

**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

**7M07302 – «Architecture and urban planning»
(scientific and pedagogical direction (2 years))**

**Master of Engineering and Technology on the curriculum program
7M07302 – «Architecture and urban planning»**

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

Almaty 2020

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:

7M07302 – Architecture and urban planning (master's degree).

Professional competence:

Graduate master can work as a designer, project manager, to carry out management activities; in research institutes, laboratories; higher education institutions, to engage in educational activities, including the implementation of analytical developments relating to the educational process, the preparation of standard and working curricula, educational and methodological developments, lectures and practical training in the disciplines of architecture, art, etc.

Short description of the program:

1. Purposes

Preparation of masters of technical Sciences in the educational program 7M07302– "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
C1	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.
C2	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.
C3	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
C4	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.
C5	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.
C6	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;
- in scientific and pedagogical training:
 - 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 activities in higher, secondary special, 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:

- 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:

- planning and organization of research in the field of architecture and urban planning to solve specific research, information retrieval, methodological problems in the field of architecture;
- 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 of educational process in educational institutions in the profile;
- 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. In the scientific and pedagogical magistracy at least 120 academic credits for the entire period of study (2 years), 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.

Master's degree in scientific and pedagogical direction implements educational programs of postgraduate education for the preparation of scientific and scientific-pedagogical personnel for Universities and scientific organizations with in-depth scientific-pedagogical and research 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 7M07302 – "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 7M07302—"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.

Developed:	Discussed: meeting of the INSTITUTE	Approved: E&MB of Satbayev University	Page 6 of 57
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The main criterion for the completion of the educational process for the preparation of masters is the development of undergraduates:

- at scientific and pedagogical preparation – not less than 120 credits (ECTS), from them not less than 72 credits of theoretical training, not less than 12 credits of practice, not less than 24 credits of research work; writing and protection of the 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.

Opportunities to continue education: master, who has mastered the educational program of the master's degree, prepared to continue his education in the doctoral program on the educational program 8D07301–"Architecture and urban planning".

Specialization: within the educational program of the magistracy 7M07302 – "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 7M07302 – "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;
- training of specialists with a high level of professional culture, including the culture of professional communication, having a civil position, able to formulate and solve modern scientific and practical problems, to teach in higher and secondary schools, to successfully carry out research and management activities in various architectural enterprises and organizations;
- 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;
- obtaining the necessary minimum knowledge in the field of University pedagogy and psychology, and teaching experience in educational institutions.

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 on the curriculum program 7M07302 – «Architecture and urban planning».

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.

Graduate, master's degree program majoring in 7M07302 – "Architecture and urban planning" must have the professional competences corresponding to the professional activities, which are the focus of the graduate program:

research activities:

- the ability to form diagnostic solutions to professional problems by integrating the fundamental branches of science and specialized knowledge gained in the development of the master's program;
- the ability to independently conduct scientific experiments and research in the professional field, to summarize and analyze experimental information, to draw conclusions, to formulate conclusions and recommendations;
- the ability to create and explore models of the studied objects based on the use of in-depth theoretical and practical knowledge in the field of architecture and urban planning;

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;

scientific and pedagogical activity:

- ability to conduct seminars, laboratory and practical classes;
- the ability to participate in the management of scientific and educational work of students in the field of architecture and urban planning.

