

**MINISTRY OF LABOR AND SOCIAL PROTECTION OF THE
POPULATION OF THE REPUBLIC OF KAZAKHSTAN**

**“DEVELOPMENT OF LABOR SKILLS AND STIMULATION OF
WORKPLACES” PROJECT**

EDUCATIONAL PROGRAMME

1401000 - Construction and operation of buildings and structures
(code and name of the speciality)

Level of professional qualification: specialist of middle ranking

Term of education: 3 years 10 months

Astana, 2018

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INTRODUCTION

The educational programme STI 1401000 – “Construction and operation of buildings and structures” has been developed in accordance with The state obligatory standard of technical and vocational education, approved Decree of the Government of the Republic of Kazakhstan of August 23, 2012 No. 1080, the National Qualifications Framework approved by the Protocol of March 16, 2016 by the Republican Trilateral Commission on Social Partnership and Regulation of Social and Labor Relations.

The program is designed to implement the principles of democratic governance of education, expand the boundaries of academic freedom and the authority of educational institutions, which will ensure the adaptation of the system of technical and vocational education to the changing needs of society, the labor market economy. Flexibility of the programme will allow to take into account the abilities and needs of the individual, production and society.

The educational programme provides for the use of a modular-competence approach based on the development of the evaluation of the competencies of the learning organizations of education in the form of basic educational results, the use of modular training.

In accordance with this educational programme, the educational process in organizations of technical and vocational education is based both on a modular system and on the credit system of education.

The program ensures the application of a differentiated, individual approach to the students, the development of the students' abilities for self-education, greater freedom in the choice of teaching methods by the teachers, the forms of organization and content of the learning process, the acquisition by the students in the same objects of education of different levels – from the basics of the profession to the level of a highly skilled worker, middle level, applied bachelor.

Practice has shown that future specialists of middle level must necessarily pass all levels of training in TVE, namely - increased and the level of qualification of a specialist of middle level, i.e. only after actually mastering two or three competencies of the worker can you become a highly competent technician.

On the basis of this Educational Programme, the education organization develops working curricula and programmes using appropriate methodological recommendations for working training and planning documentation.

When developing the presented experimental modular training program, the legislative and normative acts of the Republic of Kazakhstan, domestic and foreign scientific-methodical work in this field, materials on the state of the economy, labor market and professional education in Kazakhstan.

1. LIST OF ABBREVIATIONS

BC	Basic competence
BM	Basic module
SCES	State compulsory education standard
DP	Diploma projection
FC	Final Certification
C	Consultation
NQF	National Qualification Framework
CCEA	Common Classifier of Economic Activity
EP	Educational programme
GED	General educational disciplines
IFQ	Industrial framework of qualifications
IC	Intermediate certification
PS	Professional standard
PC	Professional competence
PM	Professional module
LO	Learning outcome
TPE	Technical and professional education
TPPSE	Technical and professional and post-secondary education
OC	Object of condominium
ED	Estimate documentation
PED	Project and estimate documentation
MA	Management Authority
HUI	Housing and Utility Infrastructure
TE	Technical equipment

PASSPORT OF THE WORKING EDUCATIONAL PROGRAMME

Name (code and name of the speciality): 1401000 – Construction and operation of buildings and structures

Name and code of qualification: 1401313 – “Technician of estimate supplying”

The purpose of the educational programme: preparation of qualified specialists who perform work on the calculation of the estimated cost of construction using automated software systems.

Level of education: technical and professional

Level of professional qualification: Midlevel specialist.

Levels of qualifications by NQF: 4

Area of professional activity*: construction

Type (s) of work activity:

1. Initial data preparation for the development of construction estimate documentation
2. Estimate documentation development and determination of the estimated cost of construction
3. Works organization on verification and acceptance and transfer of budget and financial documentation to project and contract organizations

Object (s) of professional activity: construction and design organizations, public and private companies.

Features of the program **:** Ability to use the dual form of training, credit training system.

Form of education: full-time

Terms of education: 3 years 10 months.

Language of learning Russian

Amount of credits/hours: 219 / 6588 hours.

Requirements for students ***:** persons with basic secondary education

* it is indicated by the parameters of the sfq (methodological recommendations for the development and design of the branch framework of qualifications, astana, 2016).

** to be indicated on the ps (methodological recommendations on development and registration of professional standards, astana, 2017)

*** the systems, objects, phenomena, processes, technologies for which, activity is directed, are indicated.

**** identifies dual education / distance learning / credit technology

***** the previous education is i

PROFILE OF COMPETENCES

Purpose of the training: calculation of the estimated cost of construction using automated software systems		After successful completion of the program, student will be able to: calculate the estimated cost of construction using automated software systems
The name of the section, division, group, class and subclass according to CCEA* (according to PS)		CCEA code: 41201 Section: [F] Construction Division: [41] Building Group: [412] Construction of residential and non-residential buildings Class: [4120] Construction of residential and non-residential buildings CCEA code: 41202 Section: [F] CONSTRUCTION Division: [41] Building construction Group: [412] Construction of residential and non-residential buildings Class: [4120] Construction of residential and non-residential buildings
Areas of competence (<i>for the main labor functions of the professional standard or the analysis of the profession</i>) * *		<ul style="list-style-type: none"> - Preparation of initial data for the development of construction estimates; - Development of estimate documentation and determination of the estimated cost of construction; - Organization of works on verification and acceptance and transfer of budget and financial documentation to project and contract organizations
Common (basic) competences		
Code of competence	Competences (according to labor functions and level of qualifications)	Modules
Basic competences		
BC1	Apply professional vocabulary in the field of professional activity	BM 1. Application of professional vocabulary in the sphere of professional activity
BC 2	Develop and improve the physical quality	BM 2. Development and improvement of physical qualities
BC 3	Apply basic knowledge of the economy in professional activities	BM 3. Application of basic knowledge of economics in professional activities

