

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY

EDUCATIONAL-PROFESSIONAL PROGRAM
"FOOD TECHNOLOGIES"

HIGHER EDUCATION LEVEL Second (Master's) level
(name of higher education level)

HIGHER EDUCATION DEGREE Master
(name of higher education degree)

FIELD OF KNOWLEDGE 18 Production and Technologies
(code and name of field of knowledge)


SPECIALTY 181 Food Technologies
(code and name of specialty)

APPROVED


By the Academic Council of Sumy National Agrarian
University

« 15 » 03 in 2024

(Protocol

Chairman of the Academic Council  Volodymyr
LADYKA

The educational and professional program is implemented
from " 01 " 09 2024

Acting Rector  Volodymyr LADYKA
(order № 157/09 dated " 02 " 04 2024)

Sumy 2024

Letter of Approval

Educational and Professional Program

Vice-Rector for Scientific and
Pedagogical
and Educational Work, PhD, Prof.



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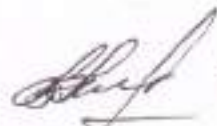
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FOREWORD

Developed by the working group consisting of:

Fedir PERTSEVOY, Doctor of Technical Sciences, Professor of the Technologies of Nutrition Department;

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Oleg SAVENKO, higher education student.

Reviewers:

1. Oleksandr Pashchenko, director of the poultry processing complex at Agro-Ros LLC.

2. Marina Lykhatska, technologist at the Reshetilivska branch of Terrafood LLC.

1. Profile of the Educational-Professional Program in "Food Technologies" with Specialty 181 "Food Technologies"

1 - General Information	
Full name of the higher educational institution and structural unit	Sumy National Agrarian University Faculty of Food Technologies
Degree of higher education and qualification name in the original language	Degree of Higher Education - Master's. Qualification - Master's in Food Technologies.
Official name of the educational-professional program.	Food Technologies.
Type of diploma and scope of the educational-professional program.	Master's degree, single, 90 ECTS credits, duration of study 1 year 4 months.
Accreditation status.	Accredited under No. 1937 Issued on 30.06.2021 Valid until 01.07.2026.
Cycle/Level	HPK Ukraine - Level 7, FQ-EHEA - Second Cycle, QF-LLL - Level 7
Prerequisites	Having a Bachelor's degree in Food Technologies or a Specialist, Master's degree in another educational-professional program within the specialty 181 "Food Technologies"
Language of instruction	English, Ukrainian
Term of validity of the educational-professional program	1937, until 2026
Internet address of the permanent location of the description of the educational-professional program	https://snau.edu.ua/2024-2/
2 - Objective of the educational-professional program	
Training of highly qualified, competitive professionals in manufacturing and technology with strong social-personal qualities and research capabilities for the food industry and restaurant establishments.	
3 - Description of the educational and professional program	

Subject area (field of knowledge, specialty, specialization (if applicable))	18 Manufacturing and Technology 181 «Food Technology»
Orientation of the educational-professional program	Educational-professional
Program objectives	Formation of special skills and knowledge that involve acquiring research skills of students using a complex of research-innovative, organizational-technological, and marketing methods, techniques, and technologies to improve the efficiency of functioning and development of food enterprises, restaurant establishments, and industry organizations.
The main focus of the educational-professional program and specialization	The educational-professional program ensures the formation of master's skills in solving industry problems, planning and conducting scientific research on the development and improvement of food and culinary products technologies, analyzing the obtained results and implementing developments in food enterprises.
Program features	<p>Formation of professional competencies through theoretical-methodological and applied issues of the food industry;</p> <p>Mastering the skills of choosing research methods, modifying existing ones and developing new ones based on the set tasks;</p> <p>Ability to build models of systems and processes, use modern optimization programs in a specific field of knowledge;</p> <p>Ability to apply modern methods of experimental research, ability to plan experiments and process the obtained results, analyze and comprehend them, draw conclusions.</p> <p>Ability to present the obtained results in the form of reports, abstracts, articles, presentations. Certain experience in conducting patent research and preparing application materials for intellectual property objects;</p> <p>Mastery of methods of organizing and controlling the appropriate level of quality and safety of food products, environmental safety and resource conservation of technological processes of production;</p> <p>Teaching skills and methods;</p> <p>Implementation of design and research works related to the study of technological processes, introduction of new and improvement of existing technologies for the production of</p>

