 44
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know:

- fundamentals of the subject of the theory of architecture - General patterns of occurrence, development and functioning of architecture as art, its essence, content and forms;
- methods of the theory of architecture as an art to design and build buildings and structures, to create a materially organized environment.
- philosophical, worldview approaches expressing the most universal principles of architectural thinking in the materialistic and idealistic relationship;
- other Sciences that are engaged in the study of the theory of architecture, for example, the history of architecture, philosophy, sociology, cultural studies, aesthetics, each of which studies architecture from a certain angle, considering one or another of its side, certain aspects;

know:

- to apply General scientific methods of analysis, synthesis, system and functional approach, methods of social experiment;
- apply techniques that are the result of mastering the theory of architecture of scientific achievements of technical, natural and human Sciences. These include specific sociological, statistical, technological, mathematical and other;
- to analyze architectural works in all stages of creation: from the birth of the idea in the head of the architect, to find out what caused this idea, what artistic means the result was achieved;
- available to present and defend their scientific position, continuously update and summarize their knowledge;

own:

- terminology of the discipline;
- the basics of the organization of forms of social and personal processes of organization of architectural forms, methods of creating concepts of architectural works.
- consistent and objective analysis of works of art and architecture, methods of clarifying their nature, driving principles, to fix their own impressions of modern and historical trends of architecture.

## The main problems of architectural creativity

CODE – ARC212

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

familiarity of undergraduates with the specifics of modern philosophical reflection on the world, on man, his natural and cultural activities, awareness of the essence and dynamics of the most important social processes, the place and role of architecture in the culture of the XXI century, the importance of the Union of architecture with philosophy.

### BRIEF DESCRIPTION OF THE COURSE

The content of the discipline covers a range of issues related to the study of philosophical concepts, methodology for the application of knowledge in a particular field of architecture and design of the architectural environment.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

The process of studying the discipline is aimed at the formation of the following competences':

- the ability to improve and develop their intellectual and cultural level;
- ability to comprehend and form architectural and town-planning decisions by integration of fundamental and applied knowledge in the sphere of architectural activity;
- ability to conduct comprehensive applied and fundamental research in order to substantiate conceptually new project ideas, solutions and strategies of project actions;
- the ability to research and develop innovative methods in the field of architectural pedagogy.

**Problems of formation in architecture and urban planning**

CODE – ARC214

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

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**THE PURPOSE AND OBJECTIVES OF THE COURSE**

The purpose of teaching the discipline is to give knowledge about the principles of creation of space and forms, their development and formation.

The main task of teaching the discipline is the development of students significant creative experience gained over the millennia of architects, historians of architecture, cultural historians, ethnologists, religious scholars, for their practical work. The course fills certain gaps in learning the basics of creating forms and spaces in practical creativity and connects it with the modern realities of design.

**BRIEF DESCRIPTION OF THE COURSE**

This complex of knowledge should help to develop the ability to understand and create sign systems, architectural forms, to know the patterns of their interaction with each other in ensembles; to be able to create themselves, using the knowledge accumulated over three thousand years of experience of artistic traditions of ethnic groups as Central Asia and architects around the world. To instill in them the skills and ability to navigate in the categories of "aesthetic and harmonic", to distinguish the semantic foundations of artistic forms, to give them an assessment and to find ways of subsequent evolution. Learn to use the creative methods of different schools and artistic traditions accumulated in the practice and history of ethnic groups. To give students theoretical bases for formation at them of principles of creation of original system of architecture of our region, without imitation and borrowing from any other systems in the world.

**KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE**

As a result of the study, the tasks of mastering the students ' knowledge, skills in the following sections are solved:

- knowledge of the foundations of the origin of the architecture of different ethnic groups, highlighting the work of the peoples of Central Asia, the origin, formation and decline of their artistic systems, while providing comparative views of scientists of different, even opposing, directions;
- develop the idea of patriotism, the concept of the value of the works of their predecessors in the development of creative methods in the world and their own practice;
- developed and assimilated methods and methods of analysis and synthesis to obtain creative ideas from the experience of both traditional aesthetic systems and modern masters of architecture;

Developed:	Discussed: meeting of the INSTITUTE	Approved: E&MB of Satbayev University	Page 28 of 44
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– the basic directions of development of art systems and styles, especially their manifestations in modern culture and ways of their application for practical design are developed.



## Social foundations of architecture

CODE – ARC221

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The discipline "Social foundations of architecture" is designed to deepen the knowledge of graduates-bachelors of the specialty "Architecture" in this discipline in accordance with the requirements for the level of training of undergraduates. The purpose of the discipline is to give an idea of the relationship between society and architecture, to reveal the content of the basic concepts of sociology of architecture and urban planning in relation to the practical problems of architectural design, to show its place and role in the system of modern sociological knowledge.