BC 4	Understand the history, role, and place of Kazakhstan in the world community	BM 4. Understanding the history, role, and place of Kazakhstan in the world community
BC 5	Apply Basics of Philosophy, social sciences for socialization and adaptation in society and the work collective	BM 5. Application of Basics of Philosophy, social sciences for socialization and adaptation in society and the work collective
BC 6	Follow the rules of labor protection and safety	BM 6. Occupational safety and prevention of accidents
BC 7	Use the laws of physics and apply information technology in professional activities	BM 7. Application of the laws of physics and the use of information technology in professional activities
Professional competences		
PC 1	Determine the amount of initial data and construction works	PM 1. Determination of the amount of initial data and construction works
PC 2	Draw up the estimate documentation and determine the estimated cost of construction.	PM 2. Drawing up the estimate documentation and determine the estimated cost of construction
PC 3	Participate in the acceptance and transfer of estimate documentation and completion certificates	PM 3. Participation in the acceptance and transfer of estimate documentation and completion certificates
PC 4	Justify expenses and keep records of customer and contractor's funds	PM 4. Justification of expenses and keeping records of customer's and contractor's funds
PC 5	Organize work to systematize the storage of approved estimate documentation	PM 5. Organization of work on the systematization of storage of approved estimate documentation
PC 6	Carry out design and research work	PM 6. Carrying out design and research works

4. LIST OF MODULES AND LEARNING OUTCOMES

Name of module	Learning outcomes (in accordance with professional objectives)	Evaluation criteria for learning outcomes	Forming module disciplines
Basic modules			
BM 1. The use of professional vocabulary, the preparation of business papers in the field of professional activity	LO 1.1 Master the grammar and terminology of Kazakh (Russian) and foreign language for communication in the sphere of professional activity	EC 1.1 Mastering the lexical and grammatical material of the Kazakh (Russian) language in the specialty necessary for professional communication	Professional Kazakh (Russian) Professional foreign language Modern Russian/Kazakh language
		EC 1.2. . Knowing the grammatical material in the specialty	
		EC 1.3. The use of terminology in the specialty.	
	LO 1.2 Master the technique of translation (with dictionary) of professionally-oriented texts	EC 2.1. Reading professional texts	
		EC 2.2. Translation (with a dictionary) of professional texts	
		EC 2.3. Development of a special vocabulary of foreign language vocabulary of professional orientation	
	LO 3. To work with organizational, administrative and informational documents using computer technology	EC 3.1. Drawing up in Kazakh (Russian) and foreign languages a resume, autobiography, description, statement, complaint, power of attorney, receipt	
		EC 3.2. Compliance with textual requirements	

		EC 3.3. Creation of documents on the computer that meet modern requirements and established regulations	
BM 2. Development and improvement of physical qualities	LO 1. Strengthen health and healthy lifestyle	CR 1.1. Understanding and adhering to the fundamentals and culture of a healthy lifestyle	Physical education
		CR 1.2. Characteristics of the physiological basis of the respiratory, circulatory and energy supply systems under muscle loads	
		CR 1.3. Performing a set of exercises for general physical training	
	LO 2. To improve physical qualities and psycho-physiological abilities	CR 3.1. Characteristics of the basics of physical activity and methods of its regulation	
		CR 3.2. Selection and application of methods and means of physical culture to improve the basic physical qualities	
		CR 3.3. Implementation of control standards and tests provided by the program	
	LO 3. Provide first aid for injuries and accidents	CR 2.1. Understanding the causes of injury during exercise	
		CR 2.2. Using injury prevention methods	
		CR 2.3. Providing medical care for injuries	
BM 3. Applying of basic	LO 1. Determine the forms and	CR 1.1. Understanding of the laws and	Physical education

knowledge of the economy in professional activities	types of ownership, types of plans, basic economic indicators of the enterprise	principles of a market economy, tax policy, sources of inflation, the main stages and content of planning	
		CR 1.2. Performing of the necessary economic calculations using mathematical methods to determine the main economic indicators of the enterprise	
		CR 1.3. Determination of the main economic indicators of the enterprise	
	LO 2. Understand the development trends of the world economy, the main objectives of the transition to a green economy	CR 2.1. Characteristics of the trends of the world economy	
		CR 2.2. Understanding the main objectives of the state transition to a "green" economy	
		CR 2.3. Applying the basic methods of calculating gross domestic product and gross national product for the state's transition to a green economy	
	LO 3. To determine the possibility of success and the risk of entrepreneurship	CR 3.1. Characteristics of goals, factors, conditions, organizational and legal forms of entrepreneurial activity	
		CR 3.2. Understanding the factors that determine entrepreneurial success	
		CR 3.3. Drawing up a business plan	
	BM 4. Understanding	LO 1. Understand	

the history, role and place of Kazakhstan in the world community	major historical events	understanding of the essence of historical events from antiquity to the present	
		CR 1.2. Understanding the nature and purpose of political and social changes taking place in the Republic of Kazakhstan after independence	
		CR 1.3. Characteristics of the achievements of independent Kazakhstan	
	LO 2. Identify cause-effect relationships of historical events.	CR2.1. Determination of the main facts, processes and phenomena that reflect and characterize the integrity and consistency of the history of Kazakhstan	
		CR 2.2. Linking historical events	
		CR 2.3. Ability to work with historical sources	
	LO 3. Own knowledge to develop national identity	CR 3.1. The role and place of the Kazakh people in the common Turkic community, in the system of nomadic civilization, in the development of the historical and cultural community of the peoples of the Eurasian world	
		CR 3.2. Demonstration of spatial thinking, the ability to analyze historical material	
		CR 3.3. Characteristics of Kazakhstan in the	

		system of foreign political relations of the modern world	
BM 5. Application of Basics of Philosophy, social sciences for socialization and adaptation in society and the work collective	LO 1. Master the basic concepts and information of philosophy, political science, cultural studies and sociology	CR 1.1 Understanding the essence of the concepts, categories and information of philosophy, political science, cultural studies and sociology	Basic Philosophy Cultural Studies Basics of Law Fundamentals of sociology and political science
		CR 1.2. Identification of problems and interrelations of the main categories and concepts of philosophy, political science, cultural studies and sociology	
		CR 1.3. Analysis of various points of view	
	LO 2. Understand international political processes, geopolitical situation and moral values, and norms that form tolerance and an active personal attitude	CR 2.1 Characteristics of the structure of the political system, history and the current state of the world and traditional religions	
		CR 2.2 Determining differences in extremist, radical and terrorist ideologies	
		CR 2.3 Tolerant perception of social, ethnic, religious and cultural differences	
	LO 3. Master the basic concepts and information about the main branches of law	CR 3.1 Possession of the basic provisions of criminal, civil and family law and information about taxes	
		CR 3.2 Understanding of responsibility for administrative and corruption offenses and respect for the	

		principles of law and order	
		CR 3.3 Protection of rights in accordance with the law of labor	
BM 6. Occupational safety and prevention of accidents	LO 1. Follow safety rules and labor protection	CR 1.1 Normative technical acts on labor protection	Occupational safety and prevention of accidents
		CR 1.2 Understanding the organization of labor protection in the enterprise	
		CR 1.3 Abidance of primary safety instructions	
	LO 2. Ensure compliance with process safety	CR 2.1 The management of sanitary and hygienic and sanitary-technical norms of the Republic of Kazakhstan in the organization of work	
		CR 2.2 Comply with the rules for the use of technological equipment, devices and tools, methods and techniques for safe work	
		CR 2.3 The application of the rules of first aid in case of accidents and other damages	
	LO 3. Develop safety and labor protection measures	CR 3.1 General sanitary and hygienic requirements for production premises and workplaces	
		CR 3.2 Organization of service monitoring and supervision of labor protection in the organization.	

