

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRICULTURAL UNIVERSITY

EDUCATIONAL AND PROFESSIONAL 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)

FIELD OF KNOWLEDGE H Agriculture, forestry, fisheries, and
(code and name of field of knowledge) Veterinary medicine

SPECIALITY H2 Animal husbandry
(code and name of specialty)

"APPROVED"

By the Academic Council of Sumy NAU

" 25 " 03 2026

(Minutes №. 15)

Chairman of the

Academic Council [Signature] Volodymyr LADYKA



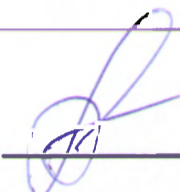
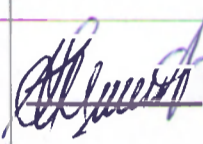

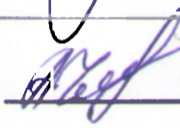

The educational and professional program shall
come into effect on " 01 " 09 2026.

Rector [Signature] Ihor KOVALENKO

(Order №. 116/20 dated " 29 " 04 2026)

Sumy – 2026


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

Guarantor of the educational program:	
Candidate of Agricultural Sciences, Associate Professor, Head of the Department of Feed Technology and Animal Nutrition	 Viktor OPARA
Project team members:	
Doctor of Agricultural Sciences, Professor of the Department of Genetics, Selection and Animal Biotechnology	 Leontiy KHMELNYCHYI
Doctor of Philosophy, Associate Professor, Department of Feed Technology and Animal Nutrition	 Oleksandr MYKHKALO
Doctor of Philosophy, Senior Lecturer, Department of Animal Genetics, Breeding and Biotechnology	 Oleksandr CHEKH
Student TVPPT 2501m	 Yelizaveta TIMOFIEVA

Reviewed and approved at an extended meeting of the Faculty of Biology and Technology with the participation of student activists and stakeholders (Minutes №. 1 dated 16.02 2026).


Approved at a meeting of the Academic Council of the Faculty of Biology and Technology (Minutes №. 79 dated 3.05 2026).

Chair of the Academic Council of the Faculty of Biology and Technology, Doctor of Science, Professor

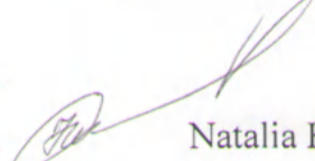

Victoria VECHORKA

AGREED:

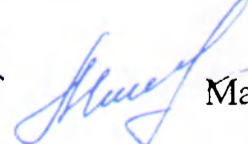
Head of the Department of Education Quality, Licensing and Accreditation, Candidate of Economic Sciences, Associate Professor


Olena RYBINA

Head of the Academic Department, Candidate of Economic Sciences, Associate Professor


Natalia KOLODNENKO

Vice-Rector for Scientific and Pedagogical and Educational Work at SNAU, Doctor of Economics, Professor


Marharyta LYSHENKO

FOREWORD

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

Developed by a project group consisting of:

Viktor OPARA – guarantor of the educational program, Candidate of Agricultural Sciences, Associate Professor, Head of the Department of Feed Technology and Animal Nutrition;

Leontiy KHMELNYCHYI – Doctor of Agricultural Sciences, Professor of the Department of Genetics, Selection and Animal Biotechnology;

Oleksandr MYKHKALO – Doctor of Philosophy, Associate Professor of the Department of Feed Technology and Animal Nutrition;

Oleksandr CHEKH – Doctor of Philosophy, Senior Lecturer, Department of Genetics, Selection and Animal Biotechnology;

Yelizaveta TYMOFIEVA – second (master's) level higher education student, group TVPPT 2501m.

Reviewers:

Igor Voshchenko – Chairman of the Association of Livestock and Poultry Farmers of Sumy Region, Candidate of Veterinary Sciences

Oleksandr Bordun, Senior Researcher at the Institute of Agriculture of the North-East of the National Academy of Agrarian Sciences of Ukraine, Candidate of Agricultural Sciences

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1. Profile of the educational and professional program "Technology of Production and Processing of Livestock Products" in the specialty H2 "Animal Husbandry"

1 – General information	
Full name of the higher education institution and structural unit	Sumy National Agrarian University Faculty of Biology and Technology
Higher education degree and qualification title in the original language	Higher education degree – Master's Qualification – Master of Technology in Production and Processing of Livestock Products
Official name of the educational program	Educational and professional program for training specialists in "Technology of production and processing of livestock products."
Type of diploma and scope of the educational program	Single, 90 ECTS credits, duration of study 1.4 years
Accreditation	Accreditation certificate No. 19762, date of issue 15.01 2026
Cycle/level	NQF Ukraine – Level 7, FQ-ENEA – Second Cycle, EQF-LLL – Level 7
Forms of education	Institutional (full-time (day), part-time), dual
Prerequisites	Bachelor's degree. Admission requirements are determined by the "Rules for Admission to Sumy National Agrarian University."
Language of instruction	Ukrainian
Permanent Internet address of the educational program description	https://surl.li/mzkpcg