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

4. Working curriculum of the educational program

4.1. Duration of training 2 years

Full-time study						Term of study: 2 years		Academic degree: Master					
year of study	Code	Name of course	Component	Academic credits	lecture/ laboratory/ practice/MSIW	Prerequisites	Code	Name of course	Component	Academic credits	lecture/ laboratory/ practice/IWS	Prerequisites	
1	1 semester						2 semester						
	LNG202	Foreign language (professional)	BD IC	6	0/0/3/3		AAP244	Pedagogical practice	BD IC	4	0/0/2/2		
	HUM204	Management psychology	BD IC	4	1/0/1/2		HUM201	History and philosophy of science	BD IC	4	1/0/1/2		
	ARC222	Теория архитектуры	PS IC	6	2/0/1/3		HUM207	Pedagogy of Higher education	BD IC	4	1/0/1/2		
	ARC201	Архитектурное проектирование	PS IC	6	0/0/3/3		ARC202	Градостроительное проектирование 1	PS IC	6	2/0/1/3		
	1101	ELECTIVE	BD OC	6			1201	ELECTIVE	BD OC	6			
	1102	ELECTIVE	BD OC	6									
	AAP242	Master's student scientific research, including an internship and a master's thesis	MSSR	6			AAP242	Master's student scientific research, including an internship and a master's thesis	MSSR	6			
		In total		40				In total		30			
2	3 semester						4 semester						
	2101	ELECTIVE	PS OC	6			AAP236	Research scientific training	PS	7			
	2101	ELECTIVE	PS OC	6			ECA205	Registration and defense of the master's thesis (RaDMT)	FA	12			
	2101	ELECTIVE	PS OC	6									
	2101	ELECTIVE	PS OC	6									
	AAP242	Master's student scientific research, including an internship and a master's thesis	MSSR	6			AAP242	Master's student scientific research, including an internship and a master's thesis	MSSR	6			
		In total		30				In total		25			
In TOTAL										125			

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)	40
A cycle of principal subjects (PS IC, PS OC)	49
All on the theoretical classes:	89
MSSR	24
Registration and defense of the master's thesis (RaDMT)	12
In TOTAL:	125

Catalog of elective disciplines

Degree: Master of Science in engineering

Term of study: 2 years

Basic Discipline - Components of choice - 36 credits					
	Code	Name of disciplines	Academic credits	lecture/ laboratory/ practice/IWS	Semester
1101	ARC224	Organization and planning of scientific research in architecture and urban planning	6	2/0/1/3	1
	ARC242	Scientific methods in architecture I	6	2/0/1/3	
1102	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	ARC207	Methods of teaching vocational subjects	6	2/0/1/3	2
	ARC206	Methods of teaching course and diploma projects	6	2/0/1/3	
		Total:	36		
Profile Discipline - Components of choice - 48 credits					
	Code	Name of disciplines	Academic credits	lecture/ laboratory/ practice/IWS	Semester
2101	ARC238	Regulatory and regulatory framework in architecture and urban planning II	6	2/0/1/3	3
	ARC204	Urban analysis	6	2/0/1/3	
2102	ARC221	Social bases of architecture	6	2/0/1/3	3
	ARC220	Socio-demographic conditions architecture	6	2/0/1/3	
2103	ARC208	Methodology in energy efficiency architecture	6	2/0/1/3	3
	ARC223	Energy efficiency in urban planning	6	2/0/1/3	
2104	ARC244	Scientific methods of reconstruction and restoration I	6	2/0/1/3	3
	ARC243	Scientific methods of reconstruction and modernization I	6	2/0/1/3	
		Total:	48		

5. Modular educational program

Com pone nt	Code.	Name of course	Semester	Academic credits	lecture	laboratory	practice	MSIW	Control type	Departme nt
Profile training module										
Basic disciplines (BD) (35 credits)										
Institute component (IC) (22 credits)										
BD 1.1.1	LNG202	Foreign language (professional)	1	6	0	0	3	3	Exam	EL
BD 1.2.1	HUM201	History and philosophy of science	2	4	1	0	1	2	Exam	SD
BD 1.3.1	HUM207	Pedagogy of Higher education	2	4	1	0	1	2	Exam	SD
BD 1.4.1	HUM204	Management psychology	1	4	1	0	1	2	Exam	S&EPMC
Institute component (IC)										
	AAP244	Teaching practice	2	4					Report	Architect ure
Optional component (OC) (18 credits)										
Architecture Theory Special Questions Module										
BD 1.5.1	ARC224	Organization and planning of scientific research in architecture and urban planning	1	6	2	0	1	3	Exam	Architect ure
BD 1.5.2	ARC242	Scientific methods in architecture I							Exam	Architect ure
BD 1.6.1	ARC219	Modern aspects of the history and theory of urban planning	1	6	2	0	1	3	Exam	Architect ure
BD 1.6.2	ARC211	The main directions of modern architecture							Exam	Architect ure
BD 1.7.1	ARC207	Methods of teaching vocational subjects	2	6	2	0	1	3	Exam	Architect ure
BD 1.7.2	ARC206	Methods of teaching course and diploma projects							Exam	Architect ure
Profiling disciplines (PD) (49 credits)										
Institute component (IC)										
PS	AAP236	Research practice	4	7					Report	Architect ure

