

**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**

**8D07302 – «Architecture and urban planning»**

**Doctor of Philosophy (PhD) on the curriculum program  
8D07302 – «Architecture and urban planning»**


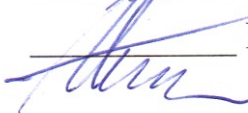
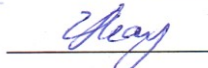
1st edition  
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**Almaty 2020**

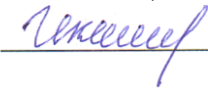
Developed:	Discussed: meeting of the INSTITUTE	Approved: E&MB of Satbayev University	Page 1 of 27
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**The program is drawn up and signed by the parties:**

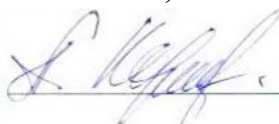
**From KazNRTU named after K. I. Satbayev:**

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 y.

**Qualification:**

Level 8 of the National qualifications framework:

8D07 Engineering, manufacturing and construction industries:

073 Architecture and construction:

8D07302– Architecture and urban planning (doctorate).

**Professional competence:**

Knowledge at the most advanced level in the field of science and professional activity. Use special knowledge for critical analysis, evaluation of the synthesis of new complex ideas that are at the forefront of this field. Evaluation and selection of information necessary for the development of activities. Expand or rethink existing knowledge and/or professional practices within a specific area or at the intersection of areas. Demonstrate the ability of sustained interest in developing new ideas or processes and a high level of understanding of learning processes. Methodological knowledge in the field of innovation-professional activity.

## **Short description of the program:**

### **1. Purposes**

The educational program is aimed at the training of scientific and pedagogical personnel with the award of the degree of doctor of philosophy (PhD) or doctor of profile 8D07302 – "Architecture and urban planning". Doctor's degree offers fundamental educational, methodological and research training and in-depth study of disciplines in the following areas of science: the typology and history of architectural objects of residential and public use, social/cultural anthropology of housing, the history of Kazakh architecture, urban planning/urban studies.

### **2. Types of employment**

Doctoral graduates 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;
- research work in the field of architecture and urban planning;
- scientific and pedagogical activity in universities, colleges of architectural and construction profile;
- educational (pedagogical);
- methodical.

### **3. Sphere of professional activity:**

- educational activity in higher, vocational educational institutions of architectural and construction profile;
- scientific and management activities in research and production centers, research institutes, departments of the State body of management of enterprises and the private sector;
- 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, architectural formations of various forms of ownership.

**4. Objects of professional activity:**

- Higher, vocational educational institutions of architectural and construction profile;
- Research and production centers, research institutes of architectural profile;
- Structural units of the departments of architecture and urban planning of regional and district akimats,
- Architectural formation of different forms of ownership.

**5. Subject of professional activity:**

- планирование и организация научных исследований в области архитектуры и градостроительства для решения конкретных исследовательских, информационно-поисковых, методических задач в области архитектуры.
- решение вопросов проектирования жилых - общественных зданий, их комплексов;
- функциональная организация конструктивных решений, эстетики и гармонии проектируемых объектов;
- изучение опыта проектирования населенных мест, гражданских зданий и пропаганда достижений в области архитектуры;
- организация учебно-воспитательного процесса в организациях образования по профилю;
- организация и проведение мероприятий по сохранению и реставрация памятников архитектуры и др.

## **PASSPORT OF THE EDUCATIONAL PROGRAM**

### **1 Scope and content of the program**

The educational program of preparation of the doctor of philosophy (PhD) has a scientific and pedagogical orientation and assumes fundamental educational, methodological and research preparation and in-depth study of disciplines in the corresponding directions of Sciences for system of the higher and postgraduate education and the scientific sphere.

The educational program of training of the doctor on a profile assumes fundamental educational, methodological and research preparation and in-depth study of disciplines in the corresponding directions of science for branches of national economy, the social sphere: education, medicine, the right, art, economy, business administration and in the field of national security and military Affairs.

Educational programs of doctoral studies in terms of professional training are developed on the basis of studying the experience of foreign universities and research centers that implement accredited training programs for PhD or doctors in the profile.

The content of the educational program profile doctoral established by the University itself.

The main criterion for the completion of the educational process for the preparation of doctors of philosophy (PhD) (doctor of profile) is the development of a doctoral student at least 180 academic credits, including all types of educational and scientific activities.

