

**CATALOG OF ELECTIVE DISCIPLINES**

For students in the direction of preparation 7M075 Standardization, certification and metrology (by industries)

Brief description of the elective disciplines of the educational program

EPG	EP	Form of education	The name of discipline	Code of subject	Discipline cycle	Component	Number of credits	Level of training	Cafedra	Course	Academic period	Pre-requisites	Post-requisitions	Brief content of the discipline	Key learning outcomes	Name of the alternative discipline
M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	Regulatory and legal framework of technical regulation	NPOTR 5306	AS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	1	Standardization and certification	Master's dissertation, Research practice	Legal basis for technical regulation, the principle of expertise regulations, principles of state policy. Questions of establishment of obligatory technical norms and rules; safety; confirmation of compliance; standardization; accreditation of OS and testing laboratories; state control (supervision) over observance of requirements of technical regulations; responsibility in cases of discrepancy to requirements of technical regulations and other cases.	Analyzes the current state and modern aspects of development of standardization and certification in the industry under consideration, taking into account the socio-economic priorities of state policy, trade and economic potential, the current level of technology, scientific developments, knows the main goals, objectives, principles, legislation and regulatory documentation in the field of technical regulation, works with electronic information resources and databases in the field of technical regulation and standardization	Information support in the system of technical regulation

M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	Information support in the system of technical regulation	IOSTR 5316	AS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	1	Standardization and certification	Master's dissertation, Research practice	Information support of the system of standardization, conformity assessment and metrology; Functions of the Republican Scientific and Technical Information Center. Provision of regulatory documents and information about the regulatory documents of the parties. Unified State Standards Fund. State classifiers of technical and economic information. Cataloging system. Coding of goods. A comprehensive information system for storing and distributing regulatory documents received by the Republican Information Fund.	Analyzes the current state and modern aspects of the development of standardization and certification in the industry under consideration, taking into account the socio-economic priorities of state policy, trade and economic potential, the current level of technology, scientific developments, knows the main goals, objectives, principles, legislation and regulatory documentation in the field of technical regulation, works with electronic information resources and databases in the field of technical regulation and standardization	Regulatory and legal framework of technical regulation
M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	Certification of materials for environmental safety and cleanliness	SMEBCh 5308	AS	Elective subjects	4.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	1	Standardization and certification	Development of normative and technical documentation on organic products. Standardization and certification of organic production	Terms, concepts, functions, goals, provisions of environmental certification. Classification of objects of environmental certification. The concept of environmental cleanliness of products and services. Environmental labeling. The organization of the protection of the quality of food, services, processes and production. Types of environmental certification. The procedure for environmental certification. Environmental certification in Kazakhstan and abroad. Environmental certification bodies. Environmental certificate	Performs work on accreditation, licensing and certification of materials for environmental safety and cleanliness, knows the regulatory framework, objects and types of licensing, features of standardization and certification of organic products, the procedure for the development, registration, approval and implementation of regulatory and technical documentation for organic products.	Environmental management systems

M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	Environmental management systems	SEM 5318	AS	Elective subjects	4.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	1	Standardization and certification systems	Development of normative and technical documentation on organic products, Standardization and certification of organic production	Scientific and technical information in the field of environmental management; domestic and foreign experience in the field of environmental management system to improve ISO 14000; information on environmental criteria; quality assessment and newsletter, step-by-step review and detection of the process; implementation of environmental quality management system.	Develops and improves environmental management systems, knows the requirements of the current versions of international and domestic standards for management systems, the principles of building integrated systems, the international standards and KPI systems in the food industry;	Certification of materials for environmental safety and cleanliness
M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	System of standards in engineering	SSM 5309	AS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	1	Standardization and certification systems, Interchangeability of standardization and technical measurements	Modern aspects of the development of standardization and certification, Research practice	Normative documents on standardization. Works performed in the standardization of mechanical engineering, Methodical bases of standardization. Interchangeability, unification and aggregation of machines. Comprehensive and advanced standardization in mechanical engineering Stages of technological preparation of production ESTD. Group of standards, purpose, areas of distribution of the PRS. Safety requirements for production processes ISO 14000 environmental safety System.	He knows the normative and technical documents used in the machine-building process, the system of development and production and commissioning, operation and disposal. Is able to analyze, summarize and systematize information about regulatory documents related to machine-building processes.	A system of standards for the production, operation and disposal of products

