


«K.Kulazhanov Kazakh University of Technology and Business» JSC	EP 25/01-11-2025	
Educational program	Edition 4	

EDUCATIONAL PROGRAM

6B07525 Standardization and certification (by industry)

code and name of the educational program

Level: Bachelor's

Approved

by the Board of Directors of JSC

«K.Kulazhanov KazUTB» " 02 " 04 2025




by the Academic Council of JSC

«K.Kulazhanov KazUTB» " 28 " 03 2025


protocol No. 8

Astana–2025

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Preface


The educational program "6B07525 Standardization and certification (by industry)" was developed in accordance with the State Compulsory Standard of Higher Education / Postgraduate Education, approved by the order of the Minister of Science and Higher Education of the Republic of Kazakhstan dated July 20, 2022 No. 2, as well as on the basis of professional standards (if any):

- 1) " Metrology", approved by the order of the Deputy of the said Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated 22.10.2018 No. 283;
- 2) " Quality control of products, processes, services", approved by the order of the Deputy of the said Board of the National Chamber of Entrepreneurs of Kazakhstan "Atameken" dated 30.12.2019 No. 270;
- 3) " Assessment of conformity for food products", approved by the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated 30.05.2023 No. 100;
- 4) " Assessment in accreditation", approved by the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated 30.12.2019 No. 270;
- 5) " Standardization", approved by the order of the Deputy Chairman of the Board of the National Chamber of Entrepreneurs of the Republic of Kazakhstan "Atameken" dated 01.09.2023 No. 136.

The educational program "6B07525 Standardization and certification (by industry)" was approved at the meeting of the Council on Academic Quality on "27" "03" 2025, protocol No. 1
Chairman Baibolova L.K. 

The educational program "6B07525 Standardization and certification (by industry)" was approved at the meeting of the Commission on Academic Quality of the Faculty on "29" "11" 2024, protocol No. 2
Chairman Zhunusova G.S. 

The educational program "6B07525 Standardization and certification (by industry)" was developed and discussed at the meeting of the department "Technology and standardization" dated "21" "10" 2024, protocol No. 3
Head of the department Baitukenova S.B. 

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Approval sheet

Educational program "6B07525 Standardization and certification (by industry)"

AGREED:

Vice-Rector for
Administrative Affairs



 PP

E. Askarbekov

" 27 " 03 2025 year

Head of Educational
Programs Department


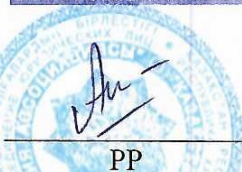


 PP

B. Bayadilova

" 27 " 03 2025 year

Chairman of the
«Association of Halal
Industry of Kazakhstan»
ALE



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M. Sarsenbayev

" 21 " 10 2024 year

Acting Director of
«Kazakh research
institute of processing
and food industry» LLP



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N. Alzhaksina

" 21 " 10 2024 year

Director
«Bio DELTA Trading
KZ» LLP



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K. Aitkenov

" 21 " 10 2024 year

Director of «Scientific
and Production Center of
Ecological and Industrial
Biotechnology» LLP



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Usenova

" 21 " 10 2024 year

Director of
«Barys «R A» LLP



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S. Khairlieva

" 21 " 10 2024 year


Student group S&S-232



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A. Ibraev

" 21 " 10 2024 year


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1 Passport of the educational program


International Standard Classification of Education (ISCED) level	6
National Qualification Framework (NQF) level	6
Sectoral Qualifications Framework (SQF) level	6
Code and name of the field of education	6B07 Engineering, manufacturing and construction industries
Direction of training	6B075 Standardization certification and metrology (by branches)
Number and name of the group of educational programs	B076 Standardization, certification and metrology (by industries)
Code and name of the educational program (EP)	6B07525 Standardization and certification (by industry)
Educational program profile	Higher engineering education
goal of the educational program	Providing high-quality practice-oriented training in the field of standardization and certification with professional and social competencies that meet the requirements of the modern economy and the labor market
completion criterion of an educational program	240 academic credits
language of instruction of the educational program	Russian, Kazakh
Distinctive features of the educational program	No
Partner University	-

2 Qualification characteristics of a graduate of an educational program


Degree awarded	Bachelor (Master) in the educational program "code and name of the educational program"
Field of professional activity	Government bodies and institutions: national bodies in the field of technical regulation and metrology, national standardization body, national accreditation center; conformity assessment bodies; testing laboratories and centers; technical committees for standardization; educational and research institutions; industrial and manufacturing enterprises: product quality control, metrological support of production, management system management.

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Types of professional activities	<p><u>Organizational and production activities:</u></p> <ul style="list-style-type: none"> - organization of development of measures for product quality management, metrological support for development, production, testing and operation of products; - systematic verification of standards, technical conditions and other documents applied at the enterprise; - implementation of control over testing of finished products and material resources received by the enterprise, implementation of modern methods and means of measurement, control over manufacturing and testing of standardized and unified products; - development (improvement) and implementation of a quality management system, enterprise standards; - assessment of the level of defects and analysis of the reasons for their occurrence, implementation of modern methods of quality management, statistical and non-destructive testing; - determination of the nomenclature of measured and controlled parameters of products and technological processes. <p><u>Design and calculation activities:</u></p> <ul style="list-style-type: none"> - development of design and technological solutions in the field of quality management, metrological support and standardization; - preparation of draft technical specifications, standards, instructions and technical descriptions; <p><u>Experimental research activities:</u></p> <ul style="list-style-type: none"> - analysis of the state and dynamics of product quality, metrological support of production, standardization and certification; - creation of theoretical models that allow studying the quality of products and technological processes, assessing the effectiveness of metrological support and standardization; - development of plans, programs and methods for testing, measuring and quality control of products.
Object of professional activity	Products (services), processes (works) and systems; equipment of enterprises and testing laboratories (centers); methods and means of measurements, testing and control; regulatory documentation of standardization systems, certification, quality management, metrology; metrological support of production, social and environmental activities.
Functions of professional activity	<p>1) PS “Metrology”</p> <p>Chief metrologist</p> <p>Mandatory job functions:</p> <ol style="list-style-type: none"> 1. Organization of metrological work 2. Management of standardization work <p>Additional work functions:</p> <ol style="list-style-type: none"> 1. Organization of work to improve the qualifications of employees in the field of ensuring the uniformity of measurements <p>Chief instrument operator</p> <p>Mandatory job functions:</p> <ol style="list-style-type: none"> 1. Metrological and technical control over the condition of measuring equipment and automation

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	<p>2. Introduction of new measuring equipment and measurement methods into production</p> <p>Additional job functions:</p> <ol style="list-style-type: none"> 1. Organization of standardization work 2) PS “Standardization”, Standardization specialist <p>Mandatory work functions:</p> <ol style="list-style-type: none"> 1. Participation in the development of standardization documents in accordance with industry specialization. 2. Participation in the work of the national and (or) interstate technical committee and (or) international technical committee on standardization in accordance with industry specialization. 3. Conducting consultations and other explanatory work on the application and content of standardization documents in accordance with industry specialization <p>Additional job functions:</p> <ol style="list-style-type: none"> 1. Preparation of articles, reports, the content of which relates to various aspects of standardization 3) PS “Quality control of products, processes, services”, Quality Specialist (products, processes, services) <p>Mandatory job functions:</p> <ol style="list-style-type: none"> 1. Carrying out auxiliary functions during inspection and other services related to inspection (in the area of activity of the inspection body: products, processes or services) 2. Carrying out individual assignments for the purposes of implementing inspection procedures <p>Additional work functions:</p> <ol style="list-style-type: none"> 1. Compliance with occupational safety and health requirements 4) PS “Assessment of conformity for food products”, Food Conformity Assessment Specialist <p>Mandatory job functions:</p> <ol style="list-style-type: none"> 1. Analysis of the state of production, including technological processes, in accordance with the approved system of technological documentation for the production of food products and raw materials. 2. Analysis of the results of measurement and quality control of raw materials, semi-finished products and finished products, production 3. Technological support for safety, traceability and quality of products at all stages of production and circulation on the market <p>Additional labor functions:</p> <ol style="list-style-type: none"> 1. Compliance with labor protection requirements 5) PS “Assessment in accreditation”, Technical expert in the field of accreditation <p>Mandatory work functions:</p> <ol style="list-style-type: none"> 1. Participation in the examination of accreditation materials 2. Participation in the survey during on-site assessment (accreditation and inspection check) <p>Additional work functions:</p> <ol style="list-style-type: none"> 1. Compliance with safety regulations
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3 Requirements for the content of the educational program

Name of cycles and disciplines	Workload in academic credits
Cycle of general education disciplines (GED)	56
Required component	51
University component	5
Cycle of basic disciplines (BD)	94
University component	33
Component of choice	54
Professional practice	7
Cycle of major disciplines (MD)	82
University component	10
Component of choice	60
Professional practice	12
Final assessment	8
Total	240


4 Additional educational programs (minor)

4.1 Minor «Modern aspects of the application of artificial intelligence»


Name of disciplines	Workload in academic credits
Introduction to Artificial Intelligence	5
Development of artificial neural networks	5
Artificial intelligence in object management	5
Total	15

5 Competency map of the educational program «6B07525 Standardization and certification (by industry)»

Competence map of the educational program	Learning outcome code	Learning Outcome (according to Bloom's Taxonomy)
Behavioral skills and personality traits (Softskills)	LO _{GED1}	Forms a system of general competencies that ensure the socio-cultural development of the personality of a future specialist based on his/her formed ideological, civic and moral position, focused on a healthy lifestyle