2 – Purpose of the educational program	
To train highly qualified and competitive specialists with an active civic position and personal worldview development, adapted to production and management activities, capable of comprehensively combining scientific, design, 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>Subject(s) of study: technological processes in the production and processing of livestock products and methods of conducting experimental research in the field of animal husbandry.</p> <p>Learning objectives – to train masters capable of solving complex tasks and problems in the field of Technology for the production and processing of livestock products in the course of their professional activities or in the process of learning, which involves conducting research and/or implementing innovations and is 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 animal products, and methods of conducting scientific research in animal husbandry.</p> <p>Methods, techniques, and technologies – modern methods, techniques, and technologies for organizing, planning, implementing, and controlling the production components of technologies for the production and processing of livestock products.</p> <p>Tools and equipment objects/items, devices, and instruments that higher education students learn to apply and use – equipment, instruments, and technical means for carrying out production processes in the field of animal husbandry, conducting genetic selection and biotechnological analyses, determining the safety and quality of feed and feed additives and animal products.</p>
Orientation of the educational program	<p>Educational and professional.</p> <p>Focuses on fundamental, scientific, and technological developments in the production and processing of animal products.</p>
The main focus of the educational program and specialization	<p>Training highly qualified specialists in the Technology of production and processing of livestock products.</p> <p>Key words: innovative production technologies,</p>

	animal breeding, feed resources, feeding, processing of livestock products, and quality assessment of animal products.
Program features	The educational and professional program provides for the acquisition of in-depth theoretical knowledge combined with practical training in a dual form of education for effective decision-making, using innovative production technologies in the field of animal husbandry and complying with international standards for animal welfare and the quality and safety of animal products.
4 – Suitability of graduates for employment and further education	
Suitability for employment	The specialist can perform the specified professional work in accordance with the national classification of professions DK 003:2010 and/or the International Standard Classification of Occupations 2008 (ISCO-08). 2213.2 Zootechnician 2213.2 Zootechnician for product quality control 2213.2 Zootechnician for breeding 2213.2 Research Technologist for the Production and Processing of Livestock Products 2213.2 Engineer-technologist for the production and processing of livestock products 2213 Junior Researcher (Animal Husbandry); Research assistant (animal husbandry) - Research associate-consultant (zootechnics) 2320 Teacher at a vocational and technical educational institution
Academic rights of graduates	Continuing education to obtain a third (educational and scientific) level of higher education and acquire additional qualifications in the adult education system
5 – Teaching and assessment	
Teaching and learning	Use of interactive, problem-oriented, information and communication principles of theoretical and practical training, the Moodle information and educational environment, resulting in highly qualified specialists who meet the requirements of the labor market.

	<p>Mastering the methodology of scientific research and scientific-practical work, skills in presenting their results in native and foreign languages.</p> <p>Conducting scientific work using the scientific and material resources of the university and its partners.</p> <p>Use of tutoring to monitor independent work and individual scientific guidance in the completion of graduation work.</p>
Assessment	<p>Rating control on a 100-point ECTS scale; interim control during the semester (interim assessment); multi-criteria assessment of students' current work: level of knowledge demonstrated in seminars; activity during discussion of issues raised in class; express control during classroom sessions; independent study of the topic as a whole or individual issues; writing essays; test results; written assignments during control works; production situations. Possibility of additional points in the final assessment if the student completes an individual assignment: research work; scientific and practical research with presentation of results, etc.</p>
6 – Program competencies	
Integral competence	<p>Ability to solve complex tasks and problems in the field of livestock production and processing technology in the course of professional activity or in the process of training, which involves conducting research and/or implementing innovations, and is characterized by uncertainty of conditions and requirements</p>
General competencies (GC)	<p>GC 1. Ability to think abstractly, analyze, and synthesize.</p> <p>GC 2. Skills in using information and communication technologies.</p> <p>GC 3. Ability to communicate in a foreign language.</p> <p>GC 4.3 Ability to search for, process, and analyze information obtained from various sources.</p>
Professional competencies of the specialty (PC)	<p>PC 1. Ability to analyze and control the safety and quality of feed and feed ingredients and animal nutrition.</p> <p>PC 2. Ability to develop, organize, and implement measures to improve animal productivity, control the safety and quality of processed products, and ensure the efficiency of production.</p> <p>PC 3. Ability to organize and control the implementation of measures aimed at improving</p>