Architecture theory and practice module										
PS 1.1.1	ARC222	Architecture theory	1	6	2	0	1	3	Exam	Architect ure
PS 1.2.1	ARC201	Architectural design	1	6	0	0	3	3	Exam	Architect ure
PS 1.3.1	ARC202	Urban planning 1	2	6	2	0	1	3	Exam	Architect ure
Optional component (OC)										
Professional Research Module										
PS 1.4.1	ARC238	Regulatory and regulatory framework in architecture and urban planning II	3	6	2	0	1	3	Exam	Architect ure
PS 1.4.2	ARC204	Urban analysis							Exam	Architect ure
PS 1.5.1	ARC221	Social bases of architecture	3	6	2	0	1	3	Exam	Architect ure
PS 1.5.2	ARC220	Socio-demographic conditions architecture							Exam	Architect ure
PS 1.6.1	ARC208	Methodology in energy efficiency architecture	3	6	2	0	1	3	Exam	Architect ure
PS 1.6.2	ARC223	Energy efficiency in urban planning							Exam	Architect ure
PS 1.7.1	ARC244	Scientific methods of reconstruction and restoration I	3	6	2	0	1	3	Exam	Architect ure
PS 1.7.2	ARC243	Scientific methods of reconstruction and modernization I							Exam	Architect ure
Research module (24 credits)										
MSS R	AAP242	Master's student scientific research, including an internship and a master's thesis	1	6					Report	Architect ure
MSS R	AAP242	Master's student scientific research, including an internship and a master's thesis	2	6					Report	Architect ure
MSS R	AAP242	Master's student scientific research, including an internship and a master's thesis	3	6					Report	Architect ure
MSS R	AAP242	Master's student scientific research, including an internship and a master's thesis	4	6					Report	Architect ure
Final certification module (12 credits)										
FE	ECA205	Registration and defense of the master's thesis (RaDMT)	4	12					Defense of dissertatio ns	
Total credits				125						

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 scientific and pedagogical magistracy. Upon completion of the training, the master should:

1) have an idea about:

- the role of science and education in public life;
- on current trends in the development of scientific knowledge;
- on actual methodological and philosophical problems of natural (social, humanitarian, economic) Sciences;
- professional competence of a higher school teacher;
- contradictions and socio-economic consequences of globalization processes;
- the philosophy and methodology of architectural science, the state and trends of architecture and urban development in the Republic of Kazakhstan, CIS and foreign countries.

2) know:

- methodology of scientific knowledge;
- principles and structure of the organization of scientific activity;
- psychology of cognitive activity of students in the learning process;

- psychological methods and means of improving the effectiveness and quality of training;
- 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:

- use the acquired knowledge for original development and application of ideas in the context of scientific research;
- 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;
- apply knowledge of pedagogy and psychology of higher education in their teaching activities;
- apply interactive teaching methods;
- 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;
- fluently speak a foreign language at a professional level, allowing to conduct research and carry out the teaching of special subjects in universities;
- summarize the results of research and analytical work in the form of a dissertation, scientific article, report, analytical note, etc.

4) have the skills:

- research activity, decision of standard scientific tasks;
- implementation of educational and pedagogical activity on credit technology of training;
- methods of teaching professional disciplines;
- 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 the field of research methodology;
- in the field of scientific and scientific-pedagogical activity in higher educational institutions;
- in matters of modern educational technologies;
- in the implementation of research projects and research in the professional field;
- 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 competence – in-depth scientific and theoretical, methodological knowledge and research skills that ensure 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; the social responsibility allowing to solve social and professional, organizational and administrative, educational tasks;

professional competence – in-depth knowledge of special disciplines and the ability to solve complex professional problems, the tasks of research and teaching activities, 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:

Scientific-pedagogical and educational-methodical activity

PC-1. Conduct training sessions in institutions of secondary special and higher education.

PC-2. Develop and use modern educational and methodological support.

PC-3. To master and introduce innovative educational technologies into the educational process.

PC-4. To lead the research work of students.

PC-5. Plan and organize educational work with students.

PC-6. To monitor the educational process, diagnosis of educational and educational results.