		CR 3.3 Analysis of the organization's activities in order to identify risks in the field of occupational safety and health safety of personnel	
BM 7. Applying the laws of physics and the use of information technology in professional activities	LO 1. Apply the basic laws of physics	CR 1.1. Characteristics of physical phenomena and processes, principles of operation of devices and mechanisms using the conceptual apparatus of the school physics course (values, laws, models, concepts)	Fundamentals of Philosophy Fundamentals of Law Fundamentals of Sociology Fundamentals of Political Science Culturology
		CR 1.2. Understanding the essence of methods of working with information of physical content	
		CR 1.3. Understanding the basic laws of building physics	
	LO 2. Solve problems in the field of professional activity	CR 2.1. Characteristic of mathematical material	
		CR 2.2. Generalization of Mathematical Material	
		CR 2.3. Understanding of Mathematical Thinking	
	LO 3. Apply information technology in professional activities	CR 3.1. Understanding methods of automated information processing, network technologies for processing and transmitting information	
		CR 3.2. Understanding interpolation: the process of collecting,	

		transmitting, processing and replenishing information; programming language; programming technology; computer graphics	
		CR 3.3. Formation of resource information base for solving professional tasks	
Professional modules			
PM 1 Determination of initial data volumes and construction works	LO 1. Select the norms and quotations for the cost of construction work and study the title lists, defective sheets and working drawings	CR 1. Definition of norms and costs CR 2. Study of title lists and defective statements CR 3. Analysis of the correctness of working drawings	Construction of buildings and structures; Fundamentals of Economics, Industrial training and/or professional practice
	LO 2. Conduct analysis of price lists and commercial offers of construction materials and equipment	CR 1. Study of types and cost of building materials from price lists and KP, CR 2. Comparison of price lists and commercial offers CR 3. The choice of the optimal variant of price lists and commercial offers of building materials and equipment	
	LO 3. Perform calculations of the scope of work on the basis of control measurements	CR 1. Study of control measurements, CR 2. Calculation of workloads, CR 3. Carry out a performance analysis	

PM 2. Drawing up estimate documentation and determining the estimated cost of construction	LO 1. Make local and object estimates	CR 1. Determination of the elements of the cost of construction, CR 2. Justification of the norms and prices of construction costs CR 3. Drawing up local and object estimates	Construction Materials; Technologies of construction production. Construction of buildings and structures; Fundamentals of Economics, Industrial training and professional practice
	LO 2. Determine the estimated cost of construction	CR 1. Compilation of summary estimate calculation Cr 2. Alignment of the estimated cost of construction CR 3. Determination of the final cost of construction	
	LO 3. Receive the conclusion of complex examination	CR1. Complement and delivery of estimate documentation, CR 2. Organization of interaction with an expert organization, CR 3. Correction of estimates based on observations of the examination, CR 4. Obtaining the conclusion of a comprehensive examination	
PM 3. Participation in the acceptance and transfer of estimate documentation	LO 1. Participate in the acceptance and transfer of estimate documentation	CR1. Understanding the specifics of the project, CR 2. Checking the completeness of the estimate documentation CR 3. Transfer of estimate documentation to executives	Technologies of construction production. Construction of buildings and structures; Fundamentals of Economics, Industrial training and professional practice.
	LO 2. Check the costs justification	CR 1. Checking the norms and rates of calculations of the act of work performed,	

		CR 2. Checking the calculation of the operation of machines and mechanisms and other costs, CR 3. Comparison of current prices for building materials on the market with a database of current prices	
	LO3. Accept certificates on expertise from the contractor	CR.1. Comparison of the cost indicators of the completion certificate with the approved estimate documentation CR 2. Correction of the calculation of completion certificate CR 3. Acceptance of completion certificate	
PM 4. Justification of expenses and keeping records of the funds of the customer or contractor	LO1. Justify the costs of the customer or contractor	CR 1. Checking the certificate of payment form No.2,3 CR 2. Formation of actual construction costs, CR 3. Organization of payment for completed workloads	Building materials and products; Accounting and audit; Fundamentals of Economics and Management
	LO2. Register a cumulative statement of executed and residual volumes of work	CR 1. Carrying out of the comparative analysis of the executed and residual volumes of works, CR 2. Monitoring of mutual settlements, CR 3. Registration of the results of works in established forms,	
	LO3. Keep records of construction cost	CR 1. Determination of the remaining	

	balances from previous periods	construction costs from the previous periods, CR 2. Verification of mutual settlements, CR 3. Organization of acceptance of work performed	
PM 5 Organization of work on the storage of approved estimate documentation	LO1. Determine the completeness of the estimate documentation	CR 1. Selection of approved estimate documentation CR 2. Completion of the estimate documentation CR 3. Preparation for storage of estimate documentation	Fundamentals of paperwork Fundamentals of archival business, Production training and/or training practice.
	LO2. Organize work to systematize the storage of approved estimate documentation	CR 1. Drawing up accounting data of budget documentation CR 2. Conducting work on the classification of budget documentation Cr 3. Organization of work on storage of budget documentation	
	LO 3. Follow the requirements of labor protection and safety in the organization of storage of estimate documentation	CR 1. Understanding labor protection and accident prevention requirements CR 2. Using protective equipment, CR 3. Assistance in obtaining work injury	
PM 6 Participation in research and project activities	LO 1. Studying and generalization of technologies of building production, normative legal acts, methodical materials	CR 1. Analysis of construction technology, regulatory legal acts, existing methodological materials CR 2. Identification of innovative technologies of construction production for the	Fundamentals of market economy; Construction of buildings and structures; Technology of construction production, Technology and

		organization of design and research work CR 3. Analysis of the results of fundamental and exploratory research and the preparation of an analytical review	organization of construction production
	LO 2. Study the methods of research and project activities	CR1. Studying methods of research and project activity, principles of selection of techniques CR 2. Selection and justification of the accepted direction of research and ways of solving problems CR 3. The formation of promising skills, skills and the acquisition of the simplest knowledge necessary for the performance of scientific work	
	LO 3. Participate in drafting a research and project plan	CR 1. Definition of methods and theme of research and project activities CR 2. Application of innovative building technologies CR 3. Participation in the design of a research and project plan	

