

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY**

EDUCATIONAL PROGRAM

"Technology of production and processing of livestock products"

HIGHER EDUCATION LEVEL Second (Master's) level

(name of higher education level)

HIGHER EDUCATION DEGREE Master

(name of higher education degree)

BRANCH OF KNOWLEDGE N Agriculture, forestry, fisheries and
veterinary medicine

(code and name of the field of knowledge)

SPECIALTY H2 Livestock

(code and name of specialty)

"APPROVED"

Academic Council of Sumy National University of Science
and Technology

" _____ " _____ 2025

(Protocol No. _____)

Chairman of the Academic Council Vladimir
LADYKA

The educational and professional program is put into effect
from " _____ " _____ 2025.

Rector Igor KOVALENKO

(order No. _____ dated " _____ " _____ 2025)

Sumy – 2025

PREFACE

The educational and professional program for the training of higher education applicants at the second educational level in the specialty H2 Animal Husbandry contains the amount of ECTS credits required to obtain the corresponding higher education degree; a list of graduate competencies; the normative content of the training of higher education applicants, formulated in terms of learning outcomes; forms of certification of higher education applicants; requirements for the presence of a system of internal quality assurance of higher education.

Developed by a project team consisting of:

Victor OPARA – Candidate of Agricultural Sciences, Associate Professor, Head of the Department of Feed Technology and Animal Feeding;

Olga BORDUNOVA – Doctor of Agricultural Sciences, Professor, Head of the Department of Genetics, Animal Breeding and Biotechnology;

Oleksandr KISELYOV – Candidate of Agricultural Sciences, Associate Professor, Acting Head of the Department of Veterinary Medicine and Cynology;

Oleksandr MYKHALKO – Doctor of Philosophy, Associate Professor of the Department of Feed Technology and Animal Nutrition.

Yaroslav KRYVOSHEEV - student of the TVPPT group 23401m

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LETTER OF AGREEMENT
OPP "Technology of production and processing of livestock products"
SVO "Master"

Educational program guarantor :	
Candidate of Agricultural Sciences, Associate Professor, Head of the Department of Feed Technology and Animal Feeding	_____ Victor OPARA
Project team members:	
Doctor of Agricultural Sciences, Professor, Head of the Department of Genetics, Animal Breeding and Biotechnology	_____ Olga BORDUNOVA
Candidate of Agricultural Sciences, Associate Professor, Acting Head of the Department of Veterinary Medicine and Cynology	_____ Oleksandr KISELYOV
Doctor of Philosophy, Associate Professor of the Department of Feed Technology and Animal Nutrition	_____ Oleksandr MYKHALKO
student of the TVPPT group 23401m	_____ Yaroslav KRYVOSHEIV

Considered and approved at an extended meeting of the Faculty of Biology and Technology with the participation of student activists and stakeholders (minutes No. _____ dated _____2025).

Approved at the meeting of the Academic Council of the Faculty of Biology and Technology (minutes No. _____ dated _____2025).

Chairman of the Scientific Council of the Biological and Technological Faculty, Doctor of Agricultural Sciences, Professor..... Victoria VECHORKA

AGREE :

Deputy Head of the Education Quality Department, licensing and accreditation, Candidate of Economic Sciences, Associate Professor Olena RIBINA

Head of the educational department, Candidate of Economic Sciences, Associate Professor Natalia KOLODNENKO

Vice-Rector for Scientific and Pedagogical Affairs
and educational work of SNAU, Doctor of Economics ,
Professor Margarita Lyshenko

1. Profile of the educational and professional program "Technology of production and processing of livestock products" in the specialty H2 "Livestock"

1 – General information	
Full name of higher education institution and structural unit	Sumy National Agrarian University Faculty of Biology and Technology
Higher education degree and title of qualification in the original language	Higher education degree – Master's degree Qualification – Master in Technology of Production and Processing of Livestock Products
Official name of the educational program	Educational and professional training program for specialists "Technology of production and processing of livestock products"
Type of diploma and scope of educational program	Unitary, 90 ECTS credits, study period 1.4 years
Availability of accreditation	Certificate of accreditation of the educational institution No. 19001422, order of the Ministry of Education and Science of Ukraine dated February 27, 2018 No. 204
Cycle/level	NQF of Ukraine – level 7, FQ-ENEA – second cycle, EQF-LLL – Level 7
Forms of education	Full-time, part-time
Prerequisites	Possession of a bachelor's degree. Admission requirements are determined by the "Rules for Admission to Sumy National Agrarian University"
Language of instruction	Ukrainian
Duration of the educational program	Until July 1, 2027
Internet address of permanent placement of the educational program description	204-Technology-of-production-and-processing-of-livestock-products-master.pdf