Research activities

PC-7. Conduct qualified research in the field of architecture

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 Требования к научно-исследовательской работе магистранта в научно-6.3 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 scientific and pedagogical magistracy includes two types of practices that are conducted in parallel with theoretical training or in a separate period:

- 1) in the cycle of pedagogical database – at the University;
- 2) research in the cycle of PD – at the place of the thesis.

Pedagogical practice is carried out in order to form practical skills of teaching and learning methods. At the same time, undergraduates are involved in conducting classes in the undergraduate at the discretion of the University.

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

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.

History and philosophy of science

CODE – HUM201

CREDIT – 4 (1/0/1/2)

PREREQUISITE – HUM124

THE PURPOSES AND OBJECTIVES OF THE COURSE

To reveal the connection between philosophy and science, to highlight the philosophical problems of science and scientific knowledge, the main stages of the history of science, the leading concepts of philosophy of science, modern problems of development of scientific and technical reality.

BRIEF DESCRIPTION OF THE COURSE

The subject of philosophy of science, the dynamics of science, the specifics of science, science and pre-science, antiquity and the formation of theoretical science, the main stages of the historical development of science, especially classical science, non-classical and post-non-classical science, philosophy of mathematics, physics, engineering and technology, the specifics of engineering, ethics of science, social and moral responsibility of the scientist and engineer.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

Know and understand the philosophical questions of science, the main historical stages of development of science, leading to the concept of philosophy of science, to be able to critically evaluate and analyze scientific and philosophical problems, to understand the specifics of engineering science, possess the skills of analytical thinking and philosophical reflection, to be able to justify and defend its position, own techniques of discussion and dialogue, to master the skills of commutatively and creativity in their professional work.

Pedagogy of Higher education

CODE – HUM207

CREDIT – 4 (1/0/1/2)

PREREQUISITE – not

THE PURPOSE AND OBJECTIVES OF THE COURSE

The course is aimed at studying the psychological and pedagogical essence of the educational process of higher education; formation of ideas about the main trends in the development of higher education at the present stage, consideration of the methodological foundations of the learning process in higher education, as well as psychological mechanisms that affect the success of learning, interaction, management of subjects of the educational process. The development of psycho-pedagogical thinking of the students.

BRIEF DESCRIPTION OF THE COURSE

In the course of the study course the students get acquainted with the didactics of higher school, forms and methods of organizing learning in higher education, psychological factors of successful learning, the peculiarities of psychological effects, mechanisms of educational influence, pedagogical technologies, and characteristics of pedagogical communication, the control mechanisms of the learning process. The author analyzes organizational conflicts and ways of their resolution, psychological destruction and deformation of the teacher's personality.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

At the end of the course, the undergraduate should know the features of the modern system of higher education, the organization of pedagogical research, characteristics of the subjects of the educational process, the didactic foundations of the organization of the learning process in higher education, pedagogical technologies, patterns of pedagogical communication, especially educational effects on students, as well as the problems of pedagogical activity.

Management psychology

CODE – HUM204

CREDIT – 4 (1/0/1/2)

PREREQUISITE – not

THE PURPOSE AND OBJECTIVES OF THE COURSE

The main purpose of the course is to study the characteristics of the behavior of individuals and groups of people within organizations; determining the psychological and social factors influencing the behavior of employees. Also, much attention will be paid to the internal and external motivation of people

The main purpose of the course is to apply this knowledge to improve the efficiency of the organization.

BRIEF DESCRIPTION OF THE COURSE

The course is designed to provide balanced coverage of all key elements of the discipline. It will briefly review the origin and development of organizational behavior theory and practice, and then review the main roles, skills, and functions of management with a focus on management effectiveness illustrated by real-life examples and case studies.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

At the end of the course, students will know: the basics of individual and group behavior; basic theories of motivation; basic theories of leadership; the concept of communication, conflict management and stress in the organization.

will be able to define different roles of managers in organizations; look at organizations from managers ' point of view; understand how effective management contributes to effective organization.

Architectural design

CODE – ARC201

CREDIT – 6 (0/0/3/3)

PREREQUISITE – ECA102

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.).