4.1 Specification of the basic module 1
“The use of professional vocabulary and business documents writing in the state language”

Sphere of competence	-
Module Name	Application of professional vocabulary in the field of professional activity, preparation of business papers in the state language
Module purpose	After studying this module, the student will be able to apply professional vocabulary, make business papers in the state language
Proficiency Level	5
Training results by module	LO 1. To know the grammar and terminology of Kazakh (Russian) and foreign language for communication in the sphere of one's professional activity LO 2. To know the technique of translation (with vocabulary) of professionally oriented texts LO 3. To conduct professional dialogical speech in Kazakh (Russian) and foreign languages
Summary of content (sections, topics)	1. Knowing the lexical material in the specialty; 2. Possession of grammatical material in the specialty; 3. The use of terminology in the specialty; 4. Reading professional texts; 5. Translation (with a dictionary) of professional texts; 6. Development of a special vocabulary of foreign language vocabulary of professional orientation 7. Drawing up in Kazakh (Russian) and foreign languages a summary, autobiography, description, statement, complaint, power of attorney, receipt; 8. Compliance with the requirements for the text of the document; 9. Writing of documents on the computer that meet modern requirements and established regulations.
Prerequisites	Knowledge of the school course of Kazakh, Russian, foreign language; Introduction to the specialty.
Disciplines forming the module	- Professional Kazakh (Russian) language Professional foreign language - Modern Russian / Kazakh language

	- Office work in the state language
Module type (compulsory, optional)	Compulsory
Workload (credits / academic hours)	6 credits /180 hours
The duration of the module	3 semesters
Form of study	intramural
Education technology	Modular
Forms of educational process organization	Lecture, office hours, practical session, laboratory classes, practices.
Teaching methods	Oral enquiry, business games, testing, presentation, report, reference paper, message, interview, creative task, colloquium, case-task, credit
Form of control	Pass fail exam, exam
Necessary resources	<p>Personal computer, educational and methodical literature in the disciplines: professional Kazakh (Russian) language, professional foreign language, modern Russian / Kazakh language, paperwork in the state language.</p> <p>В. Murzalina, S. Nurkeeva, G. Nurgazina, M. Sagyndykova, S. Baitasova. Textbook for intensive teaching of the Kazakh language, 2009;</p> <p>V. A. Radovel English for technical universities. Tutorial, 2016</p> <p>Жахина Б., Құрманова А.Қ., Қайырбекова И.С. Мемлекеттік тілде іс қағаздарын жүргізу курсы. - Көкшетау, 2003. – 120 б.</p> <p>А.Баймуханова. Мемлекеттік тілде іс қағаздарын жүргізу. Алматы, 2010</p> <p>Н. Егіншебаева. Мемлекеттік тілде іс қағаздарын жүргізу. Алматы, 2012</p> <p>Б.Айтбаева, Г.Абдрахманова. Қазақ тілі (B2 деңгейі).Қарағанды, 2012</p>
Language of instruction	Russian, Kazakh
Post requisites	PM 1- PM 6

4.2 Specification of the basic module 2
“Development and improvement of physical qualities”

Sphere of competence	-
Module Name	Development and improvement of physical qualities
Module purpose	By the end of this module, the student will be able to develop and improve physical qualities.
Proficiency Level	4
Training results by module	LO 1. To strengthen health and abide by the principles of a healthy lifestyle; LO 2. To improve physical qualities and psycho-physiological abilities; LO 3. To provide first aid for injuries and accidents.
Summary of content (sections, topics)	1. Understanding and adhering to the fundamentals and culture of a healthy lifestyle; 2. Characteristics of the physiological bases of the activity of the respiratory, circulatory and energy supply systems under muscle loads; 3. Performing a set of exercises for general physical training; 4. Characteristics of the basics of physical activity and methods of its regulation; 5. Selection and application of methods and means of physical culture to improve basic physical qualities; 6. Implementation of control standards and tests provided by the program; 7. Understanding the causes of injury during exercise; 8. The use of methods of injury prevention; 9. Providing first medical care for injuries.
Prerequisites	Valeology Psychology Biology
Disciplines forming the module	- Physical education
Module type (compulsory, optional)	Compulsory
Workload (credits / academic hours)	6 credits / 180 hours

The duration of the module	3 semesters
Form of study	intramural
Education technology	Modular
Forms of educational process organization	Lecture, office hours, practical session, laboratory classes, practices.
Teaching methods	Verbal (conversation, lecture); visual, competitive; practical exercises.
Form of control	Pass fail exam, exam
Necessary resources	Gym equipped with equipment: Volleyball net; Basketball backboard; Multifunctional simulator; Simulator hyperextension; Bench for bench press; Simulator bench scott; Simulator t-neck; Table tennis; Gymnastic bench; Gymnastics mat; Gymnastic goat; Gymnastic bridge universal; The volleyball ball is massive; Basketball ball; Multimedia equipment, Internet resources and posters on occupational safety and health, fire safety and environmental protection, educational and methodical literature. Yu.I. Evseev. Physical education for university students. - Rostov-on-Don. -2003.
Language learning	Russian, Kazakh
Post requisites	PM 1 – PM 6

4.3 Specification of the basic module 3

"Application of basic knowledge of the economy in professional activities"

