

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

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

**EDUCATIONAL PROGRAM**

**1401000- Construction and Maintenance of Buildings and Structures**  
(code and name of the specialty)

**Level of professional qualification : middle-level specialist**

**Duration of training: 3 years 10 months.**

**Astana, 2018**

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## **INTRODUCTION**

The present education program is prepared in accordance with the current Law of the Republic of Kazakhstan “On Education”, normative documents, resolutions of the Government of the Republic of Kazakhstan in education and architectural and construction activities. 1401000 – “Construction and Maintenance of buildings and structures” for the qualification 140132 3 – “Technician for technical inspection of buildings and structures”.

The program is designed to implement the principles of the democratic nature of education management, 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 program will allow to take into account the abilities and needs of the individual, production and society.

The modular-competence approach is based on the development of training and the student’s competencies assessment in educational institutions in the form of basic educational outcomes, the possibility of using a differentiated approach to teaching.

The program ensures the application of an individual approach to the students, greater freedom in the choice of teaching methods by the teachers, the forms of organization and the educational process content, the acquisition by the students in the same educational institution of different levels - from the basics of the profession to the level of a highly skilled worker, a middle-level specialist, an applied bachelor.

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

A distinctive feature of this educational program is the compliance with the requirements of employers to conduct a technical survey and inspection of buildings and structures through the formation of basic and professional competencies to develop drawings of full-scale measurements of buildings erections and structures, as well as visual and instrumental inspection of buildings and structures.

Based on this EP, the education organization develops working curricula and programs using appropriate methodological recommendations for working training and planning documentation.

## ABBREVIATIONS AND DESIGNATIONS USED

BC	Basic competence
BM	Basic module
SCES	The State compulsory education standard
FC	Final certification
C	Consultation
NCO	National classifier of occupations
NQF	National Qualifications framework
NQC	National qualifications system
GPD	General professional disciplines
GCEA	General classifier of types of economic activity
GM	General module
GED	General Education Discipline
EP	Educational program
GPM	General professional module
IC	Intermediate certification
PC	Professional competence
PM	Professional module
IP	Industrial training
PP	Professional practice
RoK	The Republic Of Kazakhstan
TO	Training Outcome
TVE	Technical and vocational education
O	Optional classes

## PASSPORT OF THE WORKING EDUCATIONAL PROGRAM

**Name** (*specialty code and name*): 1401000- Construction and maintenance of buildings and structures

**Qualification name and code**: 1401323 -Technician on technical survey of buildings and structures

**The purpose of the educational program:**

Preparation of highly qualified specialists to determine the current technical condition of buildings or structures, defects identification and performance of designs.

**Level of education**: technical and vocational

**Professional qualification**: Middle-level Specialist

**Skill levels on NQF/SQF**: 4

**Professional Area activity** \*: Construction

Type (s) of employment:

1. Definition of the technical condition of measuring instruments to carry out a survey of buildings and constructions;
2. Performance of technical surveys of buildings and structures;
3. Execution of drawings on enhance of full-scale measurements.

**Object (s) of professional activity**: the organizations, centers.

**Program Features\*\*\*\***: The possibility to use dual forms of professional training, credit system education.

**Form of training**: full-time

**Training terms**: 3 years 10 months.

**Language of training**: Russian

**The volume of credits/hours**: 219/ 6588 hours.

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

\*Specifies the parameters of the SQF (methodical recommendations on the development and design of sectorial qualification frameworks, Astana, 2016).

\*\* Specifies according to PS (methodical recommendations on the design and execution of professional standards, Astana, 2017)

\*\*\*Specifies the system objects (objects), phenomena, processes, and technology that aims activities.

\*\*\*\*Specifies the dual education/distance training/credit technology

\*\*\*\*\* Specifies the previous education: basic secondary/secondary/technical and vocational education

## COMPETENCY PROFILE

<p>The purpose of the training : work on the definition of the current technical condition of buildings and structures and identify defects and performance of designs</p>	<p>After the successful completion of the program, the trainee will be able to carry out work on the definition of the current technical condition of buildings and structures and identify defects and performance of designs</p>	
<p>The name of the section, section, group, class and subclass according to GCEA * (<i>professional standard</i>)</p>	<p>NACE code: 41201 Section: [F] Construction Section: [41] Construction of buildings Group: [412] Construction of residential and non-residential buildings Class: [4120] Construction of residential and non-residential buildings GCEA code: 41202 Section: [F] Construction Section: [41] Construction of buildings Group: [412] Construction of residential and non-residential buildings Class: [4120] Construction of residential and non-residential buildings</p>	
<p>The scope of competencies (<i>core labor functions of professional standard or analysis profession</i>) *</p>	<p>1. Definition of the technical condition of measuring instruments to carry out a survey of buildings and constructions; 2. Performance of technical surveys of buildings and structures; 3. Execution of drawings on enhance of full-scale measurements.</p>	
<p><b>Basic Competence</b></p>		
<p><b>Competency code</b></p>	<p><b>Competence (in accordance with the labor functions)</b></p>	<p><b>Module</b></p>
<p>BC 1</p>	<p>Use professional vocabulary in the field of professional activity and prepare business papers in the state language</p>	<p>BM 1. Application of professional vocabulary and design of business papers in the field of professional activity</p>
<p>BC 2</p>	<p>Develop and improve the physical quality</p>	<p>BM 2. Development and improvement of physical qualities</p>