2 – Purpose of the educational program	
Training of a highly qualified and competitive specialist, adapted to production and management activities, capable of comprehensively combining scientific, project and entrepreneurial components aimed at introducing innovative technologies in the field of production and processing of livestock products	
3 – Characteristics of the educational program	
Subject area (field of knowledge, specialty, specialization (if any))	<p>Object(s) of study – technological processes for the production and processing of livestock products and methods of conducting experimental research in the field of livestock breeding.</p> <p>The goals of the study are to prepare masters capable of solving complex tasks and problems in the field of technology for the production and processing of livestock products when carrying out professional activities or in the process of study, which involves conducting research and/or implementing innovations and are characterized by uncertainty of conditions and requirements.</p> <p>Theoretical content of the subject area – knowledge of the organization and control of the technology of production and processing of products of animal origin and methods of conducting scientific research in animal husbandry</p> <p>Methods, techniques and technologies – modern methods, techniques and technologies of organization, planning, implementation and control of production components of technologies for production and processing of livestock products,</p> <p>Tools and equipment (objects/subjects, devices and instruments that a higher education student learns to apply and use) – equipment, devices and technical means for carrying out production processes in the field of animal husbandry, conducting genetic, breeding and biotechnological analyses, determining the safety and quality of feed and feed additives and products of animal origin.</p>
Orientation of the educational program	<p>Educational and professional.</p> <p>Focuses on fundamental and scientific and technological developments in the production and processing technologies of animal products.</p>
Main focus of the educational program and specialization	<p>Training of a highly qualified specialist in the technology of production and processing of livestock products.</p> <p>Keywords: innovative production technologies,</p>

	animal breeding, feed resources, feeding, processing of livestock products, quality assessment of products of animal origin.
Program features	The educational and professional master's program provides for the acquisition of deep theoretical knowledge combined with practical training in the dual form of education for making effective decisions, using innovative production technologies in the field of animal husbandry, obtaining high-quality and safe products of animal origin, specialized IT programs for optimizing, modifying and improving the industry.
4 – Graduate eligibility to employment and further education	
Eligibility for employment	The specialist is able to perform the specified professional work in accordance with the national classifier of professions DK 003:2010 and/or the International Standard Classification of Occupations 2008 (ISCO-08). 1237.1 Chief zootechnician 2213.2 Animal technician 2213.2 Animal technician for product quality control 2213.2 Animal technician for breeding 2213.2 Research technologist for the production and processing of livestock products 2213.2 Animal husbandry production and processing engineer 2213 Junior Researcher (Animal Science); - Researcher (zootechnics) - Researcher-consultant (zootechnics) 2320 Teacher of a vocational educational institution
Academic rights of graduates	Continuing education to obtain the third (educational and scientific) level of higher education and acquire additional qualifications in the adult education system
5 – Teaching and assessment	
Teaching and learning	The use of interactive, problem-oriented, information and communication principles of theoretical and practical training, the information and educational environment Moodle , the result of which are highly qualified specialists who meet the requirements of the labor market. Mastering the methodology of scientific research and

	<p>scientific-practical work, skills in presenting their results in native and foreign languages.</p> <p>Conducting scientific work using the scientific and material base of the university and partners.</p> <p>Application of tutoring to monitor independent work and individual scientific guidance in completing the thesis</p>
Evaluation	<p>The professional competence of a master is determined according to the Regulations on the Organization of the Educational Process at Sumy National University.</p> <p>Testing scientific research at seminars and conferences</p> <p>Publication of research results.</p> <p>Certification is carried out in the form of a single state qualification exam and public defense of the qualification work in accordance with the established procedure.</p>
6 – Software competencies	
Integral competence	<p>The ability to solve complex tasks and problems in the field of technology for the production and processing of livestock products when carrying out professional activities or in the process of learning, which involves conducting research and/or implementing innovations and are characterized by uncertainty of conditions and requirements</p>
General Competencies (GC)	<p>GC 1. Ability for abstract thinking, analysis and synthesis.</p> <p>GC 2. Skills in using information and communication technologies.</p> <p>GC 3. Ability to communicate in a foreign language.</p> <p>GC4. Ability to search, process and analyze information obtained from various sources.</p>
Professional competencies of the specialty (PC)	<p>FC 1. Ability to analyze and control the safety and quality of feed and feed additives and animal nutrition.</p> <p>FC 2. Ability to develop, organize and implement measures to increase animal productivity, control the safety and quality of products processed and the efficiency of its production.</p> <p>FC 3. Ability to organize and control the implementation of measures aimed at improving selection and breeding work in animal husbandry.</p> <p>FC 4. Ability to model and design technological processes for the production and processing of</p>