The duration of doctoral studies is determined by the volume of academic credits. When mastering the established volume of academic credits and achieving the expected results of training for the degree of doctor of philosophy (PhD) or the profile of the educational program of doctoral studies is considered to be fully mastered.

Training in doctoral studies is carried out on the basis of master's degree programs in two areas:

- 1) scientific and pedagogical with term of training of not less than two years;
- 2) profile with a training period of not less than one year.

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

In the implementation of the educational program of postgraduate education 8D07302–"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 8D07302–"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.

The total number of credits for this educational program – 180 credits, of which: the total number of credits for theoretical training – 30 credits for practical training (all types of practices) – 23 credits, research work of a doctoral student, including internships and doctoral dissertation – 115 credits, writing and defending a doctoral thesis – 12 credits.

Basic disciplines are aimed at in-depth study of the specifics of architectural science, its concepts, techniques, directions of development, etc. Profile disciplines allow to study the most relevant, advanced technologies and concepts in architectural design (such as parametric modeling, sustainable architecture, regional identity, modern designs and materials).

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

The main objectives of the educational program doctor of philosophy (PhD) or doctor of profile 8D07302–"Architecture and urban planning "are:

- ensuring the quality of education through the presentation of mandatory requirements for the level of training of doctoral students and educational activities of higher educational institutions;
- regulation of the rights of subjects of educational activity;
- improving the objectivity and informative assessment of doctoral students and the quality of educational programs;
- creation of conditions for academic mobility of doctoral students;
- ensuring the functioning of the single educational space of Kazakhstan;
- ensuring the recognition of documents of the Republic of Kazakhstan on the award of the degree of doctor (PhD) or doctor in profile in the international educational space and the international labor market.

## 2 Requirements for applicants

Persons who have a master's degree and work experience of at least 1 (one) year or have completed training in residency are admitted to the doctoral program.

Admission to the number of doctoral students is carried out by the admission commissions of Universities and research organizations on the basis of the entrance exam for groups of educational programs of doctoral studies and a certificate confirming foreign language proficiency in accordance with the European competence (standards) of foreign language proficiency.

When enrolling in universities, doctoral students independently choose an educational program from the appropriate group of educational programs.

Enrollment of persons for targeted training of doctors of philosophy (PhD) on the state educational order is carried out on a competitive basis.

The procedure for admission of citizens to doctoral studies 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 doctoral students 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 doctoral student must have all the prerequisites necessary for the development of the relevant professional curriculum of doctoral studies. The list of necessary prerequisites is determined by the higher education institution independently.

In the absence of the necessary prerequisites, the doctoral student is allowed to master them on a fee basis. In this case, training in doctoral studies begins after the full development of doctoral prerequisites.



### 3 Requirements for completion of studies and diploma

Persons who have mastered the educational program of doctoral studies and defended their doctoral dissertation, with a positive decision of the dissertation councils of the UNIVERSITY with a special status or the Committee for control in the field of education and science of the Ministry of education and science of the Republic of Kazakhstan on the results of the examination, awarded the degree of doctor of philosophy (PhD) or doctor in profile and issued a state diploma with an Appendix (transcript).

Persons who have received a PhD degree, to deepen scientific knowledge, solve scientific and applied problems on a specialized topic performs a postdoctoral program or conduct research under the guidance of a leading scientist of the chosen University.

#### 3.1 Requirements for key competencies of doctoral graduates:

##### *1) be familiar with:*

- on the main stages of development and paradigm shift in the evolution of science;
- on the subject, ideological and methodological specifics of natural (social, humanitarian, economic) Sciences;
- about scientific schools of the corresponding branch of knowledge, their theoretical and practical developments;
- on scientific concepts of world and Kazakhstan science in the relevant field;
- on the mechanism of implementation of scientific developments in practice;
- norms of interaction in the scientific community;
- about the teaching and research ethics research scientist;

##### *2) to know and understand:*

- current trends, trends and patterns of development of domestic science in the context of globalization and internationalization;
- methodology of scientific knowledge;
- achievements of world and Kazakhstan science in the relevant field;
- (recognize and accept) the social responsibility of science and education;
- perfect foreign language for scientific communication and international cooperation;



3) *be able to:*

- organize, plan and implement the research process;
- analyze, evaluate and compare different theoretical concepts in the field of research and draw conclusions;
- analyze and process information from various sources;
- to conduct independent scientific research, characterized by academic integrity, on the basis of modern theories and methods of analysis;
- generate your own new scientific ideas, communicate your knowledge and ideas to the scientific community, expanding the boundaries of scientific knowledge;
- choose and effectively use modern research methodology;
- plan and predict their further professional development;