### BRIEF DESCRIPTION OF THE COURSE

The study of the discipline "Social foundations of architecture" will allow to understand the patterns of interaction of the population of the city with the artificial environment, the place and role of the population in the formation of architectural spaces, to master the methods of programming applied sociological research and methods of their implementation.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of studying the discipline, students should

Know:

- basic concepts of the discipline "Social foundations of architecture»;
- laws of interaction of the population of the city with the environment of artificial habitat;
- methods of drawing up programs of applied sociological researches and ways of their realization;

Know:

- to apply sociological methods in the process of architectural and urban planning;
- to solve social issues at different levels of urban design and forecasting;
- to prepare tasks for the design of socially significant objects, taking into account the knowledge of social needs, socio-demographic structure and population.

## Socio-demographic conditions in architecture

CODE – ARC220

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The discipline "Social foundations of architecture" is designed to deepen the knowledge of graduates-bachelors of the specialty "Architecture" in this discipline in accordance with the requirements for the level of training of undergraduates. The purpose of the discipline is to give an idea of the relationship between society and architecture, to reveal the content of the basic concepts of sociology of architecture and urban planning in relation to the practical problems of architectural design, to show its place and role in the system of modern sociological knowledge.

### BRIEF DESCRIPTION OF THE COURSE

The study of the discipline will allow to understand the patterns of interaction of the population of the city with the artificial environment, the place and role of the population in the formation of architectural spaces, to master the methods of drawing up programs of applied sociological research and methods of their implementation.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of studying the discipline, students should

Know:

- basic concepts of the discipline "Social foundations of architecture»;
- laws of interaction of the population of the city with the environment of artificial habitat;
- methods of drawing up programs of applied sociological researches and ways of their realization;

Know:

- to apply sociological methods in the process of architectural and urban planning;
- to solve social issues at different levels of urban design and forecasting;
- to prepare tasks for the design of socially significant objects, taking into account the knowledge of social needs, socio-demographic structure and population.

## Energy efficiency methodology in architecture

CODE – ARC208

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The purpose of the discipline is to give an idea of the place and role of energy-saving technologies in architecture and urban planning in accordance with the principles of sustainable development of human settlements. The objectives of the discipline "Methodology of energy efficiency in architecture" are:

- get an idea of the subject and the basic concepts of energy-efficient urban planning;
- to study the basic techniques and methods of improving the energy efficiency of urban facilities.

### BRIEF DESCRIPTION OF THE COURSE

The discipline "Methodology of energy efficiency in architecture" is designed to improve the theoretical level of undergraduates in the field of architectural knowledge, to get acquainted with the basic methods of energy-efficient architecture and urban planning, necessary for decision-making in the practice of the architect.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of the study of the discipline undergraduates should know:

- basic concepts of energy-efficient urban planning;
- design principles of energy-efficient buildings and structures;
- regional features of energy-efficient urban development in Kazakhstan;
- the main provisions of the concept of "green economy" and "green urban planning»;
- design features of "passive" and "active" house, multi-comfortable home and "smart home»;
- laws of interaction of the city with the environment;
- methods of measurement and assessment of energy efficiency of buildings and structures;

know:

- to apply the methods of energy-efficient urban planning in practice;
- evaluate the energy efficiency of buildings and structures.

## Energy efficiency in urban planning

CODE – ARC223

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The purpose of teaching the discipline. The discipline "energy Efficiency in urban planning" aims to:

- to acquaint students with the basic provisions of energy Efficiency in urban planning, with the nature of the research tasks facing the designer;
- to formulate the urban worldview of the student, aimed at understanding the social problems, the structure of settlement, spatial organization of the living environment;
- to identify the main trends in the development of the process of formation of cities;
- to help the student in solving complex urban problems, to achieve artistic expression of the city and its constituent elements;
- to highlight the social, technical, economic, architectural and planning aspects of modern urban planning.

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### BRIEF DESCRIPTION OF THE COURSE

The discipline is designed to improve the theoretical level of undergraduates in the field of urban planning knowledge, to get acquainted with the basic methods of energy-efficient architecture and urban planning, necessary for decision-making in the practice of the architect.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of studying the discipline, students should know:

- the main provisions and tasks of urban analysis, solved in the modern theory and practice of urban planning;
- fundamentals of functional-spatial and compositional analysis of urban planning systems of different types of hierarchical level;

know:

- use knowledge in the practice of educational urban design;
- develop creative thinking skills;
- expressive graphic means to implement architectural and urban planning ideas.