	<p>products of animal origin.</p> <p>FC 5. Ability to organize entrepreneurial and financial activities and assess the economic efficiency of production and processing of animal products.</p> <p>FC 6. Ability to practically manage work or educational processes in the field of production and processing of animal products, which are complex, unpredictable and require new strategic approaches.</p> <p>FC 7. Ability to create and apply systems and methods for processing animal products.</p> <p>FC 8. Ability to develop and implement scientific and applied projects in the field of production and processing technologies of livestock products and related interdisciplinary areas, taking into account technical, economic, social, legal and environmental aspects.</p> <p>FC 9. Ability to apply modern methods and tools for researching technologies for production and processing of livestock products, as well as ensuring product quality.</p> <p>FC 10. The ability to clearly and unambiguously convey one's own knowledge, conclusions, and arguments to specialists and non-specialists, in particular to students.</p> <p>FC 11. Ability to use modern methods and techniques for operational quality control of products in accordance with standards</p> <p>FC 12. Ability to use knowledge of the biology of livestock productivity in production conditions</p> <p>FC 13. Ability to use innovations in dairy and meat farming to obtain high-quality livestock products.</p>
<p>7 – Program learning outcomes</p>	
<p>LO 1. Assess and ensure the quality and safety of livestock production technologies, feeds and feed additives, animal nutrition levels and products of animal origin.</p>	
<p>LO 2. Develop, implement and modernize effective technologies and processes in the field of production and processing of livestock products.</p>	
<p>LO 3. Conduct research and/or innovation activities to obtain new knowledge and create new technologies and products in the field of animal husbandry and in broader multidisciplinary contexts</p>	
<p>LO 4. Apply modern mathematical methods, information technologies and specialized software for research and development in the field of technologies for the production and processing of livestock products.</p>	

LO 5. Find the necessary data in scientific literature, databases and other sources, analyze and evaluate this data.	
LO 6. Build and research models of technological processes for the production and processing of livestock products, assess their adequacy, and determine the limits of applicability.	
LO 7. Manage complex activities in the field of production and processing of livestock products, determine goals and objectives, plan and distribute work, and manage resources.	
LO 8. Communicate freely orally and in writing in Ukrainian and one of the foreign languages when discussing professional issues, research and innovations in the field of production and processing of livestock products and related problems.	
LO 9. Make effective decisions on issues of production and processing of livestock products, including in difficult and unpredictable conditions, predict their development, identify factors that influence the achievement of set goals, analyze and compare alternatives, assess risks and likely consequences of decisions.	
LO 10. Be responsible for the development of professional knowledge and practices, assessing the strategic development of the team, and forming an effective personnel policy.	
LO 11. Apply modern methods and techniques for operational quality control of products in accordance with standards	
LO 12. Apply knowledge of the biology of livestock productivity in production conditions	
LO 13. Apply innovations in the field of dairy and meat cattle breeding to obtain high-quality livestock products.	
8 – Resource provision for program implementation	
Human resources	The training of applicants for this educational and professional program is carried out by scientific and pedagogical workers who have scientific degrees and academic titles, work at Sumy NAU at their main place of work; have a high scientific and professional level of activity
Logistics and technical support	The material and technical support of the educational and professional program is determined by using specialized faculty and inter-faculty laboratories and classrooms (PCR analysis, electron microscopy, Beekeeping Laboratory, Laboratory software in the agricultural sector, Educational and scientific laboratory of technology, mechanization and automation of pig farming "NOG SLAT", Innovative module for milk production and processing, Innovative module of virtual reality and robotics, Laboratory of machine milking. The