	<p>selection and breeding work in animal husbandry.</p> <p>PC 4. Ability to model and design technological processes for the production and processing of animal products.</p> <p>PC 5. Ability to organize entrepreneurial and financial activities and evaluate the economic efficiency of the production and processing of animal products.</p> <p>PC 6. Ability to practically manage work or training processes in the field of production and processing of animal products, which are complex, unpredictable, and require new strategic approaches.</p> <p>PC 7. Ability to create and apply systems and methods for processing animal products.</p> <p>PC 8. Ability to develop and implement scientific and applied projects in the field of production and processing of livestock products and related interdisciplinary areas, taking into account technical, economic, social, legal, and environmental aspects.</p> <p>PC 9. Ability to apply modern methods and tools for researching production and processing livestock products, as well as ensuring product quality.</p> <p>PC 10. Ability to clearly and unambiguously convey one's knowledge, conclusions, and arguments to specialists and non-specialists, in particular to students.</p> <p>PC 11. Ability to use modern methods and techniques for operational quality control of products in accordance with standards</p> <p>PC 12. Ability to apply knowledge of animal biology, productivity, and welfare in production settings</p> <p>PC 13. Ability to use innovations in dairy and beef cattle farming to obtain high-quality livestock products.</p>
7 – Program learning outcomes	
<p>LO 1. Assess and ensure the quality and safety of technologies for the production of livestock products, feed and feedstuffs, animal nutrition levels, and animal products.</p>	
<p>LO 2. Develop, implement, and modernize effective technologies and processes in the production and processing of livestock products.</p>	
<p>LO 3. Conduct research and/or innovative activities to gain new knowledge and create new technologies and products in the field of animal husbandry and in</p>	

broader multidisciplinary contexts.	
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.	
LO 5. Find the necessary data in scientific literature, databases, and other sources sources, analyze, and evaluate this data.	
LO 6. Build and study models of technological processes for the production and processing of livestock products, evaluate their adequacy, and determine their limits of applicability.	
LO 7. Manage complex activities in the field of production and processing of livestock products, define goals and objectives, plan and distribute work, and manage resources.	
LO 8. Communicate freely, both 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 issues.	
LO 9. Make effective decisions on the production and processing of livestock products, including in complex and unpredictable conditions, forecast their development, identify factors that influence the achievement of set goals, and analyze and compare alternatives, assess risks, and the likely consequences of decisions.	
LO 10. Be responsible for the development of professional knowledge and practices, assessment of the strategic development of the team, and the formation of an effective personnel policy.	
LO 11. Apply modern methods and techniques for operational control of product quality in accordance with standards.	
LO 12. Apply knowledge of the biology of productivity and animal welfare in production conditions.	
LO 13. Apply innovations in dairy and beef cattle farming to produce high-quality livestock products.	
8 – Resource support for program implementation	
Staffing	Training of applicants for this educational and professional program is carried out by scientific and pedagogical staff who have scientific degrees and academic titles, work at Sumy NAU as their main place of work, and have a high level of scientific and professional activity
Material and technical support	Material and technical support for the educational and professional program is provided through the use of specialized faculty and inter-faculty laboratories and classrooms (PCR analysis, electron microscopy, beekeeping laboratory, beekeeping, Laboratory Software in Agriculture, Educational and Scientific

	<p>Laboratory of Technology, Mechanization, and Automation of Pig Farming "NOG SLAT," Innovative Module for Milk Production and Processing, AFISHE Educational and Scientific Laboratory of Aquaculture, SNU Research Center, Educational and Scientific Laboratory of Feed Technology and Animal Feeding, Innovative Module for Virtual Reality and Robotics, Machine Milking Laboratory. The laboratories are equipped with computer workstations and unlimited Internet access. All necessary social and domestic infrastructure is available, and the number of places in the dormitories is meets the requirements</p>
<p>Information and educational support</p>	<p>The official website https://snau.edu.ua contains information about educational programs, teaching, scientific and educational activities, structural units, admission rules, and university contacts. All university-registered users have unlimited access to the Internet. The Scientific Library of SNAU http://librarv.snau.edu.ua provides access to electronic catalogs and an electronic library, global information resources, Ukrainian repositories, and online libraries. The educational and professional program is supported by teaching materials and developments from departments that provide scientific and educational support. Teaching materials are available at the SNAU Distance Learning Center https://cdn.snau.edu.ua/moodle/, and the Sumy NAU repository http://repo.snau.edu.ua. The library's reading rooms offer free Internet access.</p>
<p>9 – Academic mobility</p>	
<p>National credit mobility</p>	<p>The principles of academic mobility are determined by Ukrainian legislation and the SNAU Regulations on Academic Mobility and Informal Education. The possibility of studying several specialties or at multiple higher education institutions simultaneously is determined by Ukrainian legislation. Credits earned at other universities in Ukraine may be transferred, provided that the competencies acquired are equivalent.</p>