Theory of architecture

CODE – ARC222

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

The discipline "Theoretical foundations of architecture" 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 "Theoretical foundations of architecture" - to show undergraduates methods of architectural science as a set of techniques, tools, principles and rules by which to create architectural works, 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 "Theoretical foundations of architecture" 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.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

The study of the discipline "Theoretical foundations of architecture" 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 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.

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

Know:

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- 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.

Organization and planning of research in architecture and urban planning

CODE – ARC224

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

Training of specialists in the field of architecture, acquisition of necessary skills for independent scientific activity, consolidation of theoretical knowledge and ideas about scientific activity in the field of architecture and urban planning, practical development of methods of research work.

BRIEF DESCRIPTION OF THE COURSE

Research work is one of the most important in the development of master's 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 abilities of the undergraduate 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 the study of the discipline undergraduates should know the methods and principles of organization and planning of research, structure and content of research, the basic requirements for the preparation and protection of theses.

Master, who studied the discipline, must be able to:

- formulate the purpose and objectives of the study;
- make a research plan;
- to conduct bibliographic searches with the use of modern information technologies;
- to use modern methods of scientific research, to modify them, based on the objectives of a particular study;
- process independently obtained data, analyze and synthesize information from published sources;
- to formulate specific scientific conclusions and practical recommendations on the subject of master's work;
- draw up the results of the study in accordance with the established requirements.

Master, who studied the discipline, must own:

- terminology of the discipline;
- fundamentals of research methods and principles;
- General information on the preparation of the dissertation research.

Regulatory and legal framework in architecture and urban planning

CODE – ARC148

CREDIT – 6 (1/0/2/3)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

Formation of skills of legal approach to architectural and urban design in the Republic of Kazakhstan, the formation of a responsible attitude to professional communications in the practical, theoretical and expert activities of the architect, the formation of the ability to conduct independent pre-project and project work using modern methods and methods of implementation of the results of scientific and practical research in the project documentation, the study of modern methodological techniques in the design in the real urban situation, formation of skills of social responsibility of the architect.

BRIEF DESCRIPTION OF THE COURSE

It covers a range of issues related to architectural design. The course of lectures is focused on the analysis of the legal framework in the field of architectural and urban development in Kazakhstan of the modern period and the study of the history of legal regulation. Practical classes are aimed at obtaining and strengthening the skills of methods of reconstruction of historical buildings of cities and restoration of monuments of architecture, as well as methods of professional architectural and urban design within the legal framework of the Republic of Kazakhstan.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

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

- the ability to take initiative, including in situations of risk, to resolve problematic situations, to take responsibility for decisions;
- readiness for social mobility, adaptation to new situations, reassessment of experience, analysis of their capabilities, communication in the scientific, industrial and social spheres;
- the ability to interpret the results of applied research in the form of generalized design models.

Methods of teaching professional disciplines

CODE – ARC207

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

Discipline "Methods of teaching professional disciplines" is the main discipline for the specialty.

Methods of teaching professional disciplines – one of the fundamental disciplines that occupy an important place in the training of students of the specialty. The role of methods of teaching professional disciplines is due to the fact that its basic concepts, terms and means serve as a methodological basis for the main major discipline of master's education – teaching professional disciplines, architectural design with the use of knowledge in the project of the discipline that forms the professional qualities of the future specialist. The aim of the discipline is to develop undergraduates professional approach to the purpose of teaching professional disciplines, taking into account the requirements of higher education to the quality of education.

BRIEF DESCRIPTION OF THE COURSE

The study of the discipline "Methods of teaching professional disciplines" involves the following tasks:

- get an idea of teaching methods as a set of professional design techniques;
- to get practical skills of work with students in the process of solving the main problems of architectural education;

As a result of studying the discipline undergraduates should know:

- tendencies of the account of modern requirements to problems of architectural education;
- basic principles of methodology of teaching professional disciplines;
- the basic principles of creative thinking of the architect and creative activity.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of the development of the discipline undergraduate must demonstrate the following results of education:

Know:

- trends in taking into account the modern requirements of sustainable architecture in the methodology of teaching professional disciplines;
- basic principles of methodology of teaching professional disciplines;
- methods of architectural design as a cognitive and creative activity.

Know:

- apply different design approaches focused on analytical pre-design solutions;
- use the principles of the methodology of the course and diploma designs.