4) *have the skills:*

- critical analysis, evaluation and comparison of various scientific theories and ideas;
- analytical and experimental scientific activities;
- planning and forecasting the results of the study;
- public speaking and public speaking at international scientific forums, conferences and seminars;
- scientific writing and scientific communication;
- planning, coordination and implementation of research processes;
- systematic understanding of the field of study and demonstrate the quality and effectiveness of the selected scientific methods;
- participation in scientific events, fundamental scientific domestic and international projects;
- leadership management and team management;
- responsible and creative attitude to scientific and scientific-pedagogical activity;
- carrying out patent search and experience in the transfer of scientific information using modern information and innovative technologies;
- protection of intellectual property rights to scientific discoveries and developments;
- free communication in a foreign language;

5) *be competent:*

- in the field of scientific and scientific-pedagogical activity in the conditions of rapid updating and growth of information flows;
- in carrying out theoretical and experimental research;
- in the formulation and solution of theoretical and applied problems in scientific research;
- to conduct a professional and comprehensive analysis of the problems in the relevant field;
- in matters of interpersonal communication and human resource management;
- in matters of University training;
- in the examination of scientific projects and research;
- to ensure continuous professional growth.

3.2 Requirements for research work of the student on the program of doctor of philosophy (PhD):

- 1) compliance with the main problems of the educational program of doctoral studies, which defended his doctoral thesis;
- 2) relevant and contains scientific novelty and practical significance;
- 3) based on modern theoretical, methodological and technological achievements of science and practice;
- 4) based on modern methods of data processing and interpretation using computer technology;
- 5) performed using modern methods of scientific research;
- 6) contain research (methodical, practical) sections on the basic protected provisions.

3.3 Requirements for the organization of practices:

The practice is carried out in order to develop practical skills of scientific, scientific, pedagogical and professional activities.

The educational program of doctoral studies includes:

- 1) pedagogical and research practice – for students on the program of doctor of philosophy;
- 2) practical training – for students on the program profile doctoral.

During the period of pedagogical practice, doctoral students, if necessary, are involved in conducting classes in bachelor's and master's degrees.

The research practice of the doctoral student is carried out in order to study the latest theoretical, methodological and technological achievements of domestic and foreign science, as well as to consolidate practical skills, the use of modern methods of scientific research, processing and interpretation of experimental data in the dissertation research.

Practical training of doctoral students is carried out in order to consolidate the

theoretical knowledge gained in the learning process, and improve professional level.

The content of research and production practices is determined by the theme of the doctoral dissertation.

## 4 Working curriculum of the educational program

### 4.1. Duration of training: 3 years

Full-time study

Term of study: 3 years

Academic degree: Doctor of Philosophy (PhD)

Year of study	Code	Name of course	Component	Academic credits	lecture/ lab/ prac/DSIW	Prerequisites	Code	Name of course	Component	Academic credits	lecture/ laboratory/ practice	Prerequisites
1	1 semester						2 semester					
	MET321	Research methods	BD IC	6	2/0/1/3		AAP345	Doctoral student research work, including internships and doctoral dissertations	DSRW	24		
	LNG304	Academic writing	BD IC	6	2/0/1/3		AAP350	Pedagogical practice	BD	10		
	1101	ELECTIVE	BD OC	6								
	1102	ELECTIVE	PS OC	6								
	1103	ELECTIVE	PS OC	6								
	In total		30				In total		34			
2	3 semester						4 semester					
	AAP345	Doctoral student research work, including internships and doctoral dissertations	DSRW	24			AAP346	Doctoral student research work, including internships and doctoral dissertations	DSRW	25		
	AAP349	Research scientific training	PS	10								
		In total		34				In total		25		
3	5 semester						6 semester					
	AAP346	Doctoral student research work, including internships and doctoral dissertations	DSRW	25			AAP346	Doctoral student research work, including internships and doctoral dissertations	DSRW	25		
							ECA303	Writing and defending doctoral dissertation	FA	12		
		In total		25				In total		37		
							In all		185			

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)	28
A cycle of principal subjects (PS IC, PS OC)	22
<b>All on the theoretical classes:</b>	<b>50</b>
MSSR	123
Registration and defense of the master's thesis (RaDMT)	12
<b>In TOTAL:</b>	<b>185</b>