Sphere of competence	-
Module Name	Application of basic knowledge of economics in professional activities
Module purpose	After studying this module, the student will be able to apply the basic knowledge of the economy in their professional activities.
Proficiency Level	4
Training results by module	LO 1. To determine the forms and types of property, types of plans, the main economic indicators of the enterprise; LO 2. To understand the development trends of the world economy, the main objectives of the state transition to a green economy; LO 3. To determine the possibility of success and risk business.
Summary of content (sections, topics)	1. Understanding the laws and principles of a market economy, tax policy, sources of inflation, the main stages and content of planning 2. Perform the necessary economic calculations using mathematical methods to determine the main economic indicators of the enterprise 3. The definition of the main economic indicators of the enterprise 4. Characteristics of the trends of the world economy 5. Understanding the main objectives of the state's transition to a green economy 6. Application of basic methods for calculating gross domestic product and gross national product for the state's transition to a green economy 7. Characteristics of goals, factors, conditions, organizational and legal forms of entrepreneurial activity 8. Understanding the factors that determine business success 9. Drawing up a business plan
Prerequisites	Basics of state and law
Disciplines forming the module	- Fundamentals of economics

Module type (compulsory, optional)	Compulsory
Workload (credits / academic hours)	3 credits /90 hours
The duration of the module	1 semester
Form of study	intramural
Education technology	Modular
Forms of educational process organization	Lecture, office hours, practical session, laboratory classes, practices.
Teaching methods	Oral questioning, testing, report, abstract, creative task
Form of control	Pass fail exam
Necessary resources	Personal computer, Internet resources, educational and methodical literature in the disciplines: Fundamentals of Economics. Sakhariev, S.S. Modern course of economic theory [Electronic resource]: textbook / S.S. Saccharides; A.S. Sakhariev. - Almaty: Jurid. Lit. 2009
Language of instruction	Russian, Kazakh
Post requisites	PM 1 –PM 6

4.4. Specification of the basic module 4
"Understanding the history, role and place of Kazakhstan in the world community"

Sphere of competence	-
Module Name	Understanding the history, role and place of Kazakhstan in the world community
Module purpose	By the end of this module, the student will understand the history, role and place of Kazakhstan in the world community.
Proficiency Level	4
Training results by module	<ol style="list-style-type: none"> 1. To understand major historical events 2. To determine the causal relationships of historical events. 3. To own knowledge for the development of national identity
Summary of content (sections, topics)	<ol style="list-style-type: none"> 1. Understanding the essence of historical events that took place from antiquity to the present 2. Understanding the nature and purpose of the political and social changes taking place in the Republic of Kazakhstan after independence. 3. Characteristics of the achievements of independent Kazakhstan 4. Determination of the main facts, processes and phenomena that reflect and characterize the integrity and consistency of the history of Kazakhstan 5. Establishing links between historical events 6. Ability to work with historical sources 7. The role and place of the Kazakh people in the common Turkic community, in the system of nomadic civilization, in the development of the historical and cultural community of the peoples of the Eurasian world 8. Demonstration of spatial thinking, the ability to analyze historical material 9. Characteristics of Kazakhstan in the system of foreign political relations of the modern world
Prerequisites	History of Kazakhstan (initial course)
Disciplines forming the module	History of Kazakhstan
Module type (compulsory, optional)	Compulsory

Workload (credits / academic hours)	3 credits / 90 hours
The duration of the module	1 semester
Form of study	intramural
Education technology	Modular
Forms of educational process organization	Lecture, office hours, practical session, laboratory classes, practices.
Teaching methods	Oral survey, testing, report, abstract, creative task
Form of control	Pass fail exam, exam
Necessary resources	Personal computer, educational and methodical literature on the discipline of the history of Kazakhstan. Abdakimov A. History of Kazakhstan. - Almaty, 2002 Abylhozhin ZH.B. Essays on the socio-economic history of Kazakhstan XX century. - Almaty, 1997. Razdykov S.Z. History of Kazakhstan. Study guide for colleges. - Pavlodar, 2005. 165 p.
Language of instruction	Russian, Kazakh
Post requisites	PM 1-PM 6

4.5 Specification of the basic module 5
"Applying of the basics of philosophical knowledge, social sciences for socialization and adaptation in society and the work places "

Sphere of competence	-
Module Name	Application of the basics of philosophical knowledge, social sciences for socialization and adaptation in society and the workforce
Module purpose	By the end of this module, the student will be able to apply the basics of philosophical knowledge, social sciences for socialization and adaptation in society and the workforce.
Proficiency Level	4
Training results by module	<ol style="list-style-type: none"> 1. To know basic concepts and information of philosophy, political science, cultural studies and sociology; 2. To understand the international political processes, the geopolitical situation and moral values, and the norms that form tolerance and an active personal position; 3. To know basic concepts and information about the main branches of law.
Summary of content (sections, topics)	<ol style="list-style-type: none"> 1. Understanding the essence and essence of the concepts, categories and information of philosophy, political science, cultural studies and sociology 2. Identification of problems and interrelations of the main categories and concepts of philosophy, political science, cultural studies and sociology 3. Analysis of various points of view 4. Characteristics of the structure of the political system, history and current state of the world and traditional religions 5. Definition of differences of extremist, radical and terrorist ideologies 6. Tolerant perception of social, ethnic, religious and cultural differences. 7. Possession of the basic provisions of criminal, civil and family law and information about taxes 8. Understanding of responsibility for administrative and corruption offenses and the observance of the principles of law and order 9. Protecting your rights in accordance with labor laws

Prerequisites	World history History of Kazakhstan
Disciplines forming the module	Basic philosophy Culturology Law basics Fundamentals of sociology and political science
Module type (compulsory, optional)	Compulsory
Workload (credits / academic hours)	6 credits / 180 hours
The duration of the module	3 semesters
Form of study	intramural
Education technology	Modular
Forms of educational process organization	Lecture, office hours, practical session, laboratory classes, practices.
Teaching methods	Oral questioning, testing, report, abstract, creative task
Form of control	Pass fail exam
Necessary resources	Personal computer, software, Internet resources, educational and methodical literature in the following disciplines: Fundamentals of Philosophy, Fundamentals of Law, Fundamentals of Sociology and Political Science, Cultural Studies. Bagdasaryan N. G. Culturology: Textbook. for stud. tech. universities / Coll. auth .; Ed. N. G. Bagdasaryan. - 3rd ed., Corr. and add. - M .: Higher. school., 2001.-511 p. Razdykov S.Z. Basics of political science. Textbook. - Astana, "Foliant", 2008. 312 p. Zelenkov A. I. Philosophy: an educational and methodical complex. - 2003. Mkrtchyan E.R. Basics of Sociology, Textbook, Volgograd, 2017 KS Birzhanov, K. B. Ibraeva. Basics of Law of the Republic of Kazakhstan, 2013
Language of instruction	Russian, Kazakh
Post requisites	PM 1 – PM 6