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	LO _{GED2}	Capable of oral and written communication in Kazakh, Russian and foreign languages to solve problems of interpersonal, intercultural and professional communication
	LO1	Develops competencies in the field of economics, law, the basics of anti-corruption culture, as well as entrepreneurship skills and financial literacy in professional activities
Digital competencies (Digital skills)	LO _{GED3}	Promotes the development of information literacy through the mastery and use of modern information and communication technologies in all areas of activity
	LO2	Apply methods of mathematical analysis and fundamental laws of natural science disciplines for deep mastery of specialized subjects, effectively integrating the acquired knowledge into scientific research and professional activities
	LO3	Conducts analysis of measurement results and quality control of products in order to substantiate their compliance with the requirements of technical regulations and standards
	LO4	Monitors the condition of measuring instruments using basic artificial intelligence algorithms, organizes metrological work aimed at improving the accuracy of measurements and the efficiency of production and economic processes
	LO5	Performs analysis of identification characteristics of marked products using modern methods of detecting signs of counterfeiting, ensuring reliability and transparency of product authenticity control
Professional skills (Hardskills)	LO6	Carries out traceability of processes using statistical methods of artificial intelligence models and qualimetric data of risk analysis with minimization of harmful impact on the environment, ensuring life safety and rational sustainable development
	LO7	Assesses the compliance of production processes with quality system requirements and HACCP principles in order to ensure product safety
	LO8	Uses integrated processes in the activities of accreditation entities and in quality management to ensure product safety and compliance with international standardization and certification requirements
	LO9	Conducts quality audits at enterprises, substantiating test results and examination of product characteristics in accordance with customs and state control requirements
	LO10	Applies practice-oriented activities in the development of documents on standardization and inspection control of certified products in order to achieve high quality


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6 Learning outcomes of the educational program and modules

Learning Outcomes (LO) for the educational program	Name of module	Key competencies	Learning Outcomes (LO) for the educational program
Key competencies (Softskills)	LO _{GED1} Forms a system of general competencies that ensure the socio-cultural development of the personality of a future specialist based on his/her formed ideological, civic and moral position, focused on a healthy lifestyle	Module 1 Man and society - the basis of ideological and socio-political knowledge	Applies the basic laws of the history of Kazakhstan, philosophy, socio-political knowledge for effective socialization and adaptation in changing socio-cultural conditions, forming a personality capable of mobility in the modern world, critical thinking and physical self-improvement
	LO _{GED2} Capable of oral and written communication in Kazakh, Russian and foreign languages to solve problems of interpersonal, intercultural and professional communication	Module 2 Information and communication module	Demonstrates an understanding of the role of physical education in maintaining health and optimal professional performance
	LO _{GED3} Promotes the development of information literacy through the mastery and use of modern information and communication		Forms a personality capable of mobility in the modern world, critical thinking and physical self-improvement
			Module of socio-political knowledge (political science, sociology, cultural studies, psychology)
			Foreign language
			Kazakh (Russian) language
			Information and communication technologies

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	technologies in all areas of activity				
Digital competencies (Digital skills)	LO 1 Develops competencies in the field of economics, law, the basics of anti-corruption culture, as well as entrepreneurship skills and financial literacy in professional activities	Module 1 Man and society - the basis of ideological and socio-political knowledge	Apply knowledge of economics and law, as well as entrepreneurship and financial literacy skills in professional activities	Module of economics, entrepreneurship, law and financial literacy (fundamentals of economics and entrepreneurship, basics of law and anti-corruption culture, basics of financial literacy)	
	LO 2 Apply methods of mathematical analysis and fundamental laws of natural science disciplines for deep mastery of specialized subjects, effectively integrating the acquired knowledge into scientific research and professional activities	Module 3 Natural Science	Demonstrates knowledge of mathematics for successful study of specialized disciplines, and applies the acquired knowledge in practice to solve educational, practical and professional problems in the studied field. Applies methods of searching for sources containing scientific, technical and patent information. Knows modern approaches to organizing research work; methods and protection of intellectual property, copyright and patent law. Able to plan his/her individual research activities; formulate the goal and objectives, object and subject, research hypothesis; process the obtained results, analyze and comprehend them taking into account the available data.	Higher mathematics Research in the field of technical regulation / Educational and research work of the student Patentology / Licensing Basics	
	LO 3 Conducts analysis of measurement results and quality control of products in order to substantiate their compliance with the requirements of technical regulations and standards	Module 4 Educational and industrial	Demonstrates knowledge in the field of standardization and certification. Applies skills of knowledge on the use of the information base of standardization, documents in the field of certification, forms the collection and interpretation of information in practice when developing standards. Demonstrates and applies knowledge of the types of food production enterprises, knowledge of the organization of work of their structural divisions in accordance with	Confirmation of Compliance / Classification and coding of food products Technical measurements Standardization Educational practice	


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<p>LO 4 Monitors the condition of measuring instruments using basic artificial intelligence algorithms, organizes metrological work aimed at improving the accuracy of measurements and the efficiency of production and economic processes</p>	<p>Module 5 Measurement and technical control</p>	<p>regulatory documents. Apply theoretical and practical knowledge obtained during training to solve educational, practical and professional problems in production and subordinate organizations</p> <p>Applies knowledge and understanding of facts, phenomena, theories and complex relationships between them in the area of study.</p> <p>Demonstrates knowledge of verification, calibration, metrological certification of measuring instruments, analysis of measurement schemes for various physical quantities, processing of measurement results and analysis of their reliability, measurement errors. Applies theoretical and practical knowledge of control and measuring equipment, carries out verification, calibration, repair and adjustment of measuring instruments.</p>	<p>General theory of measurement</p> <p>Metrology / Methods and means of measurement and control</p> <p>Metrological ensuring production</p>
<p>LO 5 Performs analysis of identification characteristics of marked products using modern methods of detecting signs of counterfeiting, ensuring reliability and transparency of</p>	<p>Module 6 Identification and Analysis</p>	<p>Demonstrates knowledge of the principles of technical regulation and aspects of metrological support, methods for assessing the quality of products and processes, as well as knowledge of the basics of artificial intelligence</p> <p>Applies effective economic planning of enterprise activities</p> <p>Demonstrates learning skills to solve educational, practical and professional problems.</p> <p>Apply knowledge of legislative requirements governing the packaging and labeling process. Be able to identify the types of packaging materials used for food safety, know the requirements for the processes of creating, using, storing, transporting and disposing of packaging. Read and evaluate information on product labels, identify labels for reliable information, and be able to formulate and compile label</p>	<p>Fundamentals of technical regulation and metrology / Quality research methods / Introduction to Artificial Intelligence</p> <p>Economics and enterprise planning</p> <p>Industrial practice 1</p> <p>Packaging and labeling of goods / Food containers</p>




product authenticity control		<p>information.</p> <p>Demonstrates to students the skills and knowledge to effectively identify counterfeit products and documents; differentiate between genuine and counterfeit products, use tools and methods to verify the authenticity of products, and methods to detect counterfeit documents</p> <p>Collects and interprets information and data to analyze risks of potentially hazardous factors (biological, chemical, physical) that arise during the production of food products. Identifies and eliminates these risks. Forms scientific judgments for the purpose of establishing critical control limits (based on HACCP principles) in food production. Develops mechanisms and methodologies for instrumental research to determine the quality of food products</p> <p>Demonstrates knowledge of the main technical and design characteristics of products, principles and methods of assessing their quality management, as well as the specifics of the database and expert systems for selecting quality indicators.</p> <p>Applies principles of sustainable development, environmental responsibility and life safety.</p> <p>Applies knowledge of the organization and control of work in the field of conformity assessment, knows the legislative framework of the Republic of Kazakhstan, as well as the forms, schemes and procedure for conformity assessment. Possesses skills in analyzing the state of production, including technological processes, analyzing the results of measurements and quality control of products, as well as managing and processing statistical data on product quality at all stages of production and its implementation</p> <p>Apply methods of implementing a management system for</p>	<p>Basics of product and document identification / Adulteration of food products</p> <p>Risk and hazardous factors analysis / Instrumental studies of food quality</p> <p>Qualimetry / Database and expert systems</p> <p>Sustainable development, ecology and life safety</p> <p>Statistical methods of product and process quality management / Data processing in quality management processes / Development of artificial neural networks</p> <p>Artificial intelligence in the management of object</p> <p>Conformity assessment /</p>
<p>LO 6</p> <p>Carries out traceability of processes using statistical methods of artificial intelligence models and qualimetric data of risk analysis with minimization of harmful impact on the environment, ensuring life safety and rational sustainable development</p>	Module 7		
LO 7			


Assesses the compliance of production processes with quality system requirements and HACCP principles in order to ensure product safety	Quality System	the relevant profiles of the organization, optimizing processes and increasing the efficiency of enterprises, and interpret production processes with the requirements of the functional standard of the management system by industry to improve the quality of products and services, reduce risks and satisfy stakeholders	Service certification / Management systems / standards / Management systems methods Quality management systems
LO 8 Uses integrated processes in the activities of accreditation entities and in quality management to ensure product safety and compliance with international standardization and certification requirements	Module 8 Quality Management	Demonstrates knowledge of the basic provisions of the laws and technical regulations of the Customs Union, regulatory documents in the field of quality and safety of food products, and is able to apply HACCP principles in food industry enterprises Knows the requirements of the legislation on accreditation of the Republic of Kazakhstan, has knowledge of the subjects, processes, criteria and procedures of accreditation. Demonstrates theoretical knowledge and basic skills in conducting documentary examination of accreditation materials; in on-site inspection during accreditation, inspection check; as an observer during control tests, research, witness assessments Formulates arguments and solves problems in the field of technical regulation at the international level, and uses learning skills to independently continue further education in the field of national and international standardization and certification. Knows the principles of creating and implementing integrated quality and safety management systems, and also studies hygienic requirements and methods for ensuring food safety at all stages of production and circulation	Food safety management system / Methods of food analysis Accreditation of conformity assessment bodies and testing laboratories / Organization of testing laboratory activities International standardization and certification / International and regional standardization Development and implementation of integrated management systems / Hygiene basics and food safety Quality control / Information technologies of standardization and