## Catalog of elective disciplines

Academic Degree: Doctor of Philosophy (PhD)

Term of study: 3 years

Basic Discipline - Components of choice - 12 credits					
	Code	Name of disciplines	Academic credits	lecture/ laboratory/ practice/IWS	Semester
1101	ARC300	Global concepts and paradigms in architecture	6	1/0/2/3	1
	ARC301	World experience in organization and planning of scientific research	6	1/0/2/3	
		<b>Total:</b>	<b>12</b>		
Profile Discipline - Components of choice - 24 credits					
	Code	Name of disciplines	Academic credits	lecture/ laboratory/ practice/IWS	Semester
1102	ARC304	Principles of sustainable architecture and urbanism	6	1/0/2/3	1
	ARC307	Sociology of architecture	6		
1103	ARC302	Perspective directions of formation of architecture of residential buildings	6	1/0/2/3	1
	ARC303	Perspective directions of formation of architecture of public buildings	6		
		<b>Total:</b>	<b>24</b>		

## 5 Modular educational program

Com pone nt	Code.	Name of course	Semester	Academic credits	lecture	laboratory	practice	DSIW	Control type	Department
Profile training module (28 credits)										
Basic disciplines (BD)										
Institute component										
BD 1.1.1	LNG304	Academic writing	1	6	2	0	1	3	Exam	EL
BD 1.2.1	MET321	Research methods	1	6	2	0	1	3	Exam	MPHE& TSM
Optional component										
Conceptual Research Module										
BD 1.3.1	ARC300	Global concepts and paradigms in architecture	1	6	1	0	2	3	Exam	Architecture
BD Д 1.3.2	ARC301	World experience in organization and planning of scientific research							Exam	Architecture
Practice-oriented module										
BD	AAP350	Pedagogical practice	2	10					Report	Architecture
Profiling disciplines (PD) (22 credit)										
Optional component										
Architecture Design Research Module										
PS 1.1.1	ARC304	Principles of sustainable architecture and urbanism	1	6	1	0	2	3	Exam	Architecture
PS 1.1.2	ARC307	Sociology of architecture							Exam	Architecture
PS 1.2.1	ARC302	Perspective directions of formation of architecture of residential buildings	1	6	1	0	2	3	Exam	Architecture
PS 1.2.2	ARC303	Perspective directions of formation of architecture of public buildings							Exam	Architecture
Practice-oriented module										
PS	AAP349	Research scientific training	3	10					Report	Architecture

<b>Research module (123 credit)</b>										
ATT	AAP345	Doctoral student research work, including internships and doctoral dissertations	2	24					Report	Architecture
ATT	AAP345	Doctoral student research work, including internships and doctoral dissertations	3	24					Report	Architecture
ATT	AAP345	Doctoral student research work, including internships and doctoral dissertations	4	25					Report	Architecture
ATT	AAP345	Doctoral student research work, including internships and doctoral dissertations	5	25					Report	Architecture
ATT	AAP345	Doctoral student research work, including internships and doctoral dissertations	6	25					Report	Architecture
<b>Final certification module (12 credits)</b>										
FE	ECA303	Writing and defending doctoral dissertation	6	12					Defense of dissertatio ns	
<b>Total credits</b>				<b>185</b>						



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

The third level descriptors within the Comprehensive qualifications framework of the European higher education area (EHEA) reflect the learning outcomes that characterize the learner's abilities:

- 1) demonstrate a systematic understanding of the field of study, mastering the skills and research methods used in the field of architecture and urban planning;
- 2) demonstrate the ability to think, design, implement and adapt an essential research process with a scientific approach;
- 3) contribute their own original research to the expansion of the boundaries of the scientific field, which deserves publication at the national or international level;
- 4) critically analyze, evaluate and synthesize new and complex ideas;
- 5) communicate their knowledge and achievements to colleagues, the scientific community and the General public;
- 6) promote knowledge-based technological, social or cultural development in the academic and professional context.

## **7 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.

## Research methods

КОД – МЕТ321

КРЕДИТ – 6 (2/0/1/3)

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The training course allows you to gain knowledge on the basic theoretical principles, technologies, operations, practical methods and techniques for conducting scientific research based on the modern achievements of domestic and foreign scientists and master the skills of choosing the topic of scientific research, scientific search, analysis, experimentation, data processing, obtaining valid effective solutions using information technology.