International mobility	credit	This is carried out 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, through cooperation agreements with the University of Life Sciences in Lublin (Poland), the Czech University of
		Life Sciences (Prague), the University of Applied Sciences Wiesenstephan-Triesdorf (Germany).
Education of foreign applicants for higher education		Foreign citizens may study, provided they have a certificate of equivalence of their level of education.

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

2.1. List of OP components

Code n/a	Components of the educational program (academic disciplines, course projects (works), internships, qualification work)	Number of credits	Form of final assessment
Mandatory components of the educational program			
EC 1.	Methodology and organization of scientific research using a foreign language for professional direction	5	Exam
EC 2.	Production management, business organization, and personnel management in animal husbandry	5	Exam
EC 3.	Modern technologies of feeds and feed additives	5	Exam
EC 4.	Innovative technologies for the production of livestock products	5	Exam
EC 5.	Innovative Technologies for Processing Animal Products	5	Exam
EC 6.	Breeding of Farm Animals	5	Exam
EC 7.	Modern Methods for Assessing the Quality of Livestock Products	5	Exam
EC 8.	Biology of Farm Animal Productivity	5	Exam
EC 9.	Innovations in dairy and beef cattle breeding	5	Exam
EC 10.	Research practice	10	Credit d.
EC 11.	Final certification	10	
Total volume of compulsory components		65	
Elective components of the educational program (the student chooses 5 disciplines)			
SC 1.	Organic livestock production technology	5	Exam
SC 2.	World agriculture	5	Credit
SC 3.	Agricultural policy	5	Credit

SC 4.	Professional elective component	5	Credit
SC 5.	Professional elective component	5	Credit
Total volume of selective components		25	
TOTAL VOLUME OF THE EDUCATIONAL PROGRAM		90	