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
<b>Professional competence</b>		
PC 1	Determine technical condition of instruments, apparatus and machines	PM 1. Determination of technical condition of instruments, apparatus and machines
PC 2	Preliminary technical inspection of structures of buildings and structures	PM 2. Preliminary technical inspection of structures of buildings and structures
PC 3	Carry out an instrumental survey of structures of buildings and structures	PM 3. Carrying out an instrumental survey of structures of buildings and structures
PC 4	To carry out full-scale drawings constructions	PM 4. Execution of drawings of full-scale measurements of buildings structures and structures



## THE LIST OF MODULES AND LEARNING OUTCOMES

Module name	Learning outcomes (in accordance with the professional tasks)	Assessment Criteria of training outcomes	Module forming disciplines
<b>Basic Modules</b>			
BM 1. Application of professional vocabulary, the preparation of business papers in the field of professional activity	LO 1 1. Know the grammar and terminology of the Kazakh (Russian) and foreign languages for communication in the sphere of their professional activities	CR 1.1. Possession of Lexico-grammatical material, necessary for professional communication	Professional Kazakh (Russian) language Professional foreign language Modern Russian/Kazakh language
		CR 1.2. . Knowing the grammatical material in the specialty	
		CR 1.3. The use of terminology in the specialty.	
	LO 2. To master the translation technique (with a dictionary) of professional-oriented texts	CR 2.1. Reading professional texts	
		CR 2.2. Translation (with a dictionary) of professional texts	
		CR 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	CR 3.1. Drawing up in Kazakh (Russian) and foreign languages a resume, autobiography, description, statement, complaint, power of attorney, receipt	
		CR 3.2. Compliance with textual requirements	
		CR 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. Understanding and adhering to the fundamentals and culture of a healthy lifestyle	Physical education
		CR 2. Characteristics of the physiological basis of the respiratory, circulatory and energy supply systems under muscle loads	
		CR 3. Performing a set of exercises for general physical training	
	LO 2. To improve physical qualities and psycho-physiological abilities	CR 1. Characteristics of the foundations of physical activity and methods of its regulation	
		CR 2. Selection and application of methods and means of physical culture to improve the basic physical qualities	
		CR 3. Implementation of control standards and tests provided by the program	
	LO 3. Provide first aid for injuries and accidents	CR 1. Understanding the causes of injury during exercise	
		CR 2. Using injury prevention methods	
		CR3. Providing medical care for injuries	
BM 3. Application of basic knowledge of economics in professional activities	LO 1. To determine the forms and types of property, types of plans, basic economic	CR 1.1. Understanding of the laws and principles of a market economy, tax policy, sources of inflation, the main stages and content of planning	Basics of Economics

	indicators of an enterprise	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 state's 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 the history, role and place of Kazakhstan in the world community	LO 1. Understand major historical events	CR 1.1. Understanding of chronology and 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	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	

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

		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)	Physics, Maths, Information and communication technology
		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	
<b>Professional modules</b>			
<b>Professional modules</b>	<b>Learning outcomes</b>	<b>Assessment Criteria</b>	<b>Module forming disciplines</b>
PM 1 Determination of technical condition of instruments, apparatus and machines	LO 1. Assess the health of instruments, apparatus and machines	CR 1.1 Characteristics of work instruments, appliances and machines	Fundamentals of electrical engineering and electronics Maintenance of instrumentation
		CR 1.2 Conduct a Visual inspection of the instruments, apparatus and machines	
		CR 1.3 Determine if devices, apparatus and machines	
	LO 2. To determine the optimal operating modes instruments, apparatus and machines	CR 2.1 Definition of technical operating conditions of the measuring instrument	
		CR 2.2 Development of optimal modes operation instruments, apparatus and machines	
		CR 2.3 Technical operating conditions devices, apparatus and machines	
	LO 3. Monitoring work instruments, appliances and machines	CR 3.1 Dates of certification instruments, apparatus and machines	
		CR 3.2 Schedule of certification of instruments, appliances and machines	
		CR 3.3 Monitoring of measuring devices	
PM 2 Preliminary technical inspection of	LO 1. Conduct Visual	CR 1 Value of full-scale surveys of buildings	Designing of buildings and constructions
		CR 2 Classification methods and ways to conduct full-scale	