### BRIEF DESCRIPTION OF THE COURSE

The course includes: the concept of science and research, research methods and methodology, methods for collecting and processing scientific data, principles for organizing research, methodological features of modern science (differentiation, integration, a systematic approach, abstraction, concretization, synergetic paradigm, evolutionism , logic, instrumental analysis, etc.), the development of science and research, the role of technical sciences, informatics and engineering research in modern science, the structure of technical sciences, the application of general scientific, philosophical and special methods (including marketing and investment) of scientific research in theory and practice.

## Academic writing

КОД – LNG304

КРЕДИТ – 6 (2/0/1/3)

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

The purpose of the course is to develop skills and competencies in the field of research and the formation of skills for writing qualifying theses.

### BRIEF DESCRIPTION OF THE COURSE

The study of the discipline is based on the development and improvement of skills in the field of written scientific and methodological relations, necessary for effective communication in the scientific and academic environment, providing a high level of training for doctoral students. The objectives of the discipline are to familiarize doctoral students with the basic requirements for writing in a scientific language.; formation of skills to Express motivated ideas and opinions in writing using professional vocabulary and terminology; development of text editing skills; training in ways to correctly and logically build the structure of scientific research; preparation for writing articles, scientific papers and annotations; learning ways to freely and motivated presentation of thoughts on a scientific and professional problem.

## **Global concepts and paradigms in architecture**

CODE – ARC300

CREDIT – 6 (2/0/1/3)

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

The main purpose of teaching the discipline is to present to doctoral students the global concepts and paradigms in architecture by demonstrating the methods of architectural science as a set of techniques, tools, principles and rules by which architectural works are created, new knowledge about architecture is obtained.

The objectives of the course are: the definition of trends in the development of modern architecture, its essence, genre identity, language and semantic orientation; the definition of new approaches to the analysis of modern architecture, both in the context of the main categories of knowledge and on the basis of other criteria adequate to the analyzed reality; the development of scientific methodology based on the understanding of modern architecture not only as a new form of art, but also as a form of its modification in the context of globalization.

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

The subject of the discipline is the world concepts and paradigms in architecture, reflecting 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 – the General patterns of occurrence, development and functioning of architecture as an art, its essence, content and form.

The discipline is intended to give the future teacher - and researcher-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**

As a result of studying the discipline doctoral students 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;

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;
- bases of the organization forms of social and personal processes of the organization of architectural forms, methods of creation of 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.

## **World experience in organization and planning of scientific research**

CODE – ARC301

CREDIT – 6 (2/0/1/3)

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

Training of specialists in the field of architecture and urban planning, acquiring the necessary skills for independent research and management of scientific projects, obtaining and consolidating theoretical knowledge and ideas about the world experience of scientific activity in the field of architecture and urban planning.

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

Research work is one of the most important in the development of doctoral competencies. Research work provides practical consolidation of the content of theoretical training in the field of methodology and methodology of scientific research, deepening knowledge on the chosen subject. The discipline provides the development of competencies related to the analytical and administrative abilities of the doctoral student and his holistic vision of professional activity. The study of the discipline is based on the knowledge of all disciplines of professional, natural science and Humanities cycles.

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

As a result of studying the discipline doctoral students should:

- to have an idea of the General development of the scientific process, the advanced international level in the field of science and professional activity;
- know the methods and principles of organization and planning of scientific research, the structure and content of research, the basic requirements for the preparation and protection of theses.

## **Perspective directions of formation of architecture of residential buildings**

CODE – ARC302

CREDIT – 6 (1/0/2/3)

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

The course is aimed at the study of promising directions of formation of architecture of residential buildings; the formation of ideas about the main trends in the development of architecture of residential buildings and their improvement at the present stage, providing students with certain analytical skills in the framework of the discipline.

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

During the study of the course, students are introduced to promising areas of formation of architecture of residential buildings, forms and methods of organization of architecture of residential buildings, features, characteristics of modern buildings and the main trends of the latest achievements of architectural science in the field of innovative (conceptual) design.

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

As a result of studying the discipline doctoral students should:

- to have an idea of urgent and actual problems in perspective directions of formation of architecture of residential buildings, to consider and study the basic reference materials reflecting modern architectural and typological characteristics of objects of civil appointment; to form in-depth knowledge on questions of development of architecture of residential buildings taking into account the methodological approach of studying of discipline;
- to be able to systematize and analyze the presented material, to be able to apply it in scientific, experimental and practical activities;
- to have the techniques of search of new conceptual solving the project tasks;
- to distinguish functional, structural, technical and figurative characteristics of the object of residential architecture.