Own:

- methods of professional analysis of works of modern architecture - design as a three-stage process: analysis – evaluation – synthesis;
- methods and means of obtaining and analyzing information on various problems of pedagogical management of education and upbringing of students.

Methods of teaching course and diploma design

CODE – ARC206

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

Methods of teaching professional disciplines – one of the fundamental disciplines that occupy an important place in learning. The role of methods of teaching professional disciplines is due to the fact that its basic concepts, terms and means serve as a methodological basis for the main major discipline of master's education – teaching professional disciplines, architectural design with the use of knowledge in the project of the discipline that forms the professional qualities of the future specialist. The aim of the discipline is to develop undergraduates professional approach to the purpose of teaching professional disciplines, taking into account the requirements of higher education to the quality of education.

BRIEF DESCRIPTION OF THE COURSE

The study of the discipline involves the following tasks:

- get an idea of teaching methods as a set of professional design techniques;
- to get practical skills of work with students in the process of solving the main problems of architectural education;

As a result of studying the discipline undergraduates should know:

- tendencies of the account of modern requirements to problems of architectural education;
- basic principles of methodology of teaching professional disciplines;
- the basic principles of creative thinking of the architect and creative activity.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of the development of the discipline undergraduate must demonstrate the following results of education:

Know:

- trends in taking into account the modern requirements of sustainable architecture in the methodology of teaching professional disciplines;
- basic principles of methodology of teaching professional disciplines;
- methods of architectural design as a cognitive and creative activity.

Know:

- apply different design approaches focused on analytical pre-design solutions;
- use the principles of the methodology of the course and diploma designs.

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Own:

- methods of professional analysis of works of modern architecture - design as a three-stage process: analysis – evaluation – synthesis;
- methods and means of obtaining and analyzing information on various problems of pedagogical management of education and upbringing of students.

Modern aspects of the history and theory of urban planning

CODE – ARC219

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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.

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.

The main directions of modern architecture

CODE – ARC211

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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 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.

Innovative methods of teaching professional disciplines

CODE – ARC205

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

The discipline "Innovative methods of teaching professional disciplines" is the main discipline for the specialty.

Innovative methods of teaching professional disciplines – one of the fundamental disciplines that occupy an important place in the training of students of the specialty. The role of methods of teaching innovative methods of professional disciplines is due to the fact that its basic concepts, terms and means serve as a methodological basis for the main major discipline of master's education – teaching professional disciplines, architectural design with the use of knowledge in the project of the discipline that forms the professional qualities of the future specialist. The aim of the discipline is to develop undergraduates professional approach to the purpose of teaching professional disciplines, taking into account the requirements of higher education to the quality of education.

BRIEF DESCRIPTION OF THE COURSE

The study of the discipline "Innovative methods of teaching professional disciplines" involves the following tasks:

- get an idea of teaching methods as a set of professional design techniques;
- to get practical skills of work with students in the process of solving the main problems of architectural education;

As a result of studying the discipline undergraduates should know:

- the latest trends in taking into account modern requirements to the problems of architectural education;
- basic principles of methodology of teaching professional disciplines;
- the basic principles of creative thinking of the architect and creative activity.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of the development of the discipline undergraduate must demonstrate the following results of education:

Know:

- trends in taking into account the modern requirements of sustainable architecture in the methodology of teaching professional disciplines;
- basic principles of methodology of teaching professional disciplines;
- methods of architectural design as a cognitive and creative activity.

Know:

- apply different design approaches focused on analytical pre-design solutions;
- use the principles of the methodology of the course and diploma designs.

Own:

- methods of professional analysis of works of modern architecture - design as a three-stage process: analysis – evaluation – synthesis;
- methods and means of obtaining and analyzing information on various problems of pedagogical management of education and upbringing of students.

Scientific methods in architecture

CODE – ARC209

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

Discipline "Scientific methods in architecture" 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 – to show undergraduates methods of architectural science as a set of techniques, tools, principles and rules by which to create architectural works, 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 "Scientific methods in architecture" 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 scientific methods in architecture – General patterns of occurrence, development and functioning of architecture as art, its essence, content and forms.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

The study of the discipline "Scientific methods in architecture" 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 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.

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;

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.

Social foundations of architecture

CODE – ARC221

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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

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.

Urban analysis

CODE – ARC204

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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 I

CODE – ARC202

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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.