**Urban analysis**

CODE – ARC204

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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**THE PURPOSE AND OBJECTIVES OF THE COURSE**

The discipline "urban Analysis" is designed to improve the theoretical level of undergraduate graduates in the field of urban knowledge, to get acquainted with the basic methods and techniques of urban analysis necessary for decision-making in the practice of the architect. The purpose of the discipline – to give an idea of the place and role of urban analysis in architectural practice and the basic techniques of its implementation.

**BRIEF DESCRIPTION OF THE COURSE**

The study of the discipline "Urban analysis" will understand the place and role of professional urban analysis in the process of making design decisions in the field of urban planning, to get an idea of the basic techniques of urban analysis at different taxonomic levels of architectural and planning organization of the territory.

**KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE**

As a result of studying the discipline, students should

Know:

- basic concepts of urban analysis;
- the method of formation of interdisciplinary models in the study of urban objects;
- social and ecological bases of development of town-planning systems;
- classification of tasks of urban planning analysis and planning;
- models of translation of social categories into spatial;
- socio-economic and environmental foundations of urban development systems;
- questions of composition of urban planning systems.

Know:

- apply methods of urban analysis in the process of architectural and urban design;
- solve different types of urban analysis tasks at different levels of urban design and forecasting;
- apply methods of related disciplines in the process of urban analysis.

## Urban design II

CODE – ARC202

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The discipline "Urban design II" is a continuation of the mandatory course "Urban design I" and is designed to improve the theoretical level of graduates of the bachelor in the field of urban knowledge, to get acquainted with the basic methods and techniques of urban design necessary for decision-making in the practice of the architect. The purpose of the discipline – to give an idea of the place and role of urban planners in architectural practice and the basic techniques of its implementation.

### BRIEF DESCRIPTION OF THE COURSE

The study of the discipline "Urban design II" will understand the place and role of professional urban design in the process of making design decisions in the field of urban planning, to get an idea of the basic techniques of urban analysis at different taxonomic levels of architectural and planning organization of the territory.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of studying the discipline, students should

Know:

- the method of formation of interdisciplinary models in the study of urban objects;
- social and ecological bases of development of town-planning systems;
- classification of tasks of urban planning analysis and planning;
- models of translation of social categories into spatial;
- socio-economic and environmental foundations of urban development systems;
- questions of composition of urban planning systems.

Know:

- apply methods of urban analysis in the process of architectural and urban design;
- solve different types of urban analysis tasks at different levels of urban design and forecasting;
- apply the methods of related disciplines in the process of urban analysis.



## Typology of architectural spaces

CODE – ARC222

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

### THE PURPOSE AND OBJECTIVES OF THE COURSE

The discipline "Typology of architectural spaces" is a major discipline as a mandatory component for the specialty for the scientific and pedagogical profile of training masters architects. The main purpose of teaching the discipline "Typology of architectural spaces" - to show undergraduates methods of architectural science as a set of techniques, tools, principles and rules by which architectural works are created, get new knowledge about architecture that can provide them with the knowledge necessary for practical and scientific work in the field of architecture.

### BRIEF DESCRIPTION OF THE COURSE

The subject of the discipline "Typology of architectural spaces" is the science designed to solve the problems of the nature and specifics of the creation and design of architecture, its General theoretical laws. This discipline reveals the specifics of the existing theory of architecture, which considers architecture as an art to design and build buildings, structures, create a materially organized environment. The basis of the subject of the theory of architecture - the General patterns of occurrence, development and functioning of architecture as art, its essence, content and forms.

The discipline "Typology of architectural spaces" is intended to give the future architect not only the amount of knowledge and skills on the theory of architecture, but also the ability to see the system of social, technical and artistic problems, without which the creative personality of the architect can not develop.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

The study of the discipline "Typology of architectural spaces" masters includes the development of conceptual and categorical apparatus of the scientific discipline. Categories of architecture theory are called the basic concepts that reflect the most General and essential aspects of the theory of architecture of buildings and structures, their relationships and relationships. Only the totality of all categories gives undergraduates the opportunity to present the content of architecture as a whole, the logic of architectural forms and organization of space, the laws of architecture, the development of knowledge and skills necessary for the future professional activity of architects in the field of teaching architectural design of civil buildings and structures; in the acquisition of undergraduates skills in understanding the relationship of design of different types of



buildings and complexes and conditions of urban situations, special regional conditions, etc.