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			them, information and digital technologies in the field of professional activity.	certification
LO 9 Conducts quality audits at enterprises, substantiating test results and examination of product characteristics in accordance with customs and state control requirements	Module 9 Expertise and product safety		<p>Demonstrates learning skills to solve educational, practical and professional problems.</p> <p>Possesses skills in planning and processing the results of tests for reliability and the impact of external factors, makes decisions on the quality of products based on test results</p> <p>Masters methods of examination of food products, including meat and milk, to assess their quality, safety and compliance with regulatory requirements. Applies the main methods and techniques for assessing the quality of food products, including organoleptic, physical and chemical quality indicators (description of procedures) and working instructions (protocols), labeling, quality gradations and product range.</p> <p>Demonstrates and applies knowledge in the field of legislative framework for technical regulation. Collects and interprets information on the safety of food products, the specifics of auditing and customs control of the system of state regulation of foreign trade activities, as well as state supervision services in the field of certification and declaration of goods.</p>	<p>Industrial practice 2</p> <p>Product testing, control and safety</p> <p>Expertise of food products / Examination of meat and milk</p> <p>Customs control of food safety / State supervision in the field of standardization, certification and metrology</p> <p>Audit quality in the food industry / Quality audit of agricultural products</p>
LO 10 Applies practice-oriented activities in the development of documents on standardization and inspection control of certified products in order to achieve high quality	Module 10 Professional and technical activities		<p>Apply knowledge based on advanced achievements at a professional level to develop new and revise existing standards, specifications and other documents on standardization and certification, taking into account scientific considerations. Possesses professional knowledge to participate in the development of draft standards, methodological and regulatory materials, technical documentation and their practical implementation (methods</p>	<p>Technology for the development of standards and documents for food products / Technology for the development of standards and documents for the standardization of agricultural products</p>

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	<p>LO 11 Apply theoretical and practical knowledge, learning skills to independently solve assigned educational, practical and professional tasks at the end of the course and when continuing education at subsequent levels, as well as in professional activities</p>	<p>Module 11 Final assessment</p>	<p>of academic writing). Monitors compliance with established requirements, current norms and rules.</p> <p>Demonstrates knowledge aimed at preventing, identifying, and suppressing violations of the legislation of the Republic of Kazakhstan in the field of technical regulation in order to ensure the safety of technical regulation objects and the reliability of their compliance assessment.</p> <p>Demonstrates knowledge in the professional area of a specialist in the process of training, retraining and advanced training, training, certification and certification of personnel in the field of technical regulation: experts in conformity assessment, accreditation assessors, measuring instrument verifiers; technical experts in standardization and accreditation, and other specialists in accordance with current requirements and areas of activity in the field of technical regulation</p> <p>Demonstrates skills in organizing work at food industry and public catering enterprises in the field of technical regulation</p> <p>Understands the goals, methodology and methods of professional activity of an engineer, production manager and standardization and certification organization, and applies scientific research in this area. Apply acquired skills in preparation for continuing further education in the profile of the studied educational program</p>	<p>State control and supervision in the field of technical regulation / Control in the field of technical regulation</p> <p>Training of specialists in the field of technical regulation / Professional skills of expert auditors</p> <p>Pre-graduate practice /Industrial practice</p> <p>Final assessment</p>
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7 The relationship between the attainability of the formed learning outcomes according to the educational program and academic disciplines

№	Name of the discipline	Brief description of the discipline	Number of credits	Formed learning outcomes (codes)																
				LOGD1	LOGD2	LOGD3	LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9	LO10				
Cycle of general education disciplines University component																				
1	History of Kazakhstan	The program consists of five thematic blocks: Ancient people, the formation of nomadic civilization, Turkic civilization and the Great Steppe, Kazakhstan in a new era (XVIII - early XX centuries), Kazakhstan in the Soviet period, Independent Kazakhstan. The purpose of the discipline is to provide objective knowledge about the main stages in the development of the history of Kazakhstan from ancient times to the present.	5	+																
2	Philosophy	This program is aimed at studying the updated content of the general education discipline "Philosophy", the formation of students' openness of consciousness, understanding of their own national code and national identity, spiritual modernization, competitiveness, realism and pragmatism, independent critical thinking, the cult of knowledge and education, the assimilation of such key worldview concepts as justice, dignity and freedom, and It is also aimed at developing and strengthening the values of tolerance, intercultural dialogue and a culture of peace.	5	+																
3	Physical Culture	This curriculum shall be aimed at the study of the general education discipline "Physical culture", providing for physical training in accordance with international standards of education. The curriculum shall determine the joint cooperation of the teacher and the student in the process of physical education throughout the training in the context of the requirements to the level of mastering	8	+																




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		on the level of training, the student, at the time of completion of the course, shall reach the level B2 of common European framework of reference if the student, at the start, has the level of common European framework of reference above B1.																			
7	Kazakh (Russian) language	This curriculum for general education discipline "Kazakh language" shall be aimed at a new format of study of language and formation of social and humanitarian outlook in the framework of the national idea of spiritual modernization. This curriculum shall be intended for development of language personality of a student capable to perform cognitive and communicative activity in the Russian language in the spheres of interpersonal, social, professional and intercultural communication in the context of implementation of the state programs of trilingualism, and spiritual modernization of the national consciousness.	10	+																	
8	Module of economics, entrepreneurship, law and financial literacy (fundamentals of economics and entrepreneurship, basics of law and anti-corruption culture, basics of financial literacy)	Integrated discipline covers the fundamentals of economics, entrepreneurship, law and financial literacy. Examines key economic concepts, business principles, legal aspects of business and the basics of anti-corruption culture. Examines basic principles of financial planning, personal finance and investment management. Develops skills for effective economic decision-making, legal defense, building sustainable business competences and personal financial management	5																		
Cycle of basic disciplines University component																					
9	Higher mathematics	The discipline is aimed at studying the mathematical apparatus that allows you to model and solve mathematical problems, practical	5																		+


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		the field of technical regulation. The discipline studies the qualification requirements of expert auditors	5								
55	Development and implementation of integrated management systems	The purpose of studying the discipline is to master the algorithms for developing and applying the principles of implementing integrated management systems that combine the requirements of quality standards (ISO 9001), food safety (ISO 22000) and other standards of management systems for food industry enterprises using artificial intelligence.	5						+		
56	Food safety management system	The purpose of studying the discipline is to study the principles of HACCP and requirements for ensuring safety at all stages of production and circulation of food products. The course covers methods for implementing and maintaining management systems in accordance with the food safety management system standard. Particular attention is paid to risk analysis, critical control points (HACCP), measures to prevent product contamination and process monitoring.	5						+		
57	Statistical methods of product and process quality management	Goal: study of scientific methods of statistical control of product quality and practical application of these methods in production management and product quality; standards aimed at ensuring product safety; practical use of methods for assessing the quality of products and processes; statistical methods for managing the quality of products and processes. The discipline covers a range of issues related to the basic concepts and methods of product quality control, the state of the technological process and the organization of statistical acceptance control	5						+		
58	Customs control of food safety	The purpose of the course is to study the procedure for checking and controlling the quality and safety of food products when moving them across the customs border. The course covers legal requirements, inspection procedures and methods for detecting violations. Particular attention is paid to measures to protect consumer health and	5								+

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8 Alignment of planned learning outcomes with assessment technologies and teaching methods within the module

Learning Outcomes (LO) Number	Planned learning outcomes for the module	Assessment technologies (tools)	Methods of learning and teaching
LO GED1	<p>Applies the basic laws of the history of Kazakhstan, philosophy, socio-political knowledge for effective socialization and adaptation in changing socio-cultural conditions, forming a personality capable of mobility in the modern world, critical thinking and physical self-improvement</p> <p>Demonstrates an understanding of the role of physical education in maintaining health and optimal professional performance</p> <p>Forms a personality capable of mobility in the modern world, critical thinking and physical self-improvement</p>	<p>Educational research project, content analysis, abstract, report, creative work, essay-substantiation, analytical review, scientific research project, case analysis, testing, others.</p>	<p>Interactive lecture (problem lecture, discussion lecture, lecture-conference, lecture-consultation, lecture "Press conference", lecture "Questions-answers-discussion"). seminar and others.</p>
POOK 2	<p>Capable of interpersonal social and professional communication in Kazakh, Russian and foreign languages</p> <p>Able to classify software, use it for its intended purpose, restructure and interpret it, if necessary, and manage software products developed by oneself</p>	<p>Тренажер, кейс-задача, творческое задание, проект, тестирование и т.д.</p>	<p>Simulator, case task, creative assignment, project, testing, etc.</p>
POOK 3	<p>Has a command of various types of information and communication technologies for searching, storing, processing, protecting and distributing information</p>	<p>Business and/or role-playing game, creative task, testing, etc.</p>	<p>Communicative and activity-based approach to language acquisition, practical methods, interactive lectures, seminars, etc.</p>
LO1	<p>Apply knowledge of economics and law, as well as entrepreneurship and financial literacy skills in professional activities</p>	<p>Writing essays, analyzing texts of different genres, creative tasks demonstrating the ability to correctly express</p>	<p>Interactive lecture, seminar (seminar "Identifying the problem", seminar "Solving the problem",</p>