structures of buildings and structures	a survey of buildings and structures	surveys of buildings and structures	Building constructions Introduction to the technical inspection of buildings and constructions		
		CR 3 Possession of visual inspection methods with photographic fixation of defects in structures of buildings and structures			
	LO 2. Determine the safe operation of the structures of buildings and installations	CR1 Elements of theory and practice surveys of buildings and constructions, construction materials testing and construction of buildings and structures			
		CR 2. Identifying features of the impact on building structures			
		CR 3. Analysis of Archive source documents and materials of earlier surveys production environment and State of build constructions			
	LO 3. Predict risk the safety of constructions	CR 1. on very foundations of forecasting and rationing of constructive security indicators			
		CR 2. The application of the the theory and methods of p. rognozirovanija and rationing of constructive security indicators			
		CR 3. Establishment of a list of equipment for conducting instrumental survey of constructions			
	PM 3 An instrumental survey of structures of buildings and structures	LO 1. Schedule work on the instrumental technical survey of buildings and structures		CR 1. scope of work and the procedure for conducting technical surveys of buildings and structures for various purposes	Modern methods of diagnostics and monitoring building structures Technology of structural materials
				CR 2. technical survey of construction methods	
CR 3. development of the work plan for the technical survey structures of buildings and installations					

	LO 2. Own instrumental technical survey methods structures of buildings and installations	CR 1. mechanical technical survey method structures of buildings and installations	
		CR 2. Laboratory technical survey method structures of buildings and installations	
		CR 3. Physical method for technical survey structures of buildings and installations	
	LO 3. Conduct technical survey tool structures of buildings and installations	CR 1. Use of instrumental methods of technical inspection of structural components and systems engineering equipment of common property	
		CR 2. Application of modern diagnostic equipment for detection of hidden defects	
		CR 3. Carrying out of measurements (autopsy) constructions	
PM 4 Execution of drawings of full-scale measurements of structures of buildings and structures	LO 1. Perform sketches defective fragments and situational plans location of objects of research	CR 1. Mastering of the main patterns of perception and build a form objects and their use in painting	Drawing Computer graphics
		CR 2. Performing sketches and fragments of defective situational plan and location of objects of research	
		CR 3. Possession of technique and technology of painting, the foundations of the building space, volume, color	
	LO 2. Perform architectural drawings	CR 1. Application of technical drawing fundamentals, Fundamentals of descriptive geometry and projective drawing to perform architectural drawings	
		CR 2. Types of architectural and construction drawings and methods for their implementation	

		CR 3. performance of all types of architectural drawings at different stages of design
LO 3. Apply information technology in architectural drawings		CR 1. Information technology in professional activity
		CR 2. The application of the computer tools in developing architectural drawings
		CR 3. The use of modern computer applications
		CR 4. Possession of computer graphics, the use of 3D graphics

#### 4.1 Specification of the basic module 1

##### “Application of professional vocabulary and business documents writing in the state language”

<b>Sphere of competence</b>	-
<b>Module Name</b>	Application of professional vocabulary in the field of professional activity, preparation of business papers in the state language
<b>Module purpose</b>	After studying this module, the student will be able to apply professional vocabulary, make business papers in the state language
<b>Proficiency Level</b>	5
<b>Learning outcomes</b>	<p>LO 1. To know the grammar and terminology of Kazakh (Russian) and foreign language for communication in the sphere of one's professional activity</p> <p>LO 2. To know the technique of translation (with vocabulary) of professionally oriented texts</p> <p>LO 3. To work with organizational, administrative and informational documents with the use of computer technology.</p>
<b>Summary of content (sections, topics)</b>	<ol style="list-style-type: none"> <li>1. Knowing the lexical material in the specialty;</li> <li>2. Possession of grammatical material in the specialty;</li> <li>3. The use of terminology in the specialty;</li> <li>4. Reading professional texts;</li> <li>5. Translation (with a dictionary) of professional texts;</li> <li>6. Development of a special vocabulary of foreign language vocabulary of professional orientation</li> <li>7. Drawing up in Kazakh (Russian) and foreign languages a summary, autobiography, description, statement, complaint, power of attorney, receipt;</li> <li>8. Compliance with the requirements for the text of the document;</li> <li>9. Writing of documents on the computer that meet modern requirements and established regulations.</li> </ol>
<b>Prerequisites</b>	Knowledge of the school course of Kazakh, Russian, foreign language; Introduction to the specialty.
<b>Disciplines forming the module</b>	<ul style="list-style-type: none"> <li>- Professional Kazakh (Russian) language</li> <li>- Professional foreign language</li> <li>- Modern Russian / Kazakh language</li> <li>- Office work in the state language</li> </ul>