As a result of the study of the discipline undergraduates should:

Know:

- fundamentals of the subject of the theory of architecture - General patterns of occurrence, development and functioning of architecture as art, its essence, content and forms;
- methods of the theory of architecture as an art to design and build buildings and structures, to create a materially organized environment.
- philosophical, worldview approaches expressing the most universal principles of architectural thinking in the materialistic and idealistic relationship;
- other Sciences that are engaged in the study of the theory of architecture, for example, the history of architecture, philosophy, sociology, cultural studies, aesthetics, each of which studies architecture from a certain angle, considering one or another of its side, certain aspects;

Be able to:

- to apply General scientific methods of analysis, synthesis, system and functional approach, methods of social experiment;
- apply techniques that are the result of mastering the theory of architecture of scientific achievements of technical, natural and human Sciences. These include specific sociological, statistical, technological, mathematical and other;
- to analyze architectural works in all stages of creation: from the birth of the idea in the head of the architect, to find out what caused this idea, what artistic means the result was achieved;
- available to present and defend their scientific position, continuously update and summarize their knowledge;

Own:

- terminology of the discipline;
- the basics of the organization of forms of social and personal processes of organization of architectural forms, methods of creating concepts of architectural works.
- consistent and objective analysis of works of art and architecture, methods of clarifying their nature, driving principles, to fix their own impressions of modern and historical trends of architecture.

## Artificial environment of human activity

CODE – ARC213

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The purpose of the development of the discipline "Artificial environment of human activity" to give professional knowledge and ideas, the concept of architectural and urban design as a practical project activity.

### BRIEF DESCRIPTION OF THE COURSE

The task of the discipline is to familiarize with some aspects of modern architectural science - history and theory of urban planning and architecture. To present a General picture of the development of modern architecture and urban planning. Acquaintance with modern concepts of architectural creativity of the leading architects of our country, foreign countries of the world on the example of the analysis of the most significant works of architecture and town planning of the XX–XXI centuries, and also with evolution of a stylistic orientation at various historical stages, acquaintance with laws of development of architectural styles.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of studying the discipline, students should know:

- modern styles and trends, their periodization;
- the main representatives of modern architecture and urban planning;
- the main works of modern architecture and urban planning;
- modern questions of the theory of the history of urban planning;
- modern problems of urban planning;
- the main problems arising in the design of modern architecture and urban planning.

know:

- analyze modern architectural monuments;
- determine the style of buildings and structures, as well as the construction time;
- determine the subject and object of architecture;
- to take a reasonable methodological position in the study of architecture;
- to solve creative tasks in architecture, urban planning and design.

## Psychology of architecture

CODE – ARC216

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The purpose of teaching the discipline is to give the student:

- a General idea of the environmental approach in modern architectural design; examples from domestic and foreign experience, to show the leading trends in environmental shaping;
- to provide the student with certain skills necessary for practical and scientific work in this field; the study of the history of aesthetics, its ideological foundations; the study of aesthetic categories, aesthetic values and properties; the laws of their implementation on the examples of architectural monuments and design samples;
- formation of theoretical and visual representations of aesthetics as a science in its projection on the monuments of architecture and design;
- training in practical skills of aesthetic categories, values and properties in creative activity, evaluation of works of architecture and design.

The objectives of the discipline are to expand students 'creative vision in the design of architectural objects of any level, from the interior to urban spaces; to gain students' understanding that any object of formation is a subtle unity of "internal" and "external"; to the realization that any volume is associated with the environment and is part of it.

### BRIEF DESCRIPTION OF THE COURSE

This course is relatively new for traditional architectural education. Modern approaches to the formation of the architectural environment have not yet found a sufficient theoretical basis. Moreover, with the development of the habitat, the tasks of its design are even more expanded and complicated. Therefore, the teaching of the discipline focuses primarily on the development of skills and approaches to the system, integrated design of the modern human environment, subject and spatial improvement of the environment.

## KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of studying the discipline, students should know:

- creative tasks of environment design, combining millennial experience of construction of structures and modern methods and forms of their equipment;
- the phenomenon of the architectural environment as a new professional understanding of the world, which is created by society;
- targeting the design of the environment - it is always intended for a particular use or process and, therefore, changes with them;
- the laws of the aesthetic organization of the environment, where architects and designers perform a single task, sometimes in one person;
- that the synthesis of architecture and design is carried out at all levels of design – from the interior of the premises, the architectural ensemble to the fragments of the urban environment – streets, squares, parks, etc.

know:

- analyze environmental objects in different categories (space, function, composition, scale, unity, image, etc.);
- apply the skills gained in the study of other architectural disciplines to achieve quality results in the design of the environment;
- formulate a set of requirements and tasks for the formation of environmental objects for various purposes;
- constantly expand the range of creative tools to perform complex design tasks;
- to use the methods of aesthetic and design integration of elements of the architectural environment;
- to use methods of aesthetic and functional optimization of environmental architecture of objects in their reconstruction or conversion.