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LO2	<p>Demonstrates knowledge of mathematics for successful study of specialized disciplines, and applies the acquired knowledge in practice to solve educational, practical and professional problems in the studied field.</p> <p>Applies methods of searching for sources containing scientific, technical and patent information. Knows modern approaches to organizing research work; methods and protection of intellectual property, copyright and patent law. Able to plan his/her individual research activities; formulate the goal and objectives, object and subject, research hypothesis; process the obtained results, analyze and comprehend them taking into account the available data.</p>	<p>one's thoughts, tests, presentations, business games, etc.</p> <p>Colloquium, multi-level tasks and assignments, testing, etc.</p>	<p>seminar “Application of the solution to the problem”) and others.</p> <p>Case study (analysis of specific situations), project method (development and transformation of one’s own experience and competence), and others.</p>
LO3	<p>Demonstrates knowledge in the field of standardization and certification. Applies skills of knowledge on the use of the information base of standardization, documents in the field of certification, forms the collection and interpretation of information in practice when developing standards.</p> <p>Demonstrates and applies knowledge of the types of food production enterprises, knowledge of the organization of work of their structural divisions in accordance with regulatory documents. Apply theoretical and practical knowledge obtained during training to solve educational, practical and professional problems in production and subordinate organizations</p>	<p>Multi-level tasks and assignments, work with physical or virtual equipment, test, blitz survey, etc.</p>	<p>Understanding and interpreting the meanings of a text based on cognitive modeling of its content and the context of its functioning, etc.</p>
LO4	<p>Applies knowledge and understanding of facts, phenomena, theories and complex relationships between them in the area of study.</p> <p>Demonstrates knowledge of verification, calibration, metrological certification of measuring instruments, analysis of measurement schemes for various physical quantities, processing of measurement results and analysis of their reliability, measurement errors. Applies theoretical and practical knowledge of control and measuring equipment, carries out verification, calibration, repair and adjustment of measuring instruments.</p>	<p>Practical work with physical or virtual equipment, colloquium, testing and others.</p>	<p>Competency-based learning, role-playing games and educational discussions of various formats, and others.</p>




	<p>Demonstrates knowledge of the principles of technical regulation and aspects of metrological support, methods for assessing the quality of products and processes, as well as knowledge of the basics of artificial intelligence</p> <p>Applies effective economic planning of enterprise activities</p> <p>Demonstrates learning skills to solve educational, practical and professional problems.</p>		
LO5	<p>Apply knowledge of legislative requirements governing the packaging and labeling process. Be able to identify the types of packaging materials used for food safety, know the requirements for the processes of creating, using, storing, transporting and disposing of packaging. Read and evaluate information on product labels, identify labels for reliable information, and be able to formulate and compile label information.</p> <p>Demonstrates to students the skills and knowledge to effectively identify counterfeit products and documents; differentiate between genuine and counterfeit products, use tools and methods to verify the authenticity of products, and methods to detect counterfeit documents</p>	<p>Report, message, educational research project, creative work, colloquium, case analysis, analytical review, testing, other</p>	<p>Case study (analysis of specific situations), project method (development and transformation of one's own experience) and others</p>
LO6	<p>Collects and interprets information and data to analyze risks of potentially hazardous factors (biological, chemical, physical) that arise during the production of food products. Identifies and eliminates these risks. Forms scientific judgments for the purpose of establishing critical control limits (based on HACCP principles) in food production. Develops mechanisms and methodologies for instrumental research to determine the quality of food products</p> <p>Demonstrates knowledge of the main technical and design characteristics of products, principles and methods of assessing their quality management, as well as the specifics of the database and expert systems for selecting quality indicators.</p> <p>Applies principles of sustainable development, environmental responsibility and life safety.</p>	<p>Multi-level tasks and assignments, colloquium, work with physical or virtual equipment, oral survey, tests and others.</p>	<p>Interactive lecture, case study of specific situations).</p>




	<p>Applies knowledge of the organization and control of work in the field of conformity assessment, knows the legislative framework of the Republic of Kazakhstan, as well as the forms, schemes and procedure for conformity assessment. Possesses skills in analyzing the state of production, including technological processes, analyzing the results of measurements and quality control of products, as well as managing and processing statistical data on product quality at all stages of production and its implementation</p>		
LO7	<p>Apply methods of implementing a management system for the relevant profiles of the organization, optimizing processes and increasing the efficiency of enterprises, and interpret production processes with the requirements of the functional standard of the management system by industry to improve the quality of products and services, reduce risks and satisfy stakeholders</p> <p>Demonstrates knowledge of the basic provisions of the laws and technical regulations of the Customs Union, regulatory documents in the field of quality and safety of food products, and is able to apply HACCP principles in food industry enterprises</p>	Multi-level tasks and assignments, colloquium, work with physical or virtual equipment, oral survey, tests and others.	Interactive seminar, case study (analysis of specific situations). lecture, study specific
LO8	<p>Knows the requirements of the legislation on accreditation of the Republic of Kazakhstan, has knowledge of the subjects, processes, criteria and procedures of accreditation. Demonstrates theoretical knowledge and basic skills in conducting documentary examination of accreditation materials; in on-site inspection during accreditation, inspection check; as an observer during control tests, research, witness assessments</p> <p>Formulates arguments and solves problems in the field of technical regulation at the international level, and uses learning skills to independently continue further education in the field of national and international standardization and certification.</p> <p>Knows the principles of creating and implementing integrated quality and safety management systems, and also studies hygienic requirements and methods for ensuring food safety at all stages of production and circulation</p>	Multi-level tasks and assignments, colloquium, work with physical or virtual equipment, oral survey, tests and others.	Interactive seminar, case study (analysis of specific situations). lecture, study specific



	<p>Possesses sufficient skills in handling modern technology, is able to use knowledge and understanding of facts, phenomena, theories and complex relationships between them, information and digital technologies in the field of professional activity.</p> <p>Demonstrates learning skills to solve educational, practical and professional problems.</p>		
<p>LO9</p>	<p>Possesses skills in planning and processing the results of tests for reliability and the impact of external factors, makes decisions on the quality of products based on test results</p> <p>Masters methods of examination of food products, including meat and milk, to assess their quality, safety and compliance with regulatory requirements. Applies the main methods and techniques for assessing the quality of food products, including organoleptic, physical and chemical quality indicators (description of procedures) and working instructions (protocols), labeling, quality gradations and product range.</p> <p>Demonstrates and applies knowledge in the field of legislative framework for technical regulation. Collects and interprets information on the safety of food products, the specifics of auditing and customs control of the system of state regulation of foreign trade activities, as well as state supervision services in the field of certification and declaration of goods.</p>	<p>Educational research project, content analysis, abstract, report, creative work, essay-substantiation, analytical review, scientific research project, case analysis, testing, others.</p>	<p>Interactive lecture (problem discussion lecture, lecture-conference, lecture-consultation, lecture "Press conference", lecture "Questions-answers-discussion"), seminar and others.</p>
<p>LO10</p>	<p>Apply knowledge based on advanced achievements at a professional level to develop new and revise existing standards, specifications and other documents on standardization and certification, taking into account scientific considerations. Possesses professional knowledge to participate in the development of draft standards, methodological and regulatory materials, technical documentation and their practical implementation (methods of academic writing). Monitors compliance with established requirements, current norms and rules.</p> <p>Demonstrates knowledge aimed at preventing, identifying, and suppressing violations of the legislation of the Republic of Kazakhstan in the field of technical</p>	<p>Educational research project, content analysis, abstract, report, creative work, essay-substantiation, analytical review, scientific research project, case analysis, testing, others.</p>	<p>Interactive lecture (problem discussion lecture, lecture-conference, lecture-consultation, lecture "Press conference", lecture "Questions-answers-discussion"), seminar and others.</p>


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LO11	<p>regulation in order to ensure the safety of technical regulation objects and the reliability of their compliance assessment.</p> <p>Demonstrates knowledge in the professional area of a specialist in the process of training, retraining and advanced training, training, certification and certification of personnel in the field of technical regulation: experts in conformity assessment, accreditation assessors, measuring instrument verifiers; technical experts in standardization and accreditation, and other specialists in accordance with current requirements and areas of activity in the field of technical regulation</p> <p>Demonstrates skills in organizing work at food industry and public catering enterprises in the field of technical regulation</p> <p>Understands the goals, methodology and methods of professional activity of an engineer, production manager and standardization and certification organization, and applies scientific research in this area. Apply acquired skills in preparation for continuing further education in the profile of the studied educational program</p>	Working with physical or virtual equipment, report.	Practical training, seminar.
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9 Correlation of learning outcomes of the educational program with the labor functions of professional standards (if any)


Name of the professional standards used	Professions at level 6 and/or 7 of the SQF	Labor functions	Tasks	Learning outcomes for the educational program
Metrology 22.10.2018 № 283	Chief metrologist	<p>Organization of metrological works</p> <p>Management of standardization work</p> <p>Monitoring and evaluation of the quality of implementation of personnel training programs in the field of technical regulation</p>	<p>Task 1: Organization of work to ensure measurement accuracy and compliance with legislation</p> <p>Task 2: Improvement of metrological support, measurement tools and methods, control and testing</p> <p>Task 3: Organization of work to maintain measuring tools and equipment in working order, introduction of new measuring instruments</p> <p>Task 1: Development and metrological examination of technical and design documentation</p> <p>Task 2: Development and metrological examination of regulatory documentation</p> <p>Task: Analysis of the training organization's needs</p>	LO3 Conducts analysis of measurement results and quality control of products in order to substantiate their compliance with the requirements of technical regulations and standards
Chief instrument operator	<p>1: Metrological and technical control over the condition of measuring equipment and automation</p> <p>2: Introduction of new measuring equipment and measurement methods into production</p>	<p>Task 1: Metrological control</p> <p>Task 2: Technical control</p> <p>Task 1: Development of plans for technical re-equipment of production</p> <p>Task 2: Organization of work on commissioning of measuring equipment</p>	<p>Task 1: Metrological control</p> <p>Task 2: Technical control</p> <p>Task 1: Development of plans for technical re-equipment of production</p> <p>Task 2: Organization of work on commissioning of measuring equipment</p>	LO4 Monitors the condition of measuring instruments using basic artificial intelligence algorithms, organizes metrological work aimed at improving the accuracy of measurements and the efficiency of production and economic processes