	<p>laboratories are equipped with computer workstations and unlimited access to the Internet.</p> <p>All necessary social and household infrastructure is available, the number of places in dormitories meets the requirements</p>
Information and educational and methodological support	<p>The official website https://snau.edu.ua contains information about educational programs, educational, scientific and educational activities, structural divisions, admission rules, university contacts. All users registered at the university have unlimited access to the Internet.</p> <p>Scientific Library of the SNAU http://library.snau.edu.ua provides access to electronic catalogs and an electronic library, world information resources, Ukrainian repositories , and online libraries.</p> <p>The educational and professional program is provided with educational and methodological publications and developments of the departments that provide scientific and educational support. The educational and methodological materials are presented in the program of the SNAU Distance Learning Center https://cdn.snau.edu.ua/moodle/ and in repositories of Sumy NAU http://repo.snau.edu.ua . The library reading rooms are provided with free access to the Internet.</p>
9 – Academic mobility	
National credit mobility	<p>The principles of academic mobility are determined by the legislation of Ukraine and the Regulations of the SNAU on academic mobility and non-formal education. The possibility of studying in several specialties or in several HEIs at the same time is determined by the legislation of Ukraine. Transfer of credits obtained at other universities of Ukraine is allowed, provided that their acquired competencies correspond .</p>
International credit mobility	<p>It is implemented on the basis of bilateral agreements between Sumy NAU and higher education institutions of foreign partner countries, in particular, within the framework of the EU Erasmus + program, cooperation agreements with the University of Natural Sciences in Lublin (Poland), the Czech University of Natural Sciences (Prague), the University of Applied Sciences Weihenstephan-Triesdorf</p>

	(Germany).
Education of foreign higher education applicants	Foreign citizens can study provided they have a certificate of equivalence of their education level.

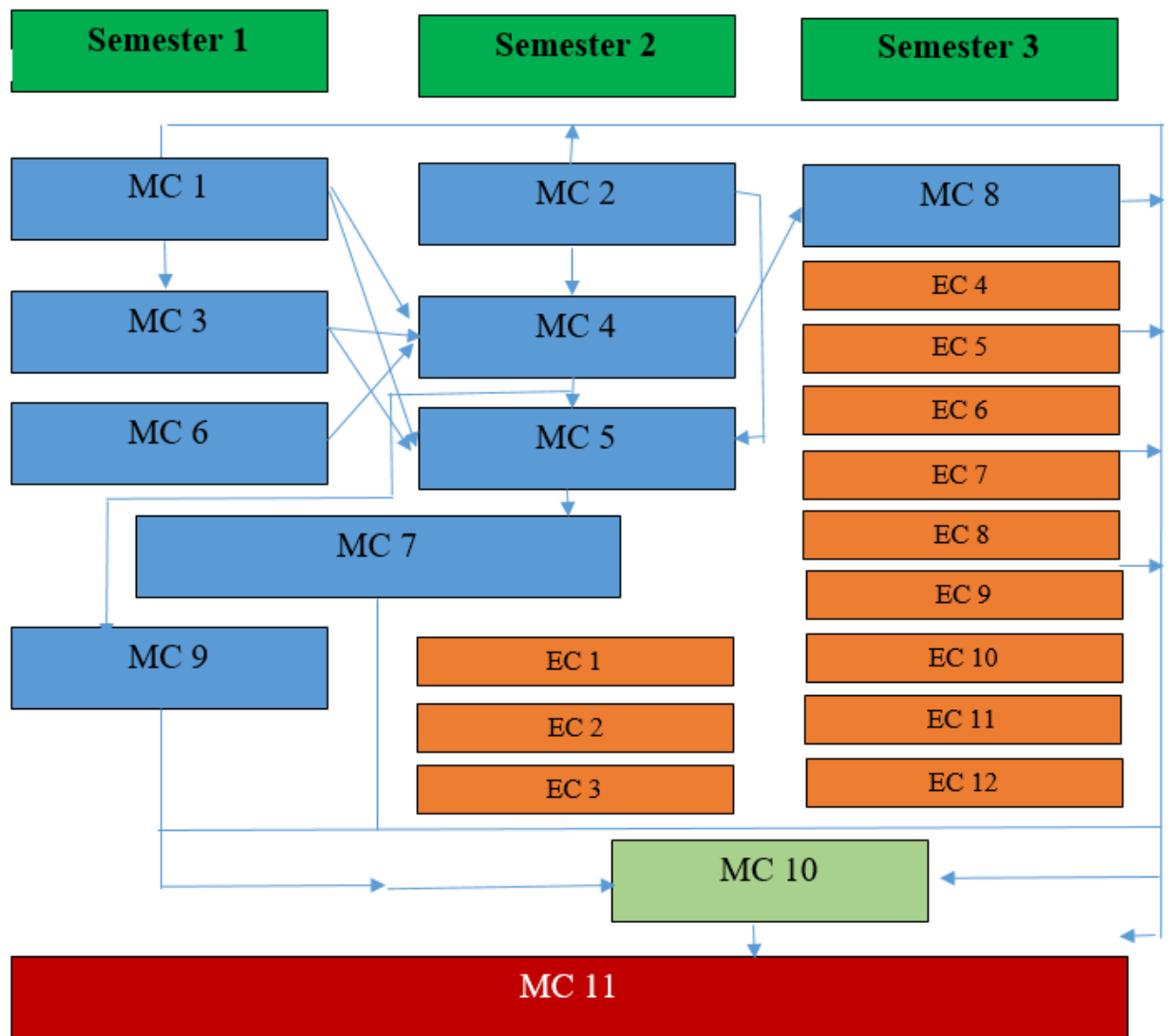
2. List of components of the educational and professional program and their logical sequence