Energy efficiency methodology in architecture

CODE – ARC208

CREDIT – 6 (2/0/1/3)

PREREQUISITE – ECA102

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

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.

Theoretical foundations of architecture

CODE – ARC222

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

The discipline "Theoretical foundations of architecture" 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 "Theoretical foundations of architecture" - to show undergraduates methods of architectural science as a set of techniques, tools, principles and rules by which to create architectural works, 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 "Theoretical foundations of architecture" 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.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

The study of the discipline "Theoretical foundations of architecture" 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 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.

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

Know:

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- 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.

Problems of artificial environment of human activity

CODE – ARC213

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

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.

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.

Scientific methods of reconstruction and restoration

CODE – ARC225

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

The discipline is intended for the formation of undergraduates modern scientific knowledge in the field of theory, methodology and practice of reconstruction and restoration of historical cities of their development, as well as buildings and structures of historical and cultural heritage.

BRIEF DESCRIPTION OF THE COURSE

The discipline is related to the problems of reconstruction of the urban environment, including historical, provides a system of knowledge about the features of reconstruction and modernization of the main subsystems (elements) of the city – residential, public, transport, engineering infrastructure; methods of comprehensive research in the field of urban planning; the rules of the use of basic restoration scientific methods in the work with monuments of architecture, historical buildings.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of training the undergraduate should:

know:

- directions of research and development in restoration activities,
- a complex of humanitarian, natural and applied disciplines necessary for the practical activity of the architect-restorer aimed at; identification and attribution of objects of material culture, the definition of their artistic and historical value;
- organization and conduct of research and archival research, and the choice of the optimal model of restoration of the object of material culture;
- organization and implementation of the complex of restoration works; preparation of scientific reporting documentation; participation in the creation of the legal framework in the field of protection of monuments.

know:

- carry out primary analysis and provide integrated information for management decision-making; conduct research on topical issues of restoration activities; formulate goals, objectives, boundaries of scientific and restoration research; make plans for their implementation.

own:

- the methodology of selecting the necessary research tools for this restoration object, to develop new research tools based on the specific tasks of the restoration of the object.

Scientific methods of reconstruction and modernization

CODE – ARC226

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

Formation of undergraduates ' personal qualities, General cultural and professional competencies in the framework of familiarization with the specifics of design in the field of reconstruction and modernization of architectural heritage.

BRIEF DESCRIPTION OF THE COURSE

The discipline is related to the problems of reconstruction of the urban environment, including historical, provides a system of knowledge about the features of reconstruction and modernization of the main subsystems (elements) of the city – residential, public, transport, engineering infrastructure; methods of comprehensive research in the field of urban planning; the rules of the use of basic restoration scientific methods in the work with monuments of architecture, historical buildings.

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

As a result of training the undergraduate should:

know:

- directions of research and development in restoration activities,
- a complex of humanitarian, natural and applied disciplines necessary for the practical activity of the architect-restorer aimed at; identification and attribution of objects of material culture, the definition of their artistic and historical value;
- organization and conduct of research and archival research and selection of the optimal model of restoration of the object of material culture;
- organization and implementation of the complex of restoration works; preparation of scientific reporting documentation; participation in the creation of the legal framework in the field of protection of monuments.

know:

- carry out primary analysis and provide integrated information for management decision-making; conduct research on topical issues of restoration activities; formulate goals, objectives, boundaries of scientific and restoration research; make plans for their implementation.

own:

the methodology of selecting the necessary research tools for this restoration object, to develop new research tools based on the specific tasks of the restoration of the object.

Psychology of perception of architectural environment

CODE – ARC216

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

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, in the teaching of the discipline "Design of the architectural environment" the emphasis is 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.

Prognostics in architecture and urban planning

CODE – ARC215

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

The main purpose of teaching the discipline "Prognostics in architecture and urban planning": to give the undergraduate a General idea of the stages of historical development of intuitive foresight and modern methods in the field of architectural prognostics in the world practice; to acquaint the undergraduate with predictive 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 "Prognostics in architecture and urban planning" 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 "Prognostics in architecture and urban planning" 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;

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- the main methods of prognostic approach in architectural and urban design;
- 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 (RaDMT)

CODE – ECA205

CREDIT – 12

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.

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