4.6 Specification of the basic module 6 "Labor protection and safety engineering "

Sphere of competence	-
Module Name	Labor protection and safety engineering
Module purpose	By the end of this module, the student will be able to apply the necessary knowledge, skills of safe labor in industrial and domestic conditions, injury prevention and skills of providing a favorable business environment
Proficiency Level	4
Training results by module	<ol style="list-style-type: none"> 1. Follow safety rules and labor protection 2. Ensure compliance with the safety of technological processes. 3. Develop safety and labor protection measures
Summary of content (sections, topics)	<ol style="list-style-type: none"> 1. Normative technical acts on labor protection 2. Understanding the organization of labor protection in the enterprise 3. Compliance with the initial safety instructions 4. Management of sanitary and hygienic and sanitary-technical norms of the Republic of Kazakhstan in the organization of work 5. Comply with the rules for the use of technological equipment, devices and tools, methods and techniques for safe work 6. The application of the rules of first aid in case of accidents and other damages. 7. General sanitary and hygienic requirements for production facilities and workplaces 8. Organization of service monitoring and supervision of labor protection in the organization. 9. Analysis of the organization's activities in order to identify risks in the field of occupational safety and health, personnel health
Prerequisites	Physical education
Disciplines forming the module	Labor protection and safety engineering
Module type (compulsory, optional)	Compulsory

Workload (credits RoK / academic hours)	4 credits / 120 hours
The duration of the module	2 semesters
Form of study	intramural
Education technology	Modular
Forms of educational process organization	Lecture, office hours, practical session, laboratory classes, practices.
Teaching methods	Oral questioning, testing, report, abstract, creative task
Form of control	Exam, tests, course project
Necessary resources	Personal computer, educational and methodical literature on the subject of labor protection and safety. Amanzholov J. Occupational safety and health: a training manual. 3rd ed. - Astana: Foliant, 2014. 272 p.
Language of instruction	Russian, Kazakh
Post requisites	PM 1- PM 6

4.7. Specification of the basic module 7
"Applying of the laws of physics and the use of information technology in professional activities "

Sphere of competence	-
Module Name	Application of the laws of physics and the use of information technology in professional activities
Module purpose	By the end of this module, the student will be able to use the laws of physics and apply information technologies in their professional activities.
Proficiency Level	4
Training results by module	<ol style="list-style-type: none"> 1. To apply the basic laws of physics; 2. To solve problems in the field of professional activity; 3. To apply information technology in professional activities.
Summary of content (sections, topics)	<ol style="list-style-type: none"> 1. Characteristics of physical phenomena and processes, principles of operation of devices and mechanisms using the conceptual apparatus of a school physics course (values, laws, models, concepts) 2. Understanding the essence of the methods of working with information of physical content 3. Understanding the basic laws of building physics 4. Characteristics of mathematical material 5. Generalization of mathematical material 6. Understanding Mathematical Thinking 7. Understanding methods of automated information processing, network technologies for processing and transmitting information 8. Understanding interpolation: the process of collecting, transmitting, processing and updating information; programming language; programming technology; computer graphics 9. Formation of resource and information base for solving professional tasks
Prerequisites	Physics Computer science School Math
Disciplines forming the module	Physics I, II Mathematics I, II Information and communication technology

Module type (compulsory, optional)	Compulsory
Workload (credits / academic hours)	2 credits / 60 hours
The duration of the module	1 semester
Form of study	intramural
Education technology	Modular
Forms of educational process organization	Lecture, office hours, practical session, laboratory classes, practices
Teaching methods	Oral questioning, testing, report, reference paper, creative task
Form of control	Pass fail exam
Necessary resources	Personal computer, educational and methodical literature in the following disciplines: Physics I, II, Mathematics I, II, Information and Communication Technologies. Deshko I.P., Kovalev S.N., Kryazhenkov KG, Mordvinov V.A., Trifonov N.I., Tulinov S.V., Tsyppkin V. Information and Communication Technologies: A Manual, 2005. - P.147
Language of instruction	Russian, Kazakh
Post requisites	PM 1 – PM 6

4.8. Specification of the professional module 1 “Determination of the volumes of initial data and construction works”

Sphere of competence	Preparation of initial data volumes and construction works for development of construction estimate documentation
Name of module	Determination of initial data volumes and construction works
Purpose of module	- By the end of this module, student will be able to determine the volumes of initial data and construction works
Level of professional qualification	4
Learning outcomes by module	LO 1. Select the norms and quotations for the cost of construction work and study the title lists, defective sheets and working drawings LO 2. Analyze the price lists and commercial offers of construction materials and equipment LO 3. Perform calculations of the scope of work on the basis of control measurements
Summary of contents (sections, topics)	1. Defining norms and quotations 2. Study of title lists and defective statements, 3. Analyze of the correctness of working drawings 4. Study the types and cost of building materials from price lists and commercial offers, 5. Compare price lists and commercial offers, 6. Choosing the optimal option for the cost of building materials and equipment, 7. Study control measurements, 8. Carrying out calculations of the amount of work, 9. Performance analysis of building materials and equipment
Prerequisites	Physics, Mathematics, Engineering graphics
Forming modules disciplines	Construction of buildings and structures; Fundamentals of Economics, -Industrial training and/or professional practice
Type of module (compulsory, optional)	Compulsory
Labor intensity (credits/academic hours)	14 credits / 180 hours
Length of module	3-8 semesters
Form of education	Full time
Technology of education	Module

Forms of educational organization process	Lecture, Student's Individual Work, practical trainings, laboratory trainings, practices
Methods of education	Recitation, business games, test, presentation, report, reference paper, interview, creative task, colloquium, case task, examination
Forms of control	Pass fail exam, exam
Necessary resources	Personal computer, program support, educational materials, textbooks Razakov I. "Constructions of buildings and structures"; Khamzin S.K. "Technology of construction production"
Language of instruction	Russian, Kazakh
Postrequisites	Technology of building production

4.9 Specification of the professional module 2 “Preparation of estimate documentation and determination of the estimated cost of construction”