2.1. List of components of the OP

Code n/a	Components of the educational program (courses, course projects (papers), internships, qualification work)	Number of credits	Control summary form
Mandatory components of the OP			
MC 1.	Methodology and organization of scientific research using a foreign language in a professional direction	5	Exam
MC 2.	Production management, business organization and personnel management in livestock farming	5	Exam
MC 3.	Modern technologies of feed and feed additives	5	Exam
MC 4.	Innovative technologies for livestock production	5	Exam
MC 5.	Innovative technologies for processing livestock products	5	Exam
MC 6.	Breeding of farm animals	5	Exam
MC 7.	Modern methods of assessing the quality of livestock products	5	Exam
MC 8	Biology of productivity of agricultural and livestock animals	5	Exam
MC 9	Innovations in dairy and beef cattle breeding	5	Exam
MC 10.	Research practice	10	Credit d.
MC 11.	Certification exam. Qualification work	10	
Total volume of mandatory components		65	
Elective components of the OP (student chooses 5 subjects)			
EC 1.	Organic livestock production technology	5	Exam
EC 2.	World agriculture	5	Test
EC 3.	Agrarian policy	5	Test
EC 4.	Civil defense	5	Test
EC 5.	Philosophical problems in biology	5	Test
EC 6.	Animal nutrition and feed quality	5	Test
EC 7.	Occupational safety in animal husbandry	5	Test
EC 8.	Microbiology and biochemistry of milk	5	Test
EC 9.	Microbiology and biochemistry of meat	5	Test
EC 10.	Technology of meat and meat products	5	Test

EC 11.	Animal welfare	5	Test
EC 12.	Professional adaptation	5	Test
Total volume of sample components		25	
TOTAL SCOPE OF THE EDUCATIONAL PROGRAM		90	

**Structurally logical scheme
OPP " Technology of production and processing of livestock products"**



MC 1 - Methodology and organization of scientific research using a foreign language in a professional direction
 MC 2 - Production management, business organization and personnel management in animal husbandry
 MC 3 - Modern technologies of feeds and feed additives
 MC 4 - Innovative technologies for livestock production
 MC 5 - Innovative technologies for processing livestock products
 MC 6 - Breeding of farm animals
 MC 7 - Modern methods of assessing the quality of livestock products
 MC 8 - Biology of productivity of agricultural and livestock animals
 MC 9 - Innovations in dairy and beef cattle

breeding
 MC 10 - Research Practice
 MC 11 - Certification exam. Qualification work
 EC 1 - Organic livestock production technology
 EC 2 - World agriculture
 EC 3 - Agrarian policy
 EC 4 - Civil defense
 EC 5 - Philosophical problems in biology
 EC 6 - Animal nutrition and feed quality
 EC 7 - Occupational safety in animal husbandry
 EC 8 - Microbiology and biochemistry of milk
 EC 9 - Microbiology and biochemistry of meat
 EC 10 - Technology of meat and meat products
 EC 11 - Animal welfare
 EC 12 - Professional adaptation

3. Certification form for higher education applicants

Certification of graduates of the educational and professional program "Technology of Production and Processing of Livestock Products" specialty H2 Livestock is carried out in the form of a final qualifying exam and public defense (demonstration) of the qualifying work in accordance with the established procedure.