## **Perspective directions of formation of architecture of public buildings**

CODE – ARC303

CREDIT – 6 (1/0/2/3)

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

The course is aimed at the study of promising areas of formation of architecture of public buildings; the formation of ideas about the main trends in the development of architecture of public buildings and their improvement at the present stage, providing students with certain analytical skills in the framework of the discipline.

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

During the study of the course, students are introduced to promising areas of formation of architecture of public buildings, forms and methods of organization of architecture of public buildings, features, characteristics of modern buildings and the main trends of the latest achievements of architectural science in the field of innovative (conceptual) design.

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

As a result of studying the discipline doctoral students should:

- to have an idea of urgent and actual problems in the perspective directions of formation of architecture of public buildings, to consider and study the main reference materials reflecting modern architectural and typological characteristics of objects of civil appointment;
- to form in-depth knowledge on the development of architecture of public buildings, taking into account the methodological approach of the discipline;
- to be able to systematize and analyze the presented material, to be able to apply it in scientific, experimental and practical activities;
- to have the techniques of search of new conceptual solving the project tasks;
- to distinguish between functional, structural, technical and figurative characteristics of the object of public architecture.

## Principles of sustainable architecture and urbanism

CODE – ARC304

CREDIT – 6 (1/0/2/3)

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### THE PURPOSE AND OBJECTIVES OF THE COURSE

Get an in-depth understanding of the phenomenon of sustainable development in relation to architecture and urban planning, aimed at the spatial organization of the population. Consider various aspects of sustainable development, highlight the role of specially protected natural areas, the cultural heritage of mankind. Learn how to work with the mechanisms of assessment and monitoring of architecture and urban development in the direction of sustainable development.

### BRIEF DESCRIPTION OF THE COURSE

The discipline consists of lectures and practical classes. The lecture course contains extensive information about sustainable architecture as an integral part of the phenomenon of sustainable development, combining environmental, economic and social aspects of public life. In practical classes, students participate in seminars, prepare presentations and perform coursework in the form of social assessment of a particular area of the city on the criteria of sustainable development.

### KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of studying the discipline doctoral students should:

Know:

- basic principles of sustainable development;
- methods of monitoring the urban environment according to the criteria of sustainable development;
- basic tools and techniques to achieve sustainable development of the city.

Know:

- use the knowledge gained in the practice of educational architectural design,
- to use the tools of social assessment of the territory for making project decisions.

Own:

- methods of environmentally oriented architectural design at different levels of urban development, methods of assessing the urban environment on the criteria of sustainable development.

## **Sociology of architecture**

CODE – ARC307

CREDIT – 6 (1/0/2/3)

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

A discipline that studies the architectural environment as an essential component of the human environment in which architecture is the main socio-cultural leaving the city.

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

The discipline consists of lectures and practical classes. The lecture course contains extensive information about the role and place of sociology in the decision - making process in architecture and urbanism. In practical classes, students participate in seminars, prepare presentations and perform coursework.

## Writing and defending doctoral dissertation

CODE – ECA303

CREDIT –12

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The purpose of the doctoral dissertation is to assess the scientific-theoretical and research-analytical level of the doctoral student, formed professional and managerial competencies, readiness for independent implementation of professional tasks and compliance of its preparation with the requirements of professional standards and educational programs of doctoral studies.

### BRIEF DESCRIPTION

Doctoral dissertation is a scientific work of a doctoral student, which is an independent study in which theoretical provisions are developed, the totality of which can be qualified as a new scientific achievement, or a scientific problem is solved, or scientifically substantiated technical, economic or technological solutions are presented, the introduction of which makes a significant contribution to the development of the country's economy.

Doctoral dissertation – the result of the research /experimental research work of the doctoral student, conducted during the entire period of training of the doctoral student.

Defense of the doctoral dissertation is the final stage of preparation of the doctor of philosophy (PhD).

Doctoral dissertation should meet the following requirements:

- the theme of the dissertation should be related to the priority directions of development of science and/or state programs or programs of fundamental or applied research;
- the content of the dissertation, goals and objectives, obtained scientific results should strictly correspond to the theme of the dissertation;
- the thesis is carried out in compliance with the principles of independence, internal unity, scientific novelty, reliability and practical value.

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