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Standardization 01.09.2023г. № 136	Standardization specialist	Participation in the development of standardization documents according to industry specialization	<p>Задача 1: Разработка национального плана стандартизации и работы по межгосударственной стандартизации</p> <p>Задача 2: Разработка документов по стандартизации</p> <p>Задача 3: Внесение на утверждение документа по стандартизации</p>	LO10 Applies practice-oriented activities in the development of documents on standardization and inspection control of certified products in order to achieve high quality
		Participation in the work of the national and (or) interstate technical committee and (or) international technical committee for standardization according to industry specialization	<p>Task 1: Carry out work within the framework of the national and (or) interstate technical committee for standardization and (or) international technical committee for standardization</p> <p>Task 2: Participation in monitoring in the field of standardization for assigned standardization objects</p>	LO8 Uses integrated processes in the activities of accreditation entities and in quality management to ensure product safety and compliance with international standardization and certification requirements
		Conducting consultations and other explanatory work on the application and content of standardization documents in accordance with industry specialization	Task 1: Consulting and explanatory work on standardization issues	LO6 Carries out traceability of processes using statistical methods of artificial intelligence models and qualitative data of risk analysis with minimization of harmful impact on the environment, ensuring life safety and rational sustainable development
		Preparation of articles and reports, the content of which relates to various aspects of standardization	Task: Preparation of publications on standardization issues	
Assessment of conformity for food products 30.05.2023г. №100	Food Conformity Assessment Specialist	Analysis of the state of production, including technological processes, in accordance with the approved system of technological	<p>Task 1: Analysis of technological production processes in accordance with the approved system of technological documentation in production</p> <p>Task 2: Analysis of the completeness of</p>	LO7 Assesses the compliance of production processes with quality system requirements and HACCP principles in order to ensure product safety



<p>Assessment in accreditation 30.12.2019г. № 270</p>	<p>Technical expert in the field of accreditation</p>	<p>documentation for the production of food products and raw materials</p> <p>Analysis of the results of measurement and quality control of raw materials, semi-finished and finished products, production</p> <p>Technological support for safety, traceability and quality of products at all stages of production and circulation on the market</p> <p>Compliance with labor protection requirements.</p>	<p>the implementation of the procedure based on the principles of HACCP</p> <p>Task 1: Definition of control methods and procedures Task 2: Analysis of laboratory research and testing</p> <p>Task 1: Analysis of technological processes for acceptance of raw materials, laboratory studies of safety and quality of semi-finished and finished production, assessment of products during production Task 2: Analysis of storage and transportation conditions of food products, product identification.</p> <p>Task: Organization of safe work performance</p> <p>Task 1: Participation in conducting a documentary examination of accreditation materials based on the applicant's application for a specific standard in a specific area of activity</p>	<p>LO3 Conducts analysis of measurement results and quality control of products in order to substantiate their compliance with the requirements of technical regulations and standards LO5 Performs analysis of identification characteristics of marked products using modern methods of detecting signs of counterfeiting, ensuring reliability and transparency of product authenticity control</p> <p>LO8 Uses integrated processes in the activities of accreditation entities and in quality management to ensure product safety and compliance with international standardization and certification requirements</p>
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Quality control of products, processes, services 30.12.2019г. № 270	Quality Specialist (products, processes, services)	<p>Participation in on-site inspection during accreditation, inspection check</p> <p>Compliance with safety regulations</p> <p>Carrying out auxiliary functions during inspection and other services related to inspection (according to the area of activity of the inspection body: products, processes or services)</p> <p>Carrying out individual assignments for the purposes of implementing inspection procedures</p> <p>Compliance with labor protection requirements</p>	<p>Task 1: Participation in the assessment under the guidance of the assessor</p> <p>Task 2: Participation as an observer in the conduct of control tests, studies, witness assessments</p> <p>Task 1: Organization of safe work performance</p> <p>Task 1: Conducting inspection-related tests and studies (in the area of activity of the inspection body: products, processes or services)</p> <p>Task 2: Laboratory and technical support for inspection procedures</p> <p>Task 1: Carrying out individual assignments for the purpose of implementing inspection procedures</p> <p>Task 1: Carrying out work in accordance with safety regulations</p>	<p>LO9 Conducts quality audits at enterprises, substantiating test results and examination of product characteristics in accordance with customs and state control requirements</p> <p>LO5 Performs analysis of identification characteristics of marked products using modern methods of detecting signs of counterfeiting, ensuring reliability and transparency of product authenticity control</p> <p>LO9 Conducts quality audits at enterprises, substantiating test results and examination of product characteristics in accordance with customs and state control requirements</p>
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10 Graduate model

GRADUATE MODEL		
Competencies (soft skills, digital skills)		
Attributes of a graduate	knowledge	Skills
<p>High professionalism in the field of standardization and certification; analytical thinking; ability to manage a team, leadership skills; ability to set priorities; efficiency, ability to make quick decisions; effective problem solving; responsibility</p>	<p>General professional knowledge and knowledge in the field of standardization, certification and metrology: knowledge of the main Laws "On technical regulation", "On accreditation in the field of conformity assessment", "On ensuring the uniformity of measurements", "On standardization" and other legislative documents in the field of activity of the applicant; national and international regulatory legal acts, methodological documentation regulating the quality and safety of products, processes and services; methodology for the development, approval and application of standards; procedures for certification of products, services, processes, personnel and management systems; types of measurement, methods and means of measurement; have knowledge of accreditation procedures and accreditation schemes, relevant guidelines and documents for use in the field of conformity assessment; principles of operation of testing and control and measuring equipment used in carrying out technical work and research to control the quality and safety of products, processes and services.</p>	<p>Apply regulatory documents in the development, implementation and analysis of standards; conduct preparation and support of procedures for mandatory and voluntary certification of products, services, processes, personnel and management systems; perform measurements using various types of measuring instruments and equipment; carry out verification and calibration of measuring instruments; apply methods of statistical control and analysis of the quality of products and processes; plan, organize and control the processes of standardization, certification and metrological support; be able to apply specialized knowledge when conducting the assessment procedure, according to the scope of accreditation; assess the level of product defects, violations in a process or service and compare the obtained result with the requirements of regulatory documentation; process and analyze the results of tests and quality and safety studies (of products, processes, services)</p>
<p>Professional standard (Metrology, Standardization, Confirmation of conformity of food products, Assessment in the field of accreditation, Quality control of products, processes, services)</p>		
<p>Professional skills (hard skills)</p>		
<p>Conducts analysis of measurement results and quality control of products in order to substantiate their compliance with the requirements of technical regulations and standards Monitors the condition of measuring instruments using basic artificial intelligence algorithms, organizes metrological work aimed at improving the accuracy of measurements and the efficiency of production and economic processes Applies practice-oriented activities in the development of documents on standardization and inspection control of certified products in order to achieve high quality</p>		

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	<p>Uses integrated processes in the activities of accreditation entities and in quality management to ensure product safety and compliance with international standardization and certification requirements</p> <p>Carries out traceability of processes using statistical methods of artificial intelligence models and qualimetric data of risk analysis with minimization of harmful impact on the environment, ensuring life safety and rational sustainable development</p> <p>Assesses the compliance of production processes with quality system requirements and HACCP principles in order to ensure product safety</p> <p>Performs analysis of identification characteristics of marked products using modern methods of detecting signs of counterfeiting, ensuring reliability and transparency of product authenticity control</p> <p>Conducts quality audits at enterprises, substantiating test results and examination of product characteristics in accordance with customs and state control requirements</p>
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Типтік оқу жоспары / Типичный учебный план / Turical curriculum
БББ 6B07525 Стандарттау және сертификаттау (сәйкестендірілген) / ОП 6B07525 Стандартизация и сертификация (по отраслям) / EP 6B07525 Standardization and certification (by industry)