	food and culinary products at food enterprises and restaurant establishments.
4 – Suitability of graduates for employment and further education	
Suitability for employment	<p>Graduates are able to perform professional work in various linear and functional divisions of organizations of all forms of ownership and organizational and legal forms, as well as educational, scientific, consulting, consulting, design and project organizations and institutions; subdivisions of state and municipal administration bodies in accordance with the National Classifier of Ukraine "Classification of Professions" DK 003:2010:</p> <p>1222.1 The main specialists are managers and technical managers of production divisions in industry 1222.2 Chiefs (other managers) and foremen of production units (subdivisions) in industry 2149 Professionals in other fields of engineering 2310 Teachers of universities and higher educational institutions 2320 Teachers of secondary educational institutions 2359 Other teaching professionals 2471 Quality control professionals 2482 Professionals in the field of hotel and restaurant business</p> <p>In addition, the master's level provides for the professional activity of graduates in the positions of head of a technological laboratory, head of a sanitary-technological laboratory, laboratory engineer, design engineer, chief technologist of the project, chief administrator, head of the research unit.</p>
Further education	Graduates have the right to continue their studies at the third educational and scientific level of higher education "Doctor of Philosophy", to acquire additional qualifications in the postgraduate education system.
5 – Teaching and assessment	
Teaching and learning	<p>- student-centered learning, self-learning, problem-oriented learning, individual-creative and competence-based, system-functional approach;</p> <p>-lectures, laboratory works, seminars, practical classes in small groups, independent work based on textbooks and notes, consultations with teachers, preparation of a qualifying paper (on the recommendation of the head of the educational and professional program)</p>
Assessment	The assessment of the quality of mastering the educational and professional program includes a cumulative point-rating system, which provides for evaluating students for

	all types of classroom and extra-auditory educational activities aimed at obtaining program learning results: input, current, phased, modular, final control, exams, testing, credit for professional practice, final certification - public defense of qualification work.
6 – Software competencies	
Integral Competence (IR)	The ability to solve complex tasks and problems in food technology in professional activities and/or in the learning process, which involves conducting research and/or implementing innovations and is characterized by the uncertainty of conditions and requirements.
general competence (GC)	<ol style="list-style-type: none"> 1. Ability to search, process and analyze information from various sources. 2. The ability to conduct research at the appropriate level. 3. Ability to generate new ideas (creativity), show initiative and resourcefulness. 4. The ability to act socially, responsibly and consciously. 5. Ability to work in an international context.
Professional competences of the specialty (PC)	<ol style="list-style-type: none"> 1. The ability to choose and use specialized laboratory and technological equipment and devices, science-based methods and software for conducting scientific research in the field of food technology. 2. The ability to plan and carry out scientific research taking into account the global trends of scientific and technical development of the industry, to develop food products of a new generation, the ability to innovative scientific activity, which contributes to the development of new knowledge in the field of food technology. 3. Ability to protect intellectual property in the field of food technology. 4. The ability to develop programs for the development and effective functioning of food industry enterprises and restaurant establishments, including in the context of foreign economic relations. 5. The ability to present and discuss the results of scientific research and project solutions, including in a foreign language, at scientific seminars and conferences on the development of food technologies, draw up scientific reports, and prepare scientific publications. 6. Ability to organize a system of quality and safety control of food raw materials, semi-finished products and food products, to ensure the quality and safety of food products during the implementation of technological innovations at the enterprises of the industry.

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| | <p>7. The ability to apply mathematical methods and models in applied research, to optimize technological processes for the development of innovative technological solutions in the production of food products.</p> <p>8. The ability to organize production and practically implement scientific developments taking into account energy efficiency and resource conservation and improving the quality indicators of food products.</p> <p>9. The ability to develop and implement commercial and scientific and technical projects in the field of food technology, taking into account technical, commercial, legal issues and issues of labor and environmental protection.</p> |
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7 — Program learning outcomes (PLO)

PLO 1. To find, systematize and analyze the necessary information in scientific and technical literature, electronic databases and other sources of information at the stage of choosing a problem or research topic for solving professional and scientific tasks in the field of food technology.