Sphere of competence	Development of estimate documentation and determination of the estimated cost of construction
Name of module	Preparation of estimate documentation and determination of the estimated cost of construction
Purpose of module	After studying this module, student will be able to make the estimate documentation and determine the estimated cost of construction
Level of professional qualification	4
Learning outcomes by module	LO 1. Compile local and object estimates LO 2. Determine the estimated cost of construction LO 3. Receive the conclusion of the complex examination
Summary of contents (sections, topics)	1. Determination of the elements of the cost of construction, 2. Justification of the norms and prices of construction costs 3. Drawing up of local and object estimates 4. Compilation of consolidated estimate calculation 5. Alignment of the estimated cost of construction 6. Determination of the final cost of construction 7. Completing and delivery of estimate documentation, 8. Organization of interaction with an expert organization, 9. Correction of estimates based on observations of the examination, 10. Receipt of the conclusion of the complex examination
Prerequisites	- Physics; Mathematics;
Forming modules disciplines	Building materials and products; Technologies of building production. Construction of buildings and structures; Fundamentals of Economics, -Industrial training and professional practice.
Type of module (compulsory, optional)	compulsory
Labor intensity (credits/academic hours)	18 credits / 540 hours
Length of module	3-4 semesters
Form of education	Full time

Technology of education	Module
Forms of educational process organization	Lecture, Student's Individual Work, practical trainings, laboratory trainings, practices
Methods of education	Recitation, business games, test, presentation, report, reference paper, interview, creative task, colloquium, case task, examination
Forms of control	Pass fail exam, exam
Необходимые ресурсы	Personal computer, program support, educational materials, textbooks Razakov I. "Constructions of buildings and structures"; Khamzin S.K. "Technology of construction production"
Language of instruction	Russian, Kazakh
Postrequisites	Economics in construction

4.10 Specification of the professional module 3 “Participation in the acceptance and transfer of budget documentation and completion certificates”

Sphere of competence	Participation in the acceptance and transfer of budget documentation and completion certificates
Наименование модуля	Participation in the acceptance and transfer of budget documentation and completion certificates
Purpose of module	After studying this module, student will be able to accept and transfer the estimate documentation and completion certificates
Level of professional qualification	4
Learning outcomes by module	LO 1. Participate in the acceptance and transfer of estimate documentation LO 2. Check the justification of costs LO 3 Accept completion certificate from the contractor
Summary of contents (sections, topics)	1. Understanding the specifics of the project, 2. Checking the completeness of the estimate documentation 3. Transfer of estimate documentation performers, 4. Checking the norms and quotations for the calculation of completion certificate 5. Checking the calculation of the operation of machines and mechanisms and other costs, 6. Comparison of the cost of building materials on the market with a database of current prices 7. Comparison of cost indicators of certificates of the executed works with the approved estimate documentation, 8. Correction of the calculation completion certificate 9. Acceptance of completion certificate
Prerequisites	- Physics, Mathematics
Forming module disciplines	-Technologies of construction production. Construction of buildings and structures; Fundamentals of Economics, -Production training and professional practice.
Type of module (compulsory, optional)	Compulsory
Labor intensity (credits/academic hours)	16 credits / 480 hours
Length of module	3-4 semesters
Form of education	Full time

Technology of education	module
Forms of educational process organization	Lecture, Student's Individual Work, practical trainings, laboratory trainings, practices
Methods of education	Recitation, business games, test, presentation, report, reference paper, interview, creative task, colloquium, case task, examination
Forms of control	Pass fail exam, exam
Necessary resources	Personal computer, program support, educational materials, textbooks O. Sabdenov "Fundamentals of market economy"; Razakov I. "Constructions of buildings and structures"; Khamzin S.K. "Technology of construction production"
Language of instruction	Russian, Kazakh
Postrequisites	Economics in construction

4.11 Specification of the professional module 4 “Justification of costs and record keeping of customer and contractor funds”

Sphere of competence	Organization of work on justifying expenses and keeping records of the funds of the customer or contractor
Name of module	Justification of costs and record keeping of customer and contractor funds
Purpose of module	After studying this module, student will be able to justify the expenses and keep records of the funds of the customer or contractor
Level of professional qualification	4
Learning outcomes by module	LO1 Justify the costs of the customer or contractor LO2. Register a cumulative statement of executed and residual volumes of work LO3. Keep records of construction cost balances from previous periods
Summary of contents (sections, topics)	<ol style="list-style-type: none"> 1. Check of certificates on payment of the form No. 2,3 2. Formation of actual construction costs, 3. Organization of payment for completed workloads 4. Carrying out of the comparative analysis of the executed and residual volumes of works, 5. Monitoring of mutual settlements, 6. Formulation of the results of works in established forms, 7. Determination of the remaining construction costs from the previous periods, 8. Verification of mutual settlements, 9. Organization of acceptance of work performed
Prerequisites	Physics; Mathematics; Construction of buildings and structures,
Forming modules disciplines	Building materials and products; - Accounting and audit; Fundamentals of Economics and Management;
Type of module (compulsory, optional)	Compulsory
Labor intensity (credits/academic hours)	10 credits / 300 hours
Length of module	3-8 semesters
Form of education	Full time
Technology of education	Module

Forms of educational process organization	Lecture, Student's Individual Work, practical trainings, laboratory trainings, practices
Methods of education	Oral questioning, business games, test, presentation, report, reference paper, interview, creative task, colloquium, case task, examination
Forms of control	Pass fail exam, exam
Necessary resources	Personal computer, program support, educational materials, textbooks O. Sabdenov "Fundamentals of market economy"; Razakov I. "Constructions of buildings and structures";
Language of education	Russian, Kazakh
Postrequisites	Economics in construction

4.12. Specification of the professional module 5
“Work organization on the storage of approved estimate documentation”

Sphere of competence	Work organization on the storage of approved estimate documentation
Name of module	Work organization on the storage of approved estimate documentation
Purpose of module	By the end of this module, student will be able to organize the storage of the approved budget documentation
Level of professional qualification	4
Learning outcomes by module	LO 1. Determine the completeness of the budget documentation LO 2. Organize work on the systematization of storage of approved estimates LO 3. Follow the requirements of labor protection and safety in the organization of storage of estimate documentation
Summary of contents (sections, topics)	1. Selection of approved estimate documentation 2. Completion of the estimate documentation 3. Preparation for storage of estimate documentation 4. Preparation of accounting data of budget documentation 5. Conducting work on the classification of budget documentation, 6. Organization of work on storage of budget documentation 7. Understanding occupational safety and health requirements 8. Use of protective equipment, 9. Assistance in obtaining work injury
Prerequisites	Health and safety
Forming modules disciplines	Fundamentals of paperwork - Fundamentals of archival business, Industrial training and/or training practice.
Type of module (compulsory, optional)	Compulsory
Labor intensity (credits/academic hours)	11 credits / 300 hours
Length of module	3-8 semesters
Form of education	Full time