<b>Module type (compulsory, optional)</b>	Compulsory
<b>Workload (credits / academic hours)</b>	6 credits /180 hours
<b>The duration of the module</b>	3 semesters
<b>Form of study</b>	intramural
<b>Education technology</b>	Modular
<b>Forms of educational process organization</b>	Lecture, office hours, practical session, laboratory classes, practices.
<b>Teaching methods</b>	Oral enquiry, business games, testing, presentation, report, reference paper, message, interview, creative task, colloquium, case-task, credit
<b>Form of control</b>	Pass fail exam, exam
<b>Necessary resources</b>	<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>
<b>Language of instruction</b>	Russian, Kazakh
<b>Post requisites</b>	PM 1- PM 4

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

<b>Sphere of competence</b>	-
<b>Module Name</b>	Development and improvement of physical qualities
<b>Module purpose</b>	By the end of this module, the student will be able to develop and improve physical qualities.
<b>Proficiency Level</b>	4
<b>Learning outcomes</b>	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.
<b>Summary of content (sections, topics)</b>	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.
<b>Prerequisites</b>	Valeology Psychology Biology
<b>Disciplines forming the module</b>	Physical education
<b>Module type (compulsory, optional)</b>	Compulsory
<b>Workload (credits / academic hours)</b>	6 credits / 180 hours
<b>The duration of the module</b>	3 semesters
<b>Form of study</b>	intramural

<b>Education technology</b>	Modular
<b>Forms of educational process organization</b>	Lecture, office hours, practical session, laboratory classes, practices.
<b>Teaching methods</b>	Oral activities (conversation, lecture); visual, competitive; practical exercises.
<b>Form of control</b>	Pass fail exam, exam
<b>Necessary resources</b>	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.
<b>Language of instruction</b>	Russian, Kazakh
<b>Post requisites</b>	PM 1 – PM 4

### 4.3 Specification of the basic module 3

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

<b>Sphere of competence</b>	-
<b>Module Name</b>	Application of basic knowledge of economics in professional activities
<b>Module purpose</b>	By the end of this module, the student will be able to apply the basic knowledge of the economy in their professional activities.
<b>Proficiency Level</b>	4
<b>Learning outcomes</b>	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.
<b>Summary of content (sections, topics)</b>	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
<b>Prerequisites</b>	Basics of state and law
<b>Disciplines forming the module</b>	Fundamentals of economics
<b>Module type (compulsory, optional)</b>	Compulsory



<b>Workload (credits / academic hours)</b>	3 credits /90 hours
<b>The duration of the module</b>	1 semester
<b>Form of study</b>	intramural
<b>Education technology</b>	Modular
<b>Forms of educational process organization</b>	Lecture, office hours, practical session, laboratory classes, practices.
<b>Teaching methods</b>	Oral questioning, testing, report, abstract, creative task
<b>Form of control</b>	Pass fail exam
<b>Necessary resources</b>	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
<b>Language of instruction</b>	Russian, Kazakh
<b>Post requisites</b>	PM 1 –PM 4

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

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

<b>Workload (credits RoK / academic hours)</b>	3 credits / 90 hours
<b>The duration of the module</b>	1 semester
<b>Form of study</b>	intramural
<b>Education technology</b>	Modular
<b>Forms of educational process organization</b>	Lecture, office hours, practical session, laboratory classes, practices.
<b>Teaching methods</b>	Oral questioning, testing, report, abstract, creative task
<b>Form of control</b>	Pass fail exam, exam
<b>Necessary resources</b>	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.
<b>Language of instruction</b>	Russian, Kazakh
<b>Post requisites</b>	PM 1-PM 4

**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"**

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

<b>Prerequisites</b>	World history History of Kazakhstan
<b>Disciplines forming the module</b>	Basic philosophy Culturology Law basics Fundamentals of sociology and political science
<b>Module type (compulsory, optional)</b>	Compulsory
<b>Workload (credits / academic hours)</b>	6 credits / 180 hours
<b>The duration of the module</b>	3 semesters
<b>Form of study</b>	intramural
<b>Education technology</b>	Modular
<b>Forms of educational process organization</b>	Lecture, office hours, practical session, laboratory classes, practices.
<b>Teaching methods</b>	Oral questioning, testing, report, abstract, creative task
<b>Form of control</b>	Pass fail exam
<b>Necessary resources</b>	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. Mkrtychyan E.R. Basics of Sociology, Textbook, Volgograd, 2017 KS Birzhanov, K. B. Ibraeva. Basics of Law of the Republic of Kazakhstan, 2013
<b>Language of instruction</b>	Russian, Kazakh
<b>Post requisites</b>	PM 1 – PM 4