1	2	3	4	5	6	7	8	9				10	11	12	13	14	15	16				17	18	19	20	21	22	23	24									
								1 КУРС		2 КУРС								3 КУРС		4 КУРС										1 КУРС		2 КУРС		3 КУРС		4 КУРС		
Module / Module №	Модуль / Module №	Тіл / Language №	Оқу пәнінің атауы / Name of teaching disciplines	Оқу пәнінің кодтары / Educational disciplines code	Семестр / semester	Кредиттер саны / Number of credits	Курс жұмысы (жоба) / Course work (project)	Барлық сағат / Всего часов / Total hours	Сағаттар саны / Всего часов / Total hours	Аудиториялық жұмыс / Д/Л/ЛС / TIC / CTP / SPI	Оқу жұмысының саны / Саны / TIC / CTP / SPI	Оқу жұмысының саны / Саны / TIC / CTP / SPI	Барлық сағат / Всего часов / Total hours	Сағаттар саны / Всего часов / Total hours	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ақпараттық-коммуникациялық / Информационно-коммуникационный / Information and Communication																																						
1	Шетел тілі / Иностраный язык	ЖБП (МК) / ООД (ОК) / ГЕД (СС)	Қазақ тілі / Казахский (Русский) язык / Kazakh (Russian) language	Қазақ тілі / Казахский (Русский) язык / Kazakh (Russian) language	1	5	150	45	45	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90
2	Қазақ тілі / Казахский (Русский) язык / Kazakh (Russian) language	ЖБП (МК) / ООД (ОК) / ГЕД (СС)	Қазақ тілі / Казахский (Русский) язык / Kazakh (Russian) language	Қазақ тілі / Казахский (Русский) язык / Kazakh (Russian) language	1	5	150	45	45	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90
3	Шетел тілі / Иностраный язык	ЖБП (МК) / ООД (ОК) / ГЕД (СС)	Қазақ тілі / Казахский (Русский) язык / Kazakh (Russian) language	Қазақ тілі / Казахский (Русский) язык / Kazakh (Russian) language	2	5	150	45	45	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90
4	Ақпараттық-коммуникациялық технологиялар / Информационно-коммуникационные технологии / Information and communication technologies	ЖБП (МК) / ООД (ОК) / ГЕД (СС)	Ақпараттық-коммуникациялық технологиялар / Информационно-коммуникационные технологии / Information and communication technologies	Ақпараттық-коммуникациялық технологиялар / Информационно-коммуникационные технологии / Information and communication technologies	2	5	150	45	45	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90
5	Қазақ (Орыс) тілі / Казахский (Русский) язык / Kazakh (Russian) language	ЖБП (МК) / ООД (ОК) / ГЕД (СС)	Қазақ (Орыс) тілі / Казахский (Русский) язык / Kazakh (Russian) language	Қазақ (Орыс) тілі / Казахский (Русский) язык / Kazakh (Russian) language	2	5	150	45	45	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90	0 + 3 + 0	15	90
Бардығы модуль бойынша / Итого по модулю / Total for module																																						
Адам және қоғам – дүниетанымын және қоғамдық-саяси білімім негізі / Человек и общество – основа мировоззренческих и социально-политических знаний / Man and Society – the foundation of worldview and socio-political knowledge																																						
1	Қазақстан тарихы / История Казахстана / History of Kazakhstan	ЖБП (МК) / ООД (ОК) / ГЕД (СС)	Қазақстан тарихы / История Казахстана / History of Kazakhstan	Қазақстан тарихы / История Казахстана / History of Kazakhstan	1	5	150	45	45	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90
2	Дене шынықтыру / Физическая культура / Physical Culture	ЖБП (МК) / ООД (ОК) / ГЕД (СС)	Дене шынықтыру / Физическая культура / Physical Culture	Дене шынықтыру / Физическая культура / Physical Culture	1	2	60	30	30	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30
3	Экономика, кәсіпкерлік, құқық және қаржылық сауаттылық модулі (экономика және кәсіпкерліктің негіздері, құқық негіздері және сыйбалас жемқорлыққа қарсы мәдениет, қаржылық сауаттылық негіздері) / Модуль экономики, предпринимательства, права и финансовой грамотности (основы экономики и предпринимательства, основы права и антикоррупционная культура, основы финансовой грамотности) / Module of economics, entrepreneurship, law and financial literacy (fundamentals of economics and entrepreneurship, basics of law and anti-corruption culture, basics of financial literacy)	ЖБП (ЖК) / ООД (БК) / ГЕД (СС)	Экономика, кәсіпкерлік, құқық және қаржылық сауаттылық модулі (экономика және кәсіпкерліктің негіздері, құқық негіздері және сыйбалас жемқорлыққа қарсы мәдениет, қаржылық сауаттылық негіздері) / Модуль экономики, предпринимательства, права и финансовой грамотности (основы экономики и предпринимательства, основы права и антикоррупционная культура, основы финансовой грамотности) / Module of economics, entrepreneurship, law and financial literacy (fundamentals of economics and entrepreneurship, basics of law and anti-corruption culture, basics of financial literacy)	Экономика, кәсіпкерлік, құқық және қаржылық сауаттылық модулі (экономика және кәсіпкерліктің негіздері, құқық негіздері және сыйбалас жемқорлыққа қарсы мәдениет, қаржылық сауаттылық негіздері) / Модуль экономики, предпринимательства, права и финансовой грамотности (основы экономики и предпринимательства, основы права и антикоррупционная культура, основы финансовой грамотности) / Module of economics, entrepreneurship, law and financial literacy (fundamentals of economics and entrepreneurship, basics of law and anti-corruption culture, basics of financial literacy)	2	5	150	45	45	30	15	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90	2 + 1 + 0	15	90
4	Дене шынықтыру / Физическая культура / Physical Culture	ЖБП (МК) / ООД (ОК) / ГЕД (СС)	Дене шынықтыру / Физическая культура / Physical Culture	Дене шынықтыру / Физическая культура / Physical Culture	2	2	60	30	30	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30	0 + 2 + 0	30	30

Барлығы модуль бойынша / Total for module		Оқу - өндірістік / Учебно - производственный / Training and production																			
		31	930	375	150	225	0	60	495												
5	Әлеуметтік-саясаттану білім модулі (әлеуметтану, саясаттану, мәдениеттану, психология) Модуль социально-политических знаний (политология, социология, культурология, психология) Module of socio-political knowledge (political science, sociology, cultural studies, psychology)	ЖБП (ЛМК) ООД (ОК) GED (CC)	MSPZ 2103-25 MSPZ 2103-25 MSPZ 2103-25	3	8	240	120	60	60	15	105	4 + 4 - 0									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
6	Дене шынықтыру Физическая культура Physical Culture	ЖБП (ЛМК) ООД (ОК) GED (CC)	FK 1106-25 (3) FK 1106-25 (3) FK 1106-25 (3)	3	2	60	30	30	30	30	0 + 2 - 0										Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
7	Философия Философия Philosophy	ЖБП (ЛМК) ООД (ОК) GED (CC)	FI 2102-25 FI 2102-25 FI 2102-25	4	5	150	45	30	15	90	2 - 1 - 0										Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
8	Дене шынықтыру Физическая культура Physical Culture	ЖБП (ЛМК) ООД (ОК) GED (CC)	FK 1106-25 (4) FK 1106-25 (4) FK 1106-25 (4)	4	2	60	30	30	30	30	0 - 2 + 0										Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option

Барлығы модуль бойынша / Total for module		Оқу және техникалық бақылау / Измерение и технический контроль / Measuring and technical control																			
		21	630	195	90	105	0	60	315												
1	Техникалық өлшемдер Технические измерения Technical measurements	БП (ЖК) БД (БК) ВД (LC)	TI 1202-25 TI 1202-25 TI 1202-25	1	4	120	45	15	30	15	60	1 - 2 + 0									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
2	Жоғары математика Высшая математика Higher mathematics	БП (ЖК) БД (БК) ВД (LC)	Vmat 1201-25 Vmat 1201-25 Vmat 1201-25	1	5	150	45	15	30	15	90	1 - 2 + 0									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
3	Классификация и кодирование пищевых продуктов Classification and coding of food products	БП (ТК) БД (КВ) ВД (ЕС)	KKPP 1201-25 KKPP 1201-25 KKPP 1201-25	1	4	120	45	30	15	15	60	2 - 1 + 0									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
4	Сәйкестікті растау Подтверждение соответствия Confirmation of Compliance	БП (ЖК) БД (БК) ВД (LC)	PS 1201-25 PS 1201-25 PS 1201-25	2	6	180	60	30	30	15	105	2 + 2 - 0									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
5	Стандартизация Standardization	БП (ЖК) БД (БК) ВД (LC)	St 1203-25 St 1203-25 St 1203-25	2	6	180	60	30	30	15	105	2 + 2 - 0									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
6	Оқу практикасы Учебная практика Educational practice	БП (ЖК) БД (БК) ВД (LC)	UP 25 (SIS) UP 25 (SIS) UP 25 (SIS)	2	2	60	0	0	0	0	0	2 апта неделя weeks									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option

Барлығы модуль бойынша / Total for module		Оқу және техникалық бақылау / Измерение и технический контроль / Measuring and technical control																			
		21	630	195	90	105	0	60	315												
1	Жалпы өлшеу теориясы Общая теория измерений General theory of measurement	БП (ЖК) БД (БК) ВД (LC)	OTI 2204-25 OTI 2204-25 OTI 2204-25	3	5	150	45	15	30	15	90	1 + 2 - 0									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
2	Өндірістік практика I Производственная практика I Industrial practice I	БП (ЖК) БД (БК) ВД (LC)	PP 1-25 (SIS) PP 1-25 (SIS) PP 1-25 (SIS)	4	5	150	0	0	0	0	0	5 апта / неделя weeks									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
3	Өлшеу және бақылаудың әдістері мен құралдары Методы и средства измерений и контроля Methods and means of measurement and control	БП (ТК) БД (КВ) ВД (ЕС)	MISK 2206-25 MISK 2206-25 MISK 2206-25	4	5	150	45	30	15	15	90	2 - 1 + 0									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
4	Метрология Метрология Metrology	БП (ТК) БД (КВ) ВД (ЕС)	Mt 3209-25 Mt 3209-25 Mt 3209-25	4	5	150	45	30	15	15	90	2 - 1 + 0									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
5	Сапаның зерттеу әдістері Методы исследования качества Quality research methods	БП (ТК) БД (КВ) ВД (ЕС)	MtK 2207-25 MtK 2207-25 MtK 2207-25	4	5	150	45	30	15	15	90	2 - 1 + 0									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
6	Метрология және техникалық реттеу негіздері Основы технического регулирования и метрологии Fundamentals of technical regulation and metrology	БП (ТК) БД (КВ) ВД (ЕС)	OTRM 2207-25 OTRM 2207-25 OTRM 2207-25	4	5	150	45	30	15	15	90	2 + 1 - 0									Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option
-	ЖАҚАНЫҢ ИНТЕЛЛЕКТІК КІРІСПЕ Введение в Искусственный интеллект Introduction to Artificial Intelligence		AI 2207-25 AI 2207-25																		Еліміздің тарихы бойынша По выбору обучающегося Ис. student - option