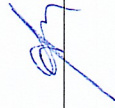
M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	A system of standards for the production, operation and disposal of products	SSPPPEU 5315	AS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	1	Standardization and certification, Interchangeability of standardized products and technical measurements	Modern aspects of the development of standardization and certification, Research practice	Normative documents on standardization. Works performed during the production and operation of products. Basic requirements for the disposal of products. Norms of the rules of storage of products. Safety requirements for production processes. ISO 14000 environmental safety system. Comprehensive and advanced standardization	He knows the normative and technical documents used in the machine-building process, the system of development and production commissioning, operation and disposal. Is able to analyze, summarize and systematize information about regulatory documents related to machine-building processes.	System of standards in engineering
M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	Technical regulation in agriculture	TRA 5206	BS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	2	Standardization and certification, Testing, control and security of production	Master's dissertation, Research practice	Technical regulation, basic concepts, goals, principles. Technical regulations, documents on standardization. Legislative and regulatory and technical regulation in the field of agriculture. The main tasks of work in the field of technical regulation of the AIC. Elements of technical regulation. Conceptual apparatus serving the sphere of technical regulation of the AIC. Technical regulation of products of the agro-industrial complex, safety and quality of products.	He has knowledge of technical regulations for products in the field of agriculture, to use innovative methods of product quality management and digital technologies in ensuring food security in practice, to analyze and diagnose technical objects, to identify and analyze products.	System analysis and diagnostics of technical objects
M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	System analysis and diagnostics of technical objects	SADTO 5212	BS	Elective subjects	5.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	2	Standardization and certification, control and security of production	Master's dissertation, Research practice	Basic concepts and definitions of technical diagnostics. Methodological aspects of system research. Systems modeling, forecasting, diagnosing, the role of measurements. The use of modern means of scientific research. System analysis of modern methods and technical means of diagnosis.	He has knowledge of technical regulations for products in the field of agriculture, to use innovative methods of product quality management and digital technologies in ensuring food security in practice, to analyze and diagnose technical objects, to identify and analyze products.	Technical regulation in agriculture

M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	Development and implementation of KPI system at food industry enterprises	RVSKPPP 5207	BS	Elective subjects	6.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	2	Development and implementation of integrated management systems	Master's dissertation, Research practice	Implementation of the KPI system at food industry enterprises. Stages of KPI development and motivation system. Types of key indicators. KPIs in trade. The economic effect of the introduction of the KPI system in the food industry. Standardization of the stages of development of the KPI system at food industry enterprises. The relationship between the KPI system and the quality of food products.	Develops and improves environmental management systems, knows the requirements of the current versions of international and domestic standards for management systems, the principles of building integrated systems, the introduction of international standards and KPI systems in the food industry	Identification and analysis of products
M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	Identification and analysis of products	IAP 5214	BS	Elective subjects	6.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	2	Standardization and certification, Metrology, Quality systems	Master's dissertation, Research practice	Evaluation and determination of food quality: rules of analysis; methods for determining product falsification; methods for determining the qualitative and quantitative composition of products, safety assessment, general analysis and sample preparation; physico-chemical methods of product identification.	He has knowledge of technical regulations for products in the field of agriculture, to use innovative methods of product quality management and digital technologies in ensuring food security in practice, to analyze and diagnose technical objects, to identify and analyze products.	Development and implementation of KPI system at food industry enterprises
M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	Innovative digital technologies in food security	ICTOPB 5208	BS	Elective subjects	4.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	2	Standardization and certification, Testing, control and security of production, Product quality management	Accreditation and licensing in the field of conformity assessment, Research practice	The role of digital technologies in ensuring food security. Types and role of digital technologies. Subject, object and methods of food market research. Digital technologies in agriculture. Digital technologies in the processing industry. Digital technologies for food safety. Reducing risks when using digital technologies.	He has knowledge of technical regulations for products in the field of agriculture, to use innovative methods of product quality management and digital technologies in ensuring food security in practice, to analyze and diagnose technical objects, to identify and analyze products.	Innovative methods of quality management products

M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	Innovative methods of quality management products	IMUKP 5213	BS	Elective subjects	4.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	1	2	Standardization and certification, Testing, control and security of production, Product quality management	Accreditation and licensing in the field of conformity assessment, Research practice	Methodology and terminology of quality management; Qualimetry in quality management; Systematic approach to quality management; Quality management methods; Standardization and metrology in quality management; Regulatory and legal assurance of product quality.	He has knowledge of technical regulations for products in the field of agriculture, to use innovative methods of product quality management and digital technologies in ensuring food security in practice, to analyze and diagnose technical objects, to identify and analyze products.	Innovative digital technologies in food security
M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	Standardization and certification of organic production	SSPOP 6307	AS	Elective subjects	6.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	2	1	Standardization and certification, Testing, control and security of production	Master's dissertation, Research practice	Relevance, current status, the benefits of organic agriculture; international development experience; formation of legislative and regulatory framework in Kazakhstan; certification systems, control and labeling of organic products in the Kazakhstan market; the volume of production and processing of organic products in Kazakhstan; a system for standardization, certification and control of organic agriculture and organic products.	Performs work on accreditation, licensing and certification of materials for environmental safety and cleanliness, knows the regulatory framework, objects and types of licensing, features of standardization and certification of organic products, the procedure for the development, registration, approval and implementation of regulatory and technical documentation for organic products.	Development of normative and technical documentation on organic products

M130 - «Standardization, certification and metrology (by industry)»	7M07501 - «Standardization and certification»	Full-time (MS 2 years) trimester	Development of normative and technical documentation on organic products	RNPOP 6317	AS	Elective subjects	6.0	Master's program by specialization (Scientific & pedagogical direction)	Стандартизация, метрология и сертификация	2	1	Standardization and certification, Technology and methods of development of technical regulations and normative documents	Master's dissertation, Research practice	Regulatory framework of organic products, requirements for the production of organic products, certification of organic products, requirements for agrotechnical techniques for organic products, research activities in the field of organic products.	Performs work on accreditation, licensing and certification of materials for environmental safety and cleanliness, knows the regulatory framework, objects and types of licensing, features of standardization and certification of organic products, the procedure for the development, registration, approval and implementation of regulatory and technical documentation for organic products.	Standardization and certification of organic production
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