## Semantics in the architecture

CODE – ARC215

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The main purpose of teaching the discipline "Semantics in architecture": to give the undergraduate a General idea of the stages of the historical development of intuitive foresight and modern methods in the field of architectural semantics in the world; to acquaint the undergraduate with the prognostic concepts in planning, pre-design research and design; to give an idea of how to compile architectural and urban forecasts, methods of checking their quality and practical suitability.

### BRIEF DESCRIPTION OF THE COURSE

The discipline "Semantics in architecture" should help the future architect to present architectural design as a subject involved in the main processes of development of modern society in social, scientific, technical and aesthetic aspects. The subject of the discipline is a set of ideas of leading modern scientists and architects – practitioners about the ways of architecture development, based on modern methods of forecasting.

The objectives of the discipline are: to expand undergraduates creative vision of architectural design as a subject that develops over time; to acquire their understanding of the methods of conducting pre-design studies that affect the correct choice of architectural and planning solutions of the object and the extension of its active social life; to develop undergraduates ' understanding of the dynamism of all aspects of society, to try to simulate the possible circumstances of the "life" of the designed object in the foreseeable future, as well as a clear vision that concentrating only on today, we are extremely impoverished opportunities for functional and scientific and technical development of architecture.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of the study of the discipline undergraduates should know:

- creative design tasks of architectural objects in the aspect of their temporary existence with the connection of thousands of years of experience in construction and design with a modern vision of social prospects;
- the role of scientific foresight and forecasting in the creation of modern architectural and spatial objects;
- the main methods of prognostic approach in architectural and urban design;

Developed:	Discussed: meeting of the INSTITUTE	Approved: E&MB of Satbayev University	Page 41 of 44
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– the need to overcome the limited vision of the design object only in the categories of today, and most importantly the importance of the active position of the architect in defending his ideas at all levels of discussion of the project;

know:

– to analyze the main dynamic factors affecting the duration of social service of the designed object;

– formulate a set of requirements and tasks for the formation of architectural objects and elements of the architectural environment for various purposes in the prognostic aspect;

– to use the methods of modern prognostics in project and scientific activities;

– to improve your creative approach through the constant study of all modern achievements of human development in their impact on the architectural environment;

own:

– terminology of the discipline;

– the basics of the organization of forms of social and personal processes of organization of architectural forms, methods of creating concepts of architectural works.

– consistent and objective analysis of works of art and architecture, methods of clarifying their nature, driving principles, to fix their own impressions of modern and historical trends of architecture.

**Registration and defense of the master's thesis**

CODE – ECA206

CREDIT – 12

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The purpose of the master's thesis is:

demonstration of the level of scientific/research qualification of undergraduates, the ability to independently conduct scientific research, testing the ability to solve specific scientific and practical problems, knowledge of the most common methods and techniques for their solution.

**BRIEF DESCRIPTION**

Master's thesis – final qualifying scientific work, which is a synthesis of the results of independent research undergraduate one of the actual problems of a particular specialty of the relevant branch of science, which has internal unity and reflects the progress and results of the development of the chosen topic.

Master's thesis – the result of the research /experimental research work of the undergraduate, conducted during the entire period of study undergraduate.

Pre-design studies of the object of dissertation research; conducting field and research and design studies; attribution of the building as an object of material culture, the definition of its artistic, historical value, technical condition and degree of preservation; the choice of the optimal model of restoration of the object of material culture, the development of scientific and design documentation necessary for the restoration and adaptation of the monument for modern use. Demonstration of acquired knowledge and skills in development in the field of protection, restoration and reconstruction of architectural heritage.

The defense of the master's thesis is the final stage of the master's degree.

Master's thesis must meet the following requirements:

- the work should be carried out research or solve current problems in the field of architecture and urban planning;
- the work should be based on the identification of important scientific problems and their solution;
- decisions should be scientifically grounded and reliable, have internal unity;
- dissertation work should be written alone.



## Content

1	Scope and content of the program	5
2	Requirements for applicants	7
3	Requirements for completion of studies and diploma	8
4	Working curriculum of the educational program	10
5.	Modular educational program	12
6	Descriptors of level and scope of knowledge, skills and competences	14
7	Competencies upon completion of the training	14
8	Appendix to the diploma according to the standard ECTS	17