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

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

<b>Workload (credits / academic hours)</b>	4 credits / 120 hours
<b>The duration of the module</b>	2 semesters
<b>Form of study</b>	intramural
<b>Education technology</b>	Modular
<b>Forms of educational process organization</b>	Lecture, office hours, practical session, laboratory classes, practices.
<b>Teaching methods</b>	Oral questioning, testing, report, abstract, creative task
<b>Form of control</b>	Pass fail exam
<b>Necessary resources</b>	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.
<b>Language of instruction</b>	Russian, Kazakh
<b>Post requisites</b>	PM 1- PM 4

#### 4.7. Specification of the basic module 7

### "Applying of the laws of physics and the use of information technology in professional activities "

<b>Sphere of competence</b>	-
<b>Module Name</b>	Application of the laws of physics and the use of information technology in professional activities
<b>Module purpose</b>	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.
<b>Proficiency Level</b>	4
<b>Learning outcomes</b>	<ol style="list-style-type: none"> <li>1. To apply the basic laws of physics;</li> <li>2. To solve problems in the field of professional activity;</li> <li>3. To apply information technology in professional activities.</li> </ol>
<b>Summary of content (sections, topics)</b>	<ol style="list-style-type: none"> <li>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)</li> <li>2. Understanding the essence of the methods of working with information of physical content</li> <li>3. Understanding the basic laws of building physics</li> <li>4. Characteristics of mathematical material</li> <li>5. Generalization of mathematical material</li> <li>6. Understanding Mathematical Thinking</li> <li>7. Understanding methods of automated information processing, network technologies for processing and transmitting information</li> <li>8. Understanding interpolation: the process of collecting, transmitting, processing and updating information; programming language; programming technology; computer graphics</li> <li>9. Formation of resources and information base for solving professional tasks</li> </ol>
<b>Prerequisites</b>	Physics Computer science School Math
<b>Disciplines forming the module</b>	Physics I, II Mathematics I, II Information and communication technology



<b>Module type (compulsory, optional)</b>	Compulsory
<b>Workload (credits / academic hours)</b>	2 credits / 60 hours
<b>The duration of the module</b>	1 semester
<b>Form of study</b>	intramural
<b>Education technology</b>	Modular
<b>Forms of educational process organization</b>  <b>Teaching methods</b>	Lecture, office hours, practical session, laboratory classes, practices  Oral questioning, testing, report, reference paper, creative task
<b>Form of control</b>	Pass fail exam
<b>Necessary resources</b>	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., Tsyarkin V. Information and Communication Technologies: A Manual, 2005. - P.147
<b>Language of instruction</b>	Russian, Kazakh
<b>Post requisites</b>	PM 1 – PM 4

#### **4.8 Specification of Professional Module 1 “Determination of technical condition of instruments, apparatus and machines”**

Scope of competence	Definition of the technical condition of measuring instruments for carrying out surveys of buildings and structures
Module name	Determination of technical condition of instruments, apparatus and machines
The purpose of the module	After studying this module, the trainee will be able to on determine the technical condition of the instruments, apparatus and machines
Level of professional qualification	4
Training outcomes by module	<ol style="list-style-type: none"> <li>1 Assess efficiency instruments, apparatus and machines</li> <li>2 Determine the optimal modes of operation devices, apparatus and machines</li> <li>3 Monitoring of instruments, appliances and machines</li> </ol>
Summary of content (sections, themes)	<ol style="list-style-type: none"> <li>1. Characteristics of work instruments, appliances and machines</li> <li>2. Conduct a Visual inspection of the instruments, apparatus and machines</li> <li>3. Defining the health of devices, apparatus and machines</li> <li>4. Definition of the technical operating conditions of the measuring instrument</li> <li>5. Development of optimal modes of operation of appliances, devices and machines</li> <li>6. Compliance with the technical conditions of operation devices, apparatus and machines</li> <li>7. Dates of certification of instruments, appliances and machines</li> <li>8. Schedule certification of instruments, appliances and machines</li> <li>9. Monitoring of measuring devices</li> </ol>
Prerequisites	Physics Mathematics Informatics
Module forming disciplines	Fundamentals of electrical engineering and electronics Maintenance of instrumentation
Module type (mandatory, optional)	Mandatory