Модуль / Module № 3

Модуль / Module № 4

Барнагы модуль бойынша / Total for module	Өндүрүш мөтросологиялык камтамалыкты етүү. Метросологиялык камтамалыкты өнүктүрүү. Metrological ensuring production	БП (ЖК) ИД (БК) PD (IC)	МОР 3301-25 МОР 3301-25 МОР 3301-25	6	5	150	45	30	15	15	90	360	2 - 1 + 0	Балдардын жалпы саны / Total for module

Жаратылыстану - ғылым / Естественно - научный / Natural Science

Барнагы модуль бойынша / Total for module		Жаратылыстану - ғылым / Естественно - научный / Natural Science													
Модуль / Module № 5	1	Техникалык реттеу саясатындагы зерттеулер Исследования в сфере технического регулирования Research in the field of technical regulation	БП (ТК) БД (КВ) ВД (ЕС)	ISTR 2202-25 ISTR 2206-25 ISTR 2202-25	3	5	150	45	15	30	15	90	360	1 + 2 + 0	Балдардын жалпы саны / Total for module
	3	Патентация Патентование Patentology	БП (ТК) БД (КВ) ВД (ЕС)	Pat 2203-25 Pat 2203-25 Pat 2203-25	3	5	150	45	15	30	15	90	360	1 + 2 + 0	Балдардын жалпы саны / Total for module
4	Лицензиялуу негиздери Основы лицензирования Licensing Basics	БП (ТК) БД (КВ) ВД (ЕС)	OL 2203-25 OL 2203-25	3	5	150	45	15	30	15	90	360	1 + 2 + 0	Балдардын жалпы саны / Total for module	
															Лицензиялуу негиздери Основы лицензирования Licensing Basics

Барнагы модуль бойынша / Total for module

Барнагы модуль бойынша / Total for module		Талдау және бағалау / Анализ и оценка / Analysis and evaluation													
Модуль / Module № 6	1	Тау аралдары бунит-түтө және табиғату Упаковки и маркировка товара Packaging and labeling of goods	БП (ТК) БД (КВ) ВД (ЕС)	UMT 2204-25 UMT 2204-25 UMT 2204-25	3	5	150	45	15	30	15	90	360	1 + 2 + 0	Балдардын жалпы саны / Total for module
	3	Азык-түлік өнімдерин бурмалау Фальсификация пищевых продуктов Adulteration of food products	БП (ТК) БД (КВ) ВД (ЕС)	FPP 2205-25 FPP 2205-25 FPP 2205-25	4	5	150	45	15	30	15	90	360	1 - 2 + 0	Балдардын жалпы саны / Total for module
	5	Квалитметрия Квалитметрия Qualitymetry	БП (ТК) БД (КВ) ВД (ЕС)	Kva 3208-25 Kva 3208-25 Kva 3208-25	5	5	150	45	15	30	15	90	360	1 + 2 + 0	Балдардын жалпы саны / Total for module
	7	Тамак өнімдеринин сапалык аспаптык зерттеу Инструментальные исследования качества пищевых продуктов Instrumental studies of food quality	БП (ТК) БД (КВ) ВД (ЕС)	IKPP 3210-25 IKPP 3210-25 IKPP 3210-25	5	5	150	45	15	30	15	90	360	1 + 2 + 0	Балдардын жалпы саны / Total for module
	9	Турасты ламу, экология және туршик күрөшөттү Устойчивое развитие, экология и безопасность жизнедеятельности Sustainable development, ecology, and life safety	БП (ЖК) БД (БК) ВД (УС)	UREBZh 3207-25 UREBZh 3207-25 UREBZh 3207-25	6	5	150	45	15	30	15	90	360	1 + 2 + 0	Балдардын жалпы саны / Total for module
11	Калитметтерди сертификацту Сертификация услуг Service certifica ton	БП (ТК) БД (КВ) ВД (ЕС)	SI 3211-25 SI 3211-25 SI 3211-25	6	5	150	45	15	30	15	90	360	1 - 2 + 0	Балдардын жалпы саны / Total for module	
															Объекттерди бақылау жана жаңалды интеллект Пассивный интеллект в управлении объектами Artificial intelligence in the management of object

13	Жаңылы нейрондық желілерді әзірлеу Разработка искусственных нейронных сетей Development of artificial neural networks	БейП (ТК) ПД (КВ) PD (LC)	RINS 3303-25 RINS 3303-25 RINS 3303-25	SVU KPP 3303-25 SMU KPP 3303-25 SVU KPP 3303-25	ODPUK 3303-25 ODPUK 3303-25 ODPUK 3303-25	150	45	15	30	15	90	1 + 2 = 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
14	Әлеуметтік желілерді әзірлеу Статистикалық әдістерді Статистические методы управления качеством производства и процессов Statistical methods of product and process quality management	БейП (ТК) ПД (КВ) PD (LC)	SVU KPP 3303-25 SMU KPP 3303-25 SVU KPP 3303-25	ODPUK 3303-25 ODPUK 3303-25 ODPUK 3303-25	150	45	15	30	15	90	1 + 2 = 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option	
15	Сапаны басқару процесстерінде деректерді өңдеу Обработка данных в процессах по управлению качеством Data processing in quality management processes	БейП (ТК) ПД (КВ) PD (LC)	SVU KPP 3303-25 SMU KPP 3303-25 SVU KPP 3303-25	ODPUK 3303-25 ODPUK 3303-25 ODPUK 3303-25	150	45	15	30	15	90	1 + 2 = 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option	
Барлығы модуль бойынша / Итого по модулю / Total for module			35	1050	315	105	210	0	105	630			

Экономика және тұрақты даму / Экономика и устойчивое развитие / Economy and Sustainable Development

1	Кәсіпорндағы экономика және жоспарлау Экономика и планирование на предприятии Economics and enterprise planning	БейП (ЖК) БД (БК) BD (LC)	ЕРР 2205-25 ЕРР 2205-25 ЕРР 2205-25	90	30	15	15	15	15	45	1 + 1 = 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
Барлығы модуль бойынша / Итого по модулю / Total for module			3	90	30	15	15	0	15	45		

Сапа жүйесі / Система качества / Quality system

1	Менеджмент жүйесінің әдістері Методы систем менеджмента Management systems methods	БейП (ТК) БД (КВ) BD (EC)	MSM 3209-25 MSM 3209-25 MSM 3209-25	SSM 3209-25 SSM 3209-25 SSM 3209-25	150	45	30	15	15	90	2 + 1 = 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
2	Менеджмент жүйесінің стандарттары Стандарты систем менеджмента Management systems standards	БейП (ТК) БД (КВ) BD (EC)	MSM 3209-25 MSM 3209-25 MSM 3209-25	SSM 3209-25 SSM 3209-25 SSM 3209-25	150	45	30	15	15	90	2 + 1 = 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
3	Сапа менеджмент жүйесі Системы менеджмента качества Quality management systems	БейП (ЖК) БД (БК) BD (LC)	SMK 3206-25 SMK 3206-25 SMK 3206-25	SMK 3206-25 SMK 3206-25 SMK 3206-25	150	45	30	15	15	90	2 - 1 + 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
4	Тамақ өнімдерін талдау әдістері Методы анализа пищевых продуктов Methods of food analysis	БейП (ТК) ПД (КВ) PD (EC)	MAPP 3304-25 MAPP 3304-25 MAPP 3304-25	SNBPP 3304-25 SNBPP 3304-25 SNBPP 3304-25	150	45	30	15	15	90	2 - 1 + 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
5	Азық-түлік қауіпсіздігі менеджмент жүйесі Система менеджмента безопасности пищевой продукции Food safety management system	БейП (ТК) ПД (КВ) PD (EC)	MAPP 3304-25 MAPP 3304-25 MAPP 3304-25	SNBPP 3304-25 SNBPP 3304-25 SNBPP 3304-25	150	45	30	15	15	90	2 - 1 + 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
Барлығы модуль бойынша / Итого по модулю / Total for module			15	450	135	90	45	0	45	270		

Сапаны басқару / Управление качеством / Quality management

1	Халықаралық стандарттау және сертификация Международная стандартизация и сертификация International standardization and certification	БейП (ТК) ПД (КВ) PD (EC)	MSS 3301-25 MSS 3301-25 MSS 3301-25	MRS 3301-25 MRS 3301-25 MRS 3301-25	150	45	30	15	15	90	2 + 1 = 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
2	Халықаралық және өнірлік стандарттау Международная и региональная стандартизация International and regional standardization	БейП (ТК) ПД (КВ) PD (EC)	MSS 3301-25 MSS 3301-25 MSS 3301-25	MRS 3301-25 MRS 3301-25 MRS 3301-25	150	45	30	15	15	90	2 + 1 = 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
3	Сәйкестікті растау, жеңілдеті ортаңдарды және сынақ зертхана парын акредиттеу Акредитация органов по подтверждению соответствия и испытательных лабораторий Accreditation of conformity assessment bodies and testing laboratories	БейП (ТК) ПД (КВ) PD (EC)	AOPSIL 3302-25 AOPSIL 3302-25 AOPSIL 3302-25	ODIL 3302-25 ODIL 3302-25 ODIL 3302-25	150	45	30	15	15	90	1 + 2 = 0	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
4	Сынақ зертханалық қызметті ұйымдастыру Организация деятельности испытательных лабораторий Organization of testing laboratory activities	БейП (ЖК) ПД (БК) PD (LC)	ODIL 3302-25 ODIL 3302-25 ODIL 3302-25	PP 2-25 (SIS) PP 2-25 (SIS) PP 2-25 (SIS)	150	0	0	0	0	0	5 апта недель weeks	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
5	Өндірістік практика 2 Промышленная практика 2 Industrial practice 2	БейП (ЖК) ПД (БК) PD (LC)	PP 2-25 (SIS) PP 2-25 (SIS) PP 2-25 (SIS)	PP 2-25 (SIS) PP 2-25 (SIS) PP 2-25 (SIS)	150	0	0	0	0	0	5 апта недель weeks	Бизнес-планмен бірге сөзінше Поискать в учебнике В student's option
Барлығы модуль бойынша / Итого по модулю / Total for module			5	150	45	30	15	0	15	90		