The attestation qualification exam is conducted in writing and is aimed at verifying the achievement of learning outcomes specified by the educational program and the higher education standard in the specialty H2 Animal Husbandry. The qualification work in the specialty H2 Animal Husbandry OP "Technology of production and processing of livestock products" must reflect the level of professional training of the graduate according to professional competencies and must contain a solution to a complex research or innovative problem in the field of technologies for production and processing of livestock products. The qualification work must not contain academic plagiarism, fabrication and falsification and is checked for plagiarism before the public defense.

The defense of the qualification work is carried out in accordance with the established procedure, openly and publicly, with mandatory review of the work. After the defense, the qualification work must be placed in the university depository.

The certification of graduates is completed by issuing a document of the established sample on the award of a master's degree with the assignment of the qualification: Master in the specialty H2 Animal Husbandry.

4. Matrix of correspondence of program competencies to the components of the educational and professional program "Technology of production and processing of livestock products"

	OK1	OK2	OK3	OK4	OK5	OK6	OK7	OK8	OK9	OK10	OK11
ZK1	*	*	*	*	*	*	*	*	*	*	*
ZK2	*	*	*	*	*	*	*	*	*		*
ZK3	*										
ZK4	*						*				*
FC1			*							*	*
FC2				*	*	*	*	*		*	*
FC3						*			*	*	*
FC4				*	*					*	*
FC 5		*								*	*
FC6		*								*	*
FC7					*					*	*
FC8	*	*		*	*		*		*	*	*
FC9	*			*	*		*			*	*
FC10	*									*	*
FC11							*			*	*
FC12								*		*	*
FC13									*	*	*

5. Matrix of ensuring program learning outcomes (PLN) by the corresponding components of the educational and professional program "Technology of production and processing of livestock products"

	OK1	OK2	OK3	OK4	OK5	OK6	OK7	OK8	OK9	OK10	OK11
PRN1			*				*			*	*
PRN2				*	*	*			*	*	*
PRN3	*			*	*			*	*	*	*
PRN4	*		*	*		*				*	*
PRN5	*						*				*
PRN6				*	*					*	*
PRN7		*								*	*
PRN8	*										*
PRN9		*								*	*
PRN10		*								*	*
PRN11							*			*	*
PRN12								*		*	*
PRN 13									*		

**List of regulatory documents,
on which the educational and professional program is based**

1. Standard of Higher Education of Ukraine of the second level of education, degree of higher education – Master, fields of knowledge – 20 Agrarian Sciences and Food, specialties – 204 Technology of Production and Processing of Livestock Products, approved and put into effect by order of the Ministry of Education and Science of Ukraine dated March 26, 2021 No. 389.
2. Law of Ukraine “On Higher Education” dated 01.07.2014 No. 1556-VII. – Access mode : <http://zakon4.rada.gov.ua/laws/show/1556-18>.
3. Law of Ukraine “On Education” dated 05.09.2017 No. 2145-VIII. – Access mode: <http://zakon5.rada.gov.ua/laws/show/2145-19>.
4. Resolution of the Cabinet of Ministers of Ukraine dated 23.11.2011 No. 1341 “On Approval of the National Qualifications Framework”.
5. Resolution of the Cabinet of Ministers of April 29, 2015 No. 266 “On approval of the list of fields of knowledge and specialties in which higher education applicants are trained”.
6. Resolution of the Cabinet of Ministers of Ukraine No. 1187 dated December 30, 2015 “On Approval of Licensing Conditions for Conducting Educational Activities”, as amended by Resolution of the Cabinet of Ministers No. 347 dated May 10, 2018.
7. Order of the Ministry of Education and Science of Ukraine dated 06.11.2015 No. 1151 “On the features of the introduction of the list of fields of knowledge in which higher education applicants are trained, approved by the Resolution of the Cabinet of Ministers of Ukraine dated April 29, 2015 No. 266”.
8. Order of the Ministry of Education of Ukraine dated 01.06.2016 No. 600 “On approval and implementation of methodological recommendations for the development of higher education standards”.
9. Order of the Ministry of Economic Development and Trade of Ukraine dated November 18, 2014 No. 1361 “On approval of amendments to the National Classifier of Ukraine DK 003:2010” (amendment No. 2).
10. National Classifier of Ukraine: “Classifier of Professions” DK 003:2010. – Kyiv: Publishing House “ Sotsinform ”, valid from 2010-11-01.
11. Resolution of the Cabinet of Ministers of Ukraine dated August 30, 2024 No. 1021 “On Amendments to the List of Fields of Knowledge and Specialties in Which Applicants for Higher and Professional Pre-Higher Education are Trained”