Labor intensity (credit /academic hours)	23 credits /690 hours
The duration of the module	3-8 semester
Form of teaching	Full-time
Training technologies	modular
The form of organization of educational process	Lecture, independent work, practical lessons, labs, practice
Teaching methods	The oral interrogation, testing, report, summary, creative task
Control Forms	Pass fail exam, exam
Required resources	<p>Personal computer, educational and methodical literature on the disciplines: Basics of electrical engineering and electronics, Maintenance of instrumentation.</p> <p>O.V. Milovzorov The fundamentals of electronics / O.V. Milovzorov, I.G Pankov. - 6<sup>th</sup> ed., revised and amended - M: Uwrite Publishing House, 2018. - 344 p.</p> <p>Manual for universities. - Moscow: DMK Press, 2008. - 296 p.</p> <p>N.A. Afanasyeva, L.P. Bulat. Electrical Engineering and Electronics: Tutorial. SPb .: SPbGUNIPT, 2010. - 181 p.</p> <p>S.A.Zaytsev Instrumentation and instruments: textbook / S.A. Zaitsev, A.N. Polyotove, D.D. Griбанov, R.V. Merkulov. - M: Academy, 2009. - 462 p.</p>
Language training	Russian, Kazakh
Post-requisites	Introduction to the technical inspection of buildings and constructions

#### **4.9 Specification of Professional Module 2 “Preliminary technical inspection of structures of buildings and structures”**

Scope of competence	Carrying out technical surveys of buildings and structures
Module name	Preliminary technical inspection of structures of buildings and structures
The purpose of the module	After studying this module the trainee will be able to carry out preliminary technical surveys of buildings and structures
Level of professional qualification	4
Training outcomes by module	<ol style="list-style-type: none"> <li>1 Carry out a visual inspection of buildings and structures</li> <li>2 Determine the degree of safe operation of buildings and structures</li> <li>3 Predict risk safety structures</li> </ol>
Summary of content (sections, themes)	<ol style="list-style-type: none"> <li>1. The value of the full-scale survey of buildings</li> <li>2. Classification of methods and ways to conduct full-scale surveys of buildings and structures</li> <li>3. Know the visual inspection methods with photographic fixation of defects in structures of buildings and structures</li> <li>4. Elements of the theory and practice of survey of buildings and constructions, construction materials testing and construction of buildings and structures</li> <li>5. Identify characteristics of impact on structures</li> <li>6. Analysis of archival source documents and materials of previous surveys of the production environment and the state of building structures</li> <li>7. The basis of forecasting and rationing of constructive security indicators</li> <li>8. Application of the theory and methods of forecasting and regulation of constructive security indicators</li> <li>9. Establishment of a list of equipment for conducting instrumental survey of constructions</li> </ol>
Prerequisites	<p>Physics</p> <p>Mathematics</p>
Module forming disciplines	<p>Designing of buildings and constructions</p> <p>Building constructions</p> <p>Introduction to the technical inspection of buildings and constructions</p>

Module type (mandatory, optional)	Mandatory
Labor intensity (credit /academic hours)	25 credits / 750 hours
The duration of the module	3-8 semester
Form of teaching	Full-time
Training technologies	modular
The form of organization of educational process	Lecture, independent work, practical lessons, labs, practice
Teaching methods	The oral interrogation, testing, report, summary, creative task
Control Forms	Pass fail exam, exam
Required resources	<p>Personal computer, methodical literature on the following subjects: Designing of buildings and constructions, Construction structures, Introduction to the technical inspection of buildings and constructions.</p> <p>A.N. Dobromyslov Diagnosis of damage to buildings and engineering constructions, 2006.</p> <p>A.N.Kulikov Inspection of buildings and constructions: Tutorial/A.N.Kulikov, I.Ya. Makushentseva, S.I. Bityukov, I. N. Gorin ; Volgograd State Architecture-Building University; Volga Institute of construction and technologies. (branch) VolgSACU. –Volgograd: VolgSACU, 2010. -131p.</p>
Language training	Russian, Kazakh
Post-requisites	Modern methods of survey and evaluation of the technical condition of buildings and structures

