

**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

**7M07317 – «Architecture and urban planning»
(profile direction (1 years))**

**Master of Engineering and Technology on the curriculum program
7M07317 – «Architecture and urban planning»**

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

Almaty 2020

Developed:	Discussed: meeting of the INSTITUTE	Approved: E&MB of Satbayev University	Page 1 of 29
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The program is drawn up and signed by the parties:

From KazNRTU named after K. I. Satbayev:

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

From employers:

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

From partner University:

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

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

Qualification:

Level 7 of the National qualifications framework:

7M07 Engineering, manufacturing and construction industries:

7M073 Architecture and construction:

7M07317 – Architecture and urban planning (master's degree).

Professional competence:

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

Short description of the program:

1. Purposes

Preparation of masters of engineering and technology in the educational program 7M07317—"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 objectives of the educational program are presented in table 1.

Table 1. Objectives 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.

1. 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.

2. Sphere of professional activity:

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

4. Objects of professional activity:

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

5. Subject of professional activity:

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

PASSPORT OF THE EDUCATIONAL PROGRAM

1. Scope and content of the program

The period of study in the master's degree is determined by the volume of mastered academic credits. When mastering the set amount of academic credits and achieving the expected results of training for a master's degree, the educational program of the master's degree is considered to be fully mastered. The profile of the magistracy at least 62 academic credits for the entire period of study (1 year), including all types of educational and scientific activities of undergraduates.

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

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

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

The content of the EP

In the implementation of the educational program of postgraduate education 7M07317 – "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 7M07317–"Architecture and urbanism" contains:

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

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

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

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

- at scientific and pedagogical training – not less than 62 credits (ECTS), of which not less than 27 credits of theoretical training, not less than 23 credits of practice; writing and defending a master's thesis – 12 credits.

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

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

Previous level of education: higher education.

Specialization: within the educational program of the magistracy 7M07317 – "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 7M07317 – "Architecture and urban planning" are:

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

2. Requirements for applicants

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

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

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

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

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

3. Requirements for completion of studies and diploma

Degree / qualifications awarded

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

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

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

A graduate who has mastered the master's program 7M07317 – "Architecture and urban planning", must have professional competencies corresponding to the types of professional activities to which the master's program is focused:

research and production activities:

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

project activity:

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

organizational and management activities:

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

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

4. Working curriculum of the educational program

4.1. Duration of training 1 year

Year of study	Code	Name of course	Component	Academic credits	lecture/ lab/ prac/MSIW	Prerequisites	Code	Name of course	Component	lecture/ lab/ prac/MSIW	Prerequisites
1	1 semester						2 semester				
	LNG202	Foreign language (professional)	BD IC	6	0/0/3/3		AAP248	Work placement	PS	7	
	MNG274	Management	BD IC	6	2/0/1/3		AAP207	Master's student experimental research work, including internship and master's project implementation	MSERW	13	
	HUM204	Management Psychology	BD IC	4	1/0/1/2		ECA206	Registration and defense of the master's project (RaDMP)	FA	12	
	1101	ELECTIVE	BD OC	4							
	1102	ELECTIVE	PS OC	6							
	1103	ELECTIVE	PS OC	6							
	1104	ELECTIVE	PS OC	6							
	In total			38			In total			32	
							In all			70	

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)	20
A cycle of principal subjects (PS IC, PS OC)	25
All on the theoretical classes:	45
MSERW	13
Registration and defense of the master's thesis (RaDMT)	12
In TOTAL:	70

Catalog of elective disciplines

Basic Discipline - Components of choice - 8 credits					
	Code	Name of disciplines	Academic credits	lecture/ laboratory/ practice/IWS	Semester
1101	ARC239	Urban analysis I	4	1/0/1/2	1
	ARC237	Regulatory and regulatory framework in architecture and urban planning I	4	1/0/1/2	
		Total:	8		
Profile Discipline - Components of choice - 36 credits					
	Code	Name of disciplines	Academic credits	lecture/ laboratory/ practice/IWS	Semester
1102	ARC208	Methodology in energy efficiency architecture	6	2/0/1/3	1
	ARC223	Energy efficiency in urban planning	6	2/0/1/3	
1103	ARC221	Social bases of architecture	6	2/0/1/3	1
	ARC220	Socio-demographic conditions architecture	6	2/0/1/3	
1104	ARC244	Scientific methods of reconstruction and restoration I	6	2/0/1/3	1
	ARC243	Scientific methods of reconstruction and modernization I	6	2/0/1/3	
		Total:	36		