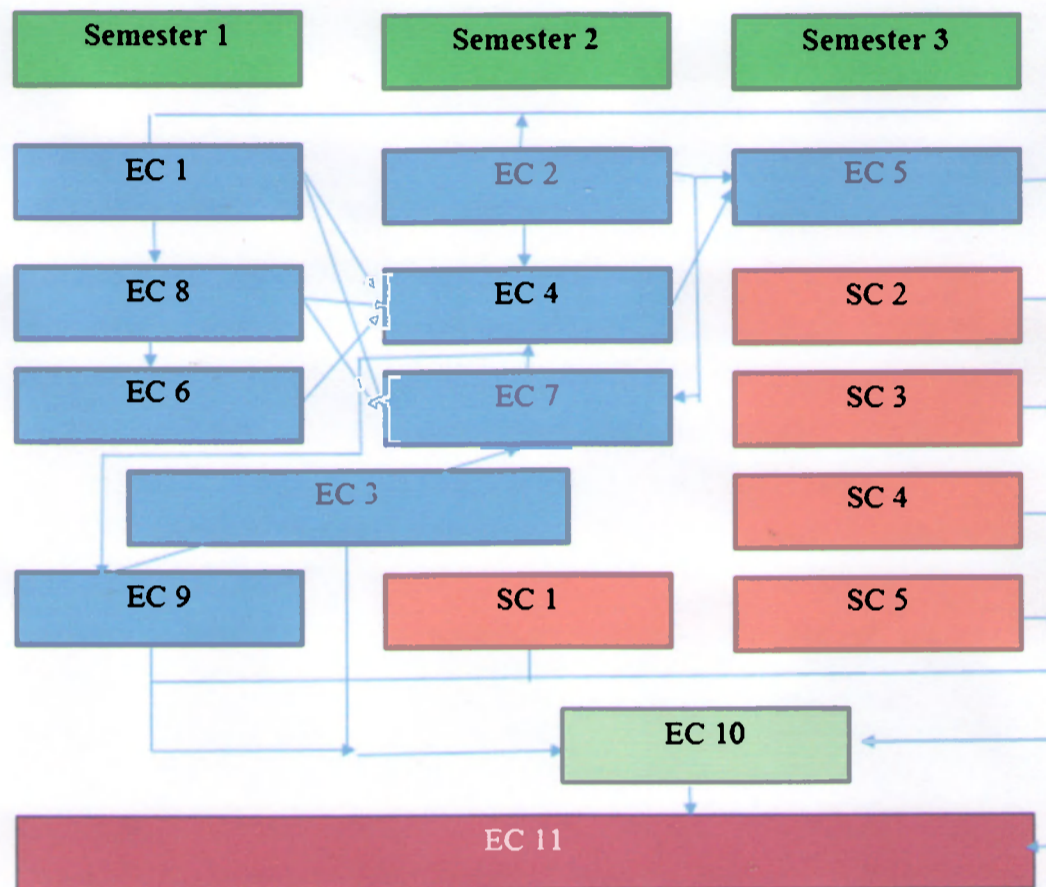
Cycle of professional training

1. Organic livestock production technology
2. World agriculture
3. Agricultural policy
4. Civil defense
5. Philosophical problems in biology
6. Animal nutrition and feed quality
7. Occupational safety in animal husbandry
8. Microbiology and Biochemistry of Milk
9. Microbiology and Biochemistry of Meat
10. Technology of meat and meat products
11. Biotechnology in animal husbandry
12. Professional adaptation

Note:

The list of elective educational components provided above may be supplemented. The current list of elective courses is developed and updated taking into account the needs of the labor market, proposals from employers, higher education students, and other stakeholders, the results of the educational program's monitoring, published on the university's official website, and approved by the Council for Quality Assurance in Educational Activities and Higher Education at SNAU in accordance with established procedures.

**Structural and logical diagram
Educational program "Technology of production and processing of livestock products."**



- EC 1** - Methodology and organization of scientific research with the use of a foreign language for professional purposes
- EC 2** - Production management, business organization, and personnel management in animal husbandry
- EC 3** - Modern technologies of feed and feed additives
- EC 4** - Innovative technologies for livestock production
- EC 5** - Processing and quality assessment of livestock products
- EC 6** - Selection of farm animals
- EC 7** - Animal welfare
- EC 8** - Biology of livestock productivity
- EC 9** - Innovations in dairy and beef cattle farming
- EC 10** - Research practice
- EC 11** - Certification exam. Qualification work
- SC** - Selective components

3. Form of certification of higher education applicants

Certification of graduates of the educational and professional program “Technology of Production and Processing of Livestock Products” in the specialty H2 Animal Husbandry is carried out in the form of a certification exam and public defense (demonstration) of a qualification work in accordance with the established procedure.

The certification exam is conducted in writing and is aimed at verifying the achievement of learning outcomes defined by the educational program and the higher education standard in the specialty H2 Animal Husbandry. The qualification work in the specialty H2 Animal Husbandry of the educational program “Technology of Production and Processing of Livestock Products” should reflect the level of professional training of the graduate in accordance with professional competencies and should contain the solution of a complex research or innovative problem in the field of technologies for the production and processing of livestock products. The qualification work must not contain academic plagiarism, fabrication, or 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 defense, the qualification work is placed in the university repository.

The certification of graduates ends with the issuance of a standard document awarding them a master's degree with the qualification: Master of Science in 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."

	EC 1	EC 2	EC 3	EC 4	EC 5	EC 6	EC 7	EC 8	EC 9	EC 10	EC 11
GC 1	*	*	*	*	*	*	*	*	*	*	*
GC 2	*	*	*	*	*	*	*	*	*		*
GC 3	*										
GC 4	*				*		*				*
PC 1			*							*	*
PC 2				*	*	*	*	*		*	*
PC 3						*			*	*	*
PC 4				*	*		*			*	*
PC 5		*								*	*
PC 6		*								*	*
PC 7					*					*	*
PC 8	*	*		*	*				*	*	*
PC 9	*			*	*					*	*
PC 10	*									*	*
PC 11					*					*	*
PC 12								*		*	*
PC 13									*	*	*

5. Matrix of ensuring program learning outcomes (PRN) with relevant components of the educational and professional program "Technology of production and processing of livestock products."

	EC1	EC2	EC3	EC4	EC5	EC6	EC7	EC8	EC9	EC10	EC11
LO1			*		*					*	*
LO2				*	*	*	*		*	*	*
LO3	*			*	*			*	*	*	*
LO4	*		*	*		*				*	*
LO5	*										*
LO6				*	*					*	*
LO7		*								*	*
LO8	*										*
LO9		*					*			*	*
LO10		*								*	*
LO11					*					*	*
LO12							*	*		*	*
LO13									*		