Technology of education	Module
Forms of educational process organization	Lecture, Student's Individual Work, practical trainings, laboratory trainings, practices
Methods of education	Recitation, business games, test, presentation, report, reference paper, interview, creative task, colloquium, case task, examination
Forms of control	Pass fail exam, exam
Necessary resources	Personal computer, program support, educational materials, textbooks O. Sabdenov "Fundamentals of market economy";
Language of education	Russian, Kazakh
Postrequisites	Archival studies

4.13 Specification of the professional module 6 “Carrying out design and research works”

Sphere of competence	Design and Research Activities
Name of module	Carrying out design and research works
Purpose of module	By the end of this module, student will be able to carry out design and research work
Level of professional qualification	4
Learning outcomes by module	LO 1. Study the literature on the organization of design and research works LO 2. Draw up a work plan for the design research work LO 3. Carry out design and research work
Summary of contents (sections, topics)	1. Analysis of production technologies for construction works, regulatory legal acts, existing methodological materials, 2. Identification of technologies for the production of construction works and methodological materials for the organization of design and research work 3. Analysis of the results of fundamental and exploratory research and the preparation of an analytical review 4. Study of methods of research and project activities, principles of selection of techniques 5. Choice and justification of the accepted direction of research and ways of solving problems 6. Formation of promising skills, skills and acquisition of the simplest knowledge necessary for the performance of scientific work 7. Definition of methods and theme of research and project activities 8. Application of new innovative technologies 9. Participation in the development of a plan for research and project activities
Prerequisites	Physics, mathematics
Forming module disciplines	- Fundamentals of market economy; Construction of buildings and structures; Technology of construction production, Handbook on course and diploma design of technology and organization of construction production - Industrial training and/or professional practice (Coursework)

Type of module	compulsory
Labor intensity (credits/academic hours)	8 credits / 240 hours
Length of module	3-8 semesters
Form of education	Full time
Technology of education	Modular
Forms of educational process organization	Lecture, Student's Individual Work, practical trainings, laboratory trainings, practices
Methods of education	Recitation, business games, test, presentation, report, reference paper, interview, creative task, colloquium, case task, examination
Forms of control	Pass fail exam, exam
Necessary resources	Personal computer, program support, educational materials, textbooks O. Sabdenov "Fundamentals of market economy"; Razakov I. "Constructions of buildings and structures"; Khamzin S.K. "Technology of construction production", "Textbook on course and diploma design of technology and organization of construction production"
Language of education	Russian, Kazakh
Postrequisites	The fundamentals of communicative relations; Health and safety

PLAN OF EDUCATIONAL PROCESS

Code and profile of education 1400000 – Construction and utilities
 Speciality 1401000 – Construction and operation of buildings and structures
 Qualification 1401313 – Technician of estimate supplying

Form of education: full time
 Normal term of education: 3 years 10 months on the
 basis of basic secondary education

Code of module	Name of cycles, disciplines/modules, practices	Credits	Exam	Differential pass fail exam	Volume of academic hours (hours)				Distribution by semesters	
					TOTAL	Из них:				
						Theoretical training	Practical training**	Industrial training		Individual training
GED	General education disciplines	48		+	1448	1448				1-4
BM	Basic modules	30		+	900	480	-	360	60	3-8
BM 1	Application of professional vocabulary in the sphere of professional activity	6	+	+	180	90		60	30	3-8
BM 2	Development and improvement of physical qualities	6	+	+	180	-	-	180	-	3-8
BM 3	Application of basic knowledge of economics in professional activities	3		+	90	60		30		3-8
BM 4	Understanding the history, role and place of Kazakhstan in the world community	3	+	+	90	90	-	-	-	3-8

BM 5	Application of the basics of philosophical knowledge, social sciences for socialization and adaptation in society and the workforce	6		+	180	150	-	30	-	3-8
BM 6	Occupational safety and prevention of accidents	4		+	120	60	-	30	30	3-8
BM 7	Applying of the laws of physics and the use of information technology in professional activities	2		+	60	30		30		3-8
PM	Professional modules on working qualifications (including industrial training and professional practice)	48		+	1440	360	720	270	90	3-8
PM 1	Determination of initial data volumes and construction works	14	+	+	420	60	180	60	30	3-8
PM 2	Drawing up estimate documentation and determining the estimated cost of construction	18	+	+	540	180	300	120	30	3-8
PM 3	Participation in the acceptance and transfer of estimate documentation	16	+	+	480	120	240	90	30	3-8
PM	Professional modules for mid-level specialist qualifications (including in-service training and professional practice)	35			1050	330	420	210	90	
PM 4	Justification of expenses and keeping records of customer and contractor's funds	10	+	+	300	90	150	60	30	3-8
PM 5	Organization of works on systematization of storage of approved budget documentation	11	+	+	330	120	150	90	30	3-8
PM 6	Carrying out of design and research works	8	+	+	240	60	60	30	15	3-8
	Total:	161			4838	2618	1140	840	240	
PGI	Pre-graduation internship	10			300		300			8
IC 1	Diploma projection	9			270	180			90	8
IC 2	Intermediate certification	10			300	300				1-8
DP 01	Final certification	2			60	60				8

	Total on compulsory education:	192			5768	3158	1440	840	330	
C	Consultations	13			400	400				1-8
OL	Optional lessons	14			420	420				1-8
	Total	219			6588	3978	1440	840	330	

Note:

* The forms of control (the number of course papers, examinations), the order of studying the disciplines (distribution by semester) are exemplary and can vary depending on the forms of study, the specifics of specialties, local and other conditions (circumstances), including in accordance with the needs of employers.

** In accordance with the State Educational Establishment of Teachers' Educational Institutions, educational institutions can change up to 50% of the amount of study time allocated for the development of educational material for modules, up to 50% for each module and up to 60% (up to 80% for dual training) of vocational training and professional practice with keeping the total number of hours for compulsory education.