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) (20 credits)										
Institute component (IC) (16 credits)										
BD 1.1.1	LNG202	Foreign language (professional)	1	6	0	0	3	3	Exam	EL
BD 1.2.1	MNG274	Management	1	6	2	0	1	3	Exam	SD
BD 1.3.1	HUM204	Management psychology	1	4	1	0	1	2	Exam	S&EPMC
Optional component (OC) (4 credits)										
Architecture Theory Special Questions Module										
BD 1.4.1	ARC239	Urban analysis I	1	4	1	0	1	2	Exam	Architect ure
BD 1.4.2	ARC237	Regulatory and regulatory framework in architecture and urban planning 1							Exam	Architect ure
Profiling disciplines (PD) (25 credits)										
Institute component (IC)										
PS	AAP248	Work placement	2	7					Report	Architect ure
Optional component (OC)										
Professional Research Module										
PS 1.1.1	ARC208	Methodology in energy efficiency architecture	2	6	2	0	1	3	Exam	Architect ure
PS 1.1.2	ARC223	Energy efficiency in urban planning							Exam	Architect ure
PS 1.2.1	ARC221	Social bases of architecture	2	6	2	0	1	3	Exam	Architect ure
PS 1.2.2	ARC220	Socio-demographic conditions architecture							Exam	Architect ure
PS 1.3.1	ARC244	Scientific methods of reconstruction and restoration I	2	6	2	0	1	3	Exam	Architect ure
PS 1.3.2	ARC243	Scientific methods of reconstruction and modernization I							Exam	Architect ure
Experimental research module (13 credits)										
MSE RW	AAP207	Master's student experimental research work, including internship and master's project implementation	2	13					Report	Architect ure
Final certification module (12 credits)										
FE	ECA206	Registration and defense of the master's project (RaDMP)	2	12					Project defense	
Total credits				70						

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

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

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

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

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

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

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

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

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

7. Competences on completion of training

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

1) have an idea about:

- the role of science and education in public life;
- contradictions and socio-economic consequences of globalization processes;
- philosophy and methodology in the architectural and construction sphere, the state and trends of architecture, urban planning, construction, engineering systems and networks in the Republic of Kazakhstan, CIS and foreign countries.

2) *know*:

- the latest achievements of architectural science;
- possibilities of computer technologies, applied problems of architecture, modern mathematical and natural science research methods used in architectural science;
- the main trends in the development of architecture and architectural science in Kazakhstan, CIS and foreign countries.

3) *be able*:

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

- integrate the knowledge gained in different disciplines to solve research problems in new unfamiliar conditions;
- by integrating knowledge to make judgments and decisions based on incomplete or limited information;
- to carry out information-analytical and information-bibliographic work with the involvement of modern information technologies;
- creative thinking and creative approach to solving new problems and situations;
- fluent in a foreign language at a professional level;

4) *have the skills:*

- use of modern information technologies in the educational process;
- professional communication and intercultural communication;
- oratory, correct and logical design of their thoughts in oral and written form;
- development of design and estimate documentation of buildings, constructions and their complexes, landscape and town-planning objects, monuments of architecture, promotion of achievements of architectural and town-planning activity;
- solution of issues of design of residential and public buildings, their complexes;
- functional organization, design solutions, aesthetics and harmony of the designed objects;
- expanding and deepening the knowledge necessary for daily professional activities and continuing education in doctoral studies.

5) *be competent:*

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

7.2 Composition of master's competences

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

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

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

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

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

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

СЛК-2. Be able to cooperate and work in a team.

СЛК-3. Possess communication skills to work in an interdisciplinary and international environment.

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

Project activity

ПК- 8. Formulate design tasks.

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

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

Organizational and management activities

ПК-11. To make the best management decisions.

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

Innovative activity

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

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

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

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

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

2) relevant and contains scientific novelty and practical significance;

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

4) performed using modern methods of scientific research;

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

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

7.4 Requirements for the organization of practices:

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

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

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

8. Annex to the certificate according to the standard ECTS

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

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

Foreign language (professional)

CODE – LNG202

CREDIT – 6 (0/0/3/3)

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

THE PURPOSE AND OBJECTIVES OF THE COURSE

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

BRIEF DESCRIPTION OF THE COURSE

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

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

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

Management

CODE – MNG274

CREDIT – 4 (1/0/1/2)

PREREQUISITE – not

THE PURPOSES AND OBJECTIVES OF THE COURSE

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

BRIEF DESCRIPTION OF THE COURSE

The discipline is aimed at preparing graduates for:

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

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

Know:

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

Psychology of management

CODE – HUM204

CREDIT – 4 (1/0/1/2)

PREREQUISITE – not

THE PURPOSES AND OBJECTIVES OF THE COURSE

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

BRIEF DESCRIPTION OF THE COURSE

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

The main problems of architectural creativity

CODE – ARC212

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

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

BRIEF DESCRIPTION OF THE COURSE

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

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

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

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

Problems of formation in architecture and urban planning

CODE – ARC214

CREDIT – 4 (1/0/1/2)

PREREQUISITE – ECA102

THE PURPOSE AND OBJECTIVES OF THE COURSE

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

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

BRIEF DESCRIPTION OF THE COURSE

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

KNOWLEDGE AND SKILLS UPON COMPLETION OF THE COURSE

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

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

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– the basic directions of development of art systems and styles, especially their manifestations in modern culture and ways of their application for practical design are developed.

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.

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.

Registration and defense of the master's project (RaDMP)

CODE – ECA206

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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