#### 4.10 Specification of Professional Module 3 “An instrumental survey of structures of buildings and structures”

Scope of competence	Carrying out technical surveys of buildings and structures
Module name	Carrying out instrumental examination of buildings and structures
The purpose of the module	After studying this module the trainee will be able to conduct instrumental examination of buildings and structures
Level of professional qualification	4
Learning outcomes	<ol style="list-style-type: none"> <li>1 Plan instrumental technical survey of buildings and structures</li> <li>2 Know instrumental methods of technical surveys of buildings and structures</li> <li>3 Conduct work on the instrumental technical survey of buildings and structures</li> </ol>
Summary of content (sections, themes)	<ol style="list-style-type: none"> <li>1. The composition of the works and the procedure for conducting technical surveys of buildings and structures for various purposes</li> <li>2. Methods of technical surveys of buildings and structures</li> <li>3. Development of the work plan for the technical survey of buildings and structures</li> <li>4. Mechanical method of technical surveys of buildings and structures</li> <li>5. Laboratory method of technical surveys of buildings and structures</li> <li>6. Physical method of technical surveys of buildings and structures</li> <li>7. The use of instrumental methods of technical inspection of structural components and systems engineering equipment of common property</li> <li>8. The use of modern diagnostic equipment for detection of hidden defects</li> <li>9. Carrying out of measurements (autopsy) constructions</li> </ol>
Prerequisites	Building constructions
Module forming disciplines	<p>Modern methods of diagnostics and monitoring building structures</p> <p>Technology of structural materials</p>
Module type (mandatory, optional)	Mandatory

Labor intensity (credit /academic hours)	18 credits /540 hours
The duration of the module	3-8 semester
Form of teaching	Full-time
Training technologies	modular
The form of organization of educational process	Lecture, independent work, practical lessons, labs, practice
Teaching methods	The oral interrogation, testing, report, summary, creative task
Control Forms	Pass fail exam, exam
Required resources	<p>Personal computer, educational-methodical literature in disciplines: Modern methods of diagnostics and monitoring of building structures, Technology of construction materials.</p> <p>V.G.Kazachel Inspection of buildings and Constructions. -M., Student Publish, 2012</p> <p>V.V.Ledenyov, V.P. Yartsev Survey and monitoring of buildings construction and structures: tutorial Tambov: Publish FGBOU VO "TSTU", 2017. -252p.</p> <p>V.I.Setkov, Ye.P. Serbii Construction structures: a tutorial. 2<sup>nd</sup> ed., amended and added -M.: INFRA-M, 2005. -448 p.</p> <p>O.S.Komarov Materials science and technology of construction materials/O.S. Komarov, V.N. Kowalewski, L.F. Kerzhentseva, G.G. Makayeva, O.V. Khrenov, B.M. Danylko and V.Ye. Chigrinov; under Gen. Ed. O.S.Komarov. 3 ed., amended and added. -Minsk: Novoye znanye, 2009. – 670p.</p> <p>I.N.Kanevsky, Ye.N. Salnikova Non-destructive methods of control (manual), Vladivostok, Far East State Technical University, 2007</p>
Language training	Russian, Kazakh
Post-requisites	The module is a basic one for special subjects and for performance of graduation qualification work

#### 4.11 Specification of Professional Module 4 “Execution of drawings of full-scale measurements of structures of buildings and structures”

Scope of competence	Execution drawings in situ structures of buildings and installations
Module name	Execution drawings in situ structures of buildings and installations
The purpose of the module	After studying this module the trainee will be able to carry out in situ drawings constructions
Level of professional qualification	4
Training outcomes by module	<ol style="list-style-type: none"> <li>1 Execute drawings of various objects of animate and inanimate nature</li> <li>2 Perform architectural drawings</li> <li>3 to apply information technology in architectural drawings</li> </ol>
Summary of content (sections, themes)	<ol style="list-style-type: none"> <li>1. Knowing of the main patterns of perception and build a form objects and their use in painting</li> <li>2. Performing sketches and fragments of defective situational plan the location of objects of research</li> <li>3. Possession of technique and technology of painting, the foundations of the building space, volume, color</li> <li>4. Application of technical drawing fundamentals, Fundamentals of descriptive geometry and projective drawing to perform architectural drawings</li> <li>5. Types of architectural drawings and methods of their implementation</li> <li>6. Perform all types of architectural drawings at different stages of design</li> <li>7. Information technology in professional activity</li> <li>8. Application of computer tools in developing architectural drawings</li> <li>9. The use of modern computer applications</li> <li>10. Application of computer graphics, use 3 (D) - graphics</li> </ol>
Prerequisites	Physics Mathematics.
Module forming disciplines	Drawing Engineering and computer graphics
Module type (mandatory, optional)	Mandatory
Labor intensity (credit /academic hours)	17 credits / 510 hours