Модуль / Module №	Аудып шарашылыгы өнімдері стандарттар, жөндеті стандарттар мен құжаттарды әзірлеу технологиясы Technology for the development of standards and documents for the standardization of agricultural products	Бей (ТК) ПД (КВ) PD (EC)	TRSDSSP 4306-25 TRSDSSP 4306-25 TRSDSSP 4306-25	7	5	150	45	15	30	15	90	1 - 2 + 0	Балалардың оқуы бойынша По учебным занятиям By student's effort	
2	Аудып шарашылыгы өнімдері стандарттар, жөндеті стандарттар мен құжаттарды әзірлеу технологиясы Technology for the development of standards and documents for the standardization of agricultural products	Бей (ТК) ПД (КВ) PD (EC)	TRSDSSP 4306-25 TRSDSSP 4306-25 TRSDSSP 4306-25	7	5	150	45	15	30	15	90	1 - 2 + 0	Балалардың оқуы бойынша По учебным занятиям By student's effort	
3	Диплом алдындағы практика Практика Продвинутое производство Практика Pre-graduate practice / Industrial practice	Бей (ЖК) ПД (БК) PD (LC)	PDP PP 25 (SIS) PDP PP 25 (SIS) PDP PP 25 (SIS)	8	7	210	0					7 апта неделя weeks	Балалардың оқуы бойынша По учебным занятиям By student's effort	
4	Техникалық реттеу саласындағы мемлекеттік бақылау және қадағалау Государственный контроль и надзор в области технического регулирования State control and supervision in the field of technical regulation	Бей (ТК) ПД (КВ) PD (EC)	GKNOTR 4311-25 GKNOTR 4311-25 GKNOTR 4311-25	8	5	150	45	15	30	15	90	1 - 2 - 0	Балалардың оқуы бойынша По учебным занятиям By student's effort	
5	Техникалық реттеу саласындағы бақылау Контроль в области технического регулирования Control in the field of technical regulation	Бей (ТК) ПД (КВ) PD (EC)	KOTR 4311-25 KOTR 4311-25 KOTR 4311-25											
6	Техникалық реттеу саласындағы мамандарды даярлау Подготовка специалистов в сфере технического регулирования Training of specialists in the field of technical regulation	Бей (ТК) ПД (КВ) PD (EC)	PSSTR 4312-25 PSSTR 4312-25 PSSTR 4312-25	8	5	150	45	30	15	15	90	2 - 1 - 0	Балалардың оқуы бойынша По учебным занятиям By student's effort	
7	Сарапшы аудиторлардың кәсіби шеберлігі Профессиональные навыки экспертов-аудиторов Professional skills of expert auditors	Бей (ТК) ПД (КВ) PD (EC)	PNEA 4312-25 PNEA 4312-25 PNEA 4312-25											
Барлығы модуль бойынша / Итого по модулю / Total for module				22		660	135	60	75	0	45	270		
Қорытынды аттестаттар / Итоговая аттестация / Final assessment														
1	Қорытынды аттестаттар Итоговая аттестация Final assessment			8	8	240							8 апта неделя weeks	
Барлығы модуль бойынша / Итого по модулю / Total for module				8		240	0	0	0	0	0	0		
БАР.ЛЫҒЫ МОДУЛЬ ДАР БОЙЫНША / ИТОГО ПО МОДУЛЯМ / TOTAL FOR MODULES				240		7200	2040	810	1200	30	615	3735		

Экспертное заключение

на образовательную программу 6B07525 «Стандартизация и сертификация (по отраслям)»
(код и наименование ОП по «Классификатору направлений подготовки кадров с высшим и послевузовским образованием»)

по направлению подготовки 6B075 «Стандартизация, сертификация и метрология (по отраслям)»
(код и название направления подготовки по «Классификатору направлений подготовки кадров с высшим и послевузовским образованием»)

Наименование организации образования/предприятия – партнера по разработке образовательной программы

НАО «Казахский агротехнический исследовательский университет имени С. Сейфуллина», г.Астана, Республика Казахстан

(полное наименование предприятия / организации партнера - работодателя дальнего или ближнего зарубежья соответствующего профиля, страна, город)

Общая характеристика образовательной программы

Образовательная программа 6B07525 «Стандартизация и сертификация (по отраслям)» направлена на подготовку компетентных специалистов, способных эффективно работать в сфере стандартизации и сертификации. Основная цель программы – обеспечение качественной практико-ориентированной подготовки кадров в области стандартизации и сертификации, обладающих профессиональными и социальными компетенциями, отвечающих требованиям современной экономики и рынка труда.

Образовательная программа (далее ОП) разработана в соответствии с Государственным общеобязательным стандартом высшего и послевузовского образования (утвержденным приказом Министра науки и высшего образования Республики Казахстан от 20 июля 2022 года № 2), а также на основе профессионального стандарта «Метрология» (утвержденного приказом Заместителя Председателя Правления НПП РК «Атамекен» от 22 октября 2018 года № 283).

Направление деятельности в сфере стандартизации и сертификации играют ключевую роль в развитии экономики Республики Казахстан, обеспечивая безопасность продукции, повышение ее качества и конкурентоспособности, а также защиту интересов потребителей. Эти процессы способствуют интеграции страны в международную торговлю и формированию устойчивой экономики. Данная образовательная программа предоставляет широкие возможности для подготовки высококвалифицированных специалистов в этой области.

Уникальность программы заключается в межотраслевом подходе к подготовке специалистов: она охватывает не только традиционные сферы промышленности, но и новые сектора в области пищевой и аграрной промышленности. Программа включает в себя модули, посвященные искусственному интеллекту процессов метрологии, сертификации в условиях устойчивого развития и применению национальных, межгосударственных и международных стандартов. Новизна программы проявляется также в интеграции кейс-методов, симуляционных обучающих платформ, а также возможности прохождения практики на базе аккредитованных органов по сертификации и испытательных лабораторий.

Образовательная программа разработана с акцентом на практико-ориентированный подход. Обучающиеся проходят производственную и преддипломную практику в аккредитованных органах сертификации, лабораториях, на предприятиях-партнёрах. Содержание практик и заданий полностью соответствует основным видам профессиональной деятельности выпускника: разработка, внедрение и анализ нормативной документации; участие в процедурах оценки соответствия; контроль качества продукции и услуг; проведение внутренних аудитов и инспекционного контроля; взаимодействие с органами по сертификации и техническому регулированию. В учебный процесс включены мастер-классы от специалистов отрасли, деловые игры, реальный анализ документации и участие в проектах по разработке стандартов и технических регламентов.

Описание и оценка структуры образовательной программы

Образовательная программа включает 240 кредитов, что позволяет обеспечить комплексную подготовку бакалавров техники и технологии, сочетая глубокие теоретические знания с практическими навыками в сфере стандартизации и сертификации пищевой продукции. Структура программы основана на модульном принципе и состоит из 11 модулей, охватывающих общеобразовательные, базовые и профильные дисциплины. Особое внимание уделено формированию ключевых компетенций:

- Soft skills – поведенческие и личностные качества;
- Digital skills – цифровые компетенции;
- Hard skills – профессиональные навыки.

Образовательная программа демонстрирует высокое качество как по содержанию, так и по результатам подготовки выпускников. Это выражается в: устойчивом спросе на выпускников со стороны работодателей; успешном участии студентов и преподавателей в конкурсах, грантах и научных проектах; высоком уровне академической и профессиональной мобильности обучающихся; положительной оценке со стороны независимых экспертов, представителей бизнеса и государственных структур.

Заключение

Образовательная программа 6В07525 «Стандартизация и сертификация (по отраслям)» соответствует современным требованиям в сфере образования, науки и производства. Программа предоставляет широкие возможности для подготовки востребованных специалистов и рекомендуется для реализации в учебном процессе при подготовке бакалавров техники и технологии.

В условиях активного развития отраслей промышленности, сельского хозяйства и пищевой промышленности, а также внедрения международных стандартов в различных сферах экономики, резко возрастает потребность в квалифицированных специалистах по стандартизации, сертификации, техническому регулированию и управлению качеством.

Таким образом, образовательная программа отвечает актуальным требованиям и профессиональным стандартам, способствует повышению конкурентоспособности выпускников и играет значимую роль в развитии национальной системы обеспечения качества и безопасности продукции и услуг.

Рекомендации по улучшению образовательной программы

Образовательная программа основана на компетентностном подходе и предусматривает возможность выбора индивидуальных образовательных траекторий. В условиях глобализации и растущих требований к качеству продукции стандартизованная упаковка и корректная маркировка становятся обязательными элементами при производстве и продаже товаров, так как они обеспечивают

безопасность, удобство использования, сохранность товара, а также информирование потребителей. В условиях усиления требований технических регламентов и стандартов к продуктам питания, специалисты в области стандартизации и сертификации должны обладать не только нормативной базой, но и практическими знаниями в части оценки состояния, качества и безопасности пищевых продуктов. С данной целью для углубления подготовки студентов в области подтверждения соответствия, оценки качества и безопасности пищевой продукции, рекомендуется включить в каталог элективных дисциплин курс «Экспертиза продовольственных продуктов».

Экспертизу провел:

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М.П.