The duration of the module	3-8 semester
Form of teaching	Full-time
Training technologies	modular
The form of organization of educational process	Lecture, independent work, practical lessons, labs, practice
Teaching methods	The oral interrogation, testing, report, summary, creative task
Control Forms	Pass fail exam, exam
Required resources	<p>Personal computer, educational-methodical literature in disciplines: drawing, engineering and computer graphics.</p> <p>V.P. Bolshakov, Engineering and computer graphics: tutorial/V.P. Bolshakov, V.T. Tozik, A.V. Chagin. — Spb.: BHV Petersburg, 2013. -288 p.</p> <p>M. Degtyarev, Engineering and computer graphics: tutorial for institutions of higher professional education/V.M. Degtyarev. -M.: IC Academy 2011. - 240 p.</p> <p>L.A. Zalogova, Computer graphics. Elective course: Practoce /L.A. Zalogova. -M.: BINOM. LZ, 2011. - 245 p.</p> <p>D.F.Mironov, Computer graphics in design: Tutorial /D.F. Mironov. -Spb.: BHV Petersburg, 2008.-560 p.</p> <p>P.Ya. Pantyuhin, Computer graphics. 2 vol. T.1. Tutorial: Computer graphics/ Tutorial / P.Ya. Pantyuhin. -M.: ID FORUM, NIC INFRA- M, 2012. -88 p.</p> <p>V.T. Tozik, Computer graphics and design: tutorial for the beginning vocational education/V.T. Tozik, L.M. Korpan. -M.: IC Academy, 2013. -208 p.</p>
Language training	Russian, Kazakh
Post-requisites	Modern methods of survey and evaluation of the technical condition of buildings and structures

## EDUCATIONAL PROCESS PLAN

**Code and the education profile:** 140000 - Construction and utilities

**Specialty:** 1401000 - Construction and maintenance of buildings and structures

**Qualification:** 1401323- Technician for technical inspection of buildings and structures

**Form of training:** Full-time

**Standard term of training:** 3 years 10 months  
on the basis of the basic secondary education

Code module	The name cycles disciplines/modules, practices	Credit	Exam	Differential pass fail exam	The amount of training time (watches)				Distribution of semester	
					TOTAL	From them:				
						Theoretical training	Practical training *	Industrial training		Individual training
<b>GED</b>	<b>General Education Discipline</b>	<b>48</b>		<b>+</b>	<b>1448</b>	<b>1448</b>				<b>1-4</b>
<b>BM</b>	<b>Basic modules</b>	<b>30</b>		<b>+</b>	<b>900</b>	<b>480</b>	<b>-</b>	<b>360</b>	<b>60</b>	<b>3-8</b>
BM 1	Application of professional vocabulary and preparation of business papers in the field 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 work collective	6		+	180	150	-	30	-	3-8
BM 6	Occupational safety and prevention of accidents	4		+	120	60	-	30	30	3-8
BM 7	Using the laws of physics and the use of information technology in professional activities	2		+	60	30		30		3-8
<b>PM</b>	<b>Professional modules on working qualifications (including industrial training and professional practice)</b>	<b>48</b>		<b>+</b>	<b>1440</b>	<b>360</b>	<b>720</b>	<b>270</b>	<b>90</b>	<b>3-8</b>
PM 1	Determination of technical condition of instruments, apparatus and machines	23	+	+	690	150	330	150	45	3-8
PM 2	Preliminary technical inspection of structures of buildings and structures	25	+	+	750	210	390	120	45	3-8
<b>PM</b>	<b>Professional Qualification Midlevel Specialist Modules</b>	<b>35</b>			<b>1050</b>	<b>330</b>	<b>420</b>	<b>210</b>	<b>90</b>	
PM 3	An instrumental survey of structures of buildings and structures	18		+	540	180	210	120	45	3-8
PM 4	Execution of drawings of full-scale measurements of structures of buildings and structures	17		+	510	150	210	90	45	3-8
	Subtotal:	<b>161</b>			<b>4838</b>	<b>2618</b>	<b>1140</b>	<b>840</b>	<b>240</b>	
UP	Undergraduate practice	<b>10</b>			<b>300</b>		<b>300</b>			<b>8</b>
GD	Graduation design	<b>9</b>			<b>270</b>	180			90	8
FC	Final certification	<b>10</b>			<b>300</b>	300				1-8
IC	Intermediate certification	<b>2</b>			<b>60</b>	60				8
	<b>Total compulsory education</b>	<b>192</b>			<b>5768</b>	<b>3158</b>	<b>1440</b>	<b>840</b>	<b>330</b>	
C	Consultation	<b>13</b>			<b>400</b>	400				1-8

O	Optional classes	14		420	420				1-8
	Total:	219		6588	3978	1440	840	330	

Note:

\* Control forms (number of coursework, examinations), study subjects (semester distribution) are approximate and may vary depending on the forms of training, the specificities of local specialties and other circumstances in accordance with the needs of employers.

\* In accordance with GCEA, TVE educational institutions can modify up to 50% of the training time for mastering training material for modules, up to 50% on each module and up to 60% (up to 80% with dual training) of training and professional practice with preserving the total hours on compulsory education.