PLO 2. To demonstrate initiative and ingenuity during the development and implementation of technical and technological innovations. Be able to independently make non-standard creative decisions, bear responsibility for them, generate new ideas and implement them in practical activities, demonstrate the ability to adapt.

PLO 3. Apply special equipment, modern software, methods and techniques that are acceptable in certain branches of food technology, during the performance of scientific research in the conditions of educational, scientific and production laboratories.

PLO 4. Choose and apply the most suitable methods of mathematical modeling and optimization when developing scientific and technical projects in the field of food technology.

PLO 5. Develop and implement innovative technological solutions for solving existing problems and further development of the food industry, develop foreign economic relations of enterprises of the industry and establishments of the restaurant industry.

PLO 6. Develop programs for the development and operation of enterprises in the industry, implement rational methods of managing production processes, plan the need for resources. Form and implement own models of professional activity, taking into account best practices in the organization of scientific and industrial activities.

PLO 7. To have specialized knowledge and to take into account the trends of scientific and technical development of food science in practical activities, to choose the most promising and rational directions of scientific and technical activity, to clearly convey one's own knowledge and conclusions to specialists and non-specialists.

PLO 8. Analyze and formalize the results of scientific and industrial tests in the form of scientific and technical documentation, scientific reports, security documents, articles, theses of scientific conferences.

PLO 9. To have practical business professional communication skills in Ukrainian and one of the foreign languages, to be able to logically formulate thoughts, to present the results of one's own scientific and practical activities.

PLO 10. Plan and manage innovative scientific projects of fundamental and applied direction, taking into account the current state of science and technology in food technologies, conduct research, analyze the results obtained and draw conclusions, reproduce the results of scientific research and tests in the production conditions of real operating enterprises.

PLO 11. To use professionally profiled knowledge in the field of food quality and safety management for the development and implementation of HACCP and ISO product quality and safety management systems.

PLO 12. To have an information and communication base for the development and implementation of innovations, taking into account the basics of economics, marketing and management.

PLO 13. Know and apply the basic principles of obtaining innovative food products from various types of raw materials, taking into account the social and economic efficiency of scientific development.

PLO 14. Apply knowledge and skills on zero-waste technologies in the conditions of existing food industry enterprises and restaurant establishments, use of new methods of canning and storage of food products, use of bioplastics for packaging raw materials, semi-finished products and finished products.

PLO 15. To organize the work of food industry enterprises and restaurant establishments in accordance with the requirements of life safety, resource conservation and environmental safety.

8 - Resource support for program implementation

Staff support	The presence of a support group, improving the qualifications of scientific and pedagogical workers, ensuring compliance with a scientific degree or academic title of a scientific and pedagogical worker.
Material and technical support	Availability of a library; educational and scientific laboratories; offices; sports complex; food factory; computer classes; dormitory; medical center.
Informational and educational and methodological support	Availability of methodical support for practical, seminar, laboratory works, practice program, tasks for independent work of students, questions for current and final control. Availability of reading rooms, textbooks, study guides, periodicals.

9 — Academic mobility

National credit mobility	Agreement on cooperation in the scientific and educational sphere between the Sumy National Agrarian University and the State Biotechnological University dated July 4, 2022.
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International credit mobility	Framework agreement between Guizhou University, China and Sumy National Agrarian University dated November 25, 2020 Agreement No. R-DOP.0161.6.19.2016 on cooperation between the Sumy National Agrarian University and the University of Economics in Wrocław
Education of foreign students of higher education	In accordance with the "Rules of admission to the Sumy NAU", the education of higher education applicants from other countries of the world is conducted in Ukrainian and English.

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

2.1. List of EPP components

Code n/a	Components of the educational and professional program (educational disciplines, practice, qualification work)	Number of credits	Summary form. control
1	2	3	4
Mandatory components of OPP			
MC1	Business Foreign Language	5,0	Exam
MC2	Personnel management and innovative development of enterprises	5,0	Diff. test
MC3	Innovative engineering	5,0	Exam
MC4	Management of the quality of food products	5,0	Exam
MC5	Professional practice	10,0	Diff. test
MC6	Qualification work (execution and defense)	10,0	Public defense of qualification work
The uniqueness of OPP			
MC7	Scientific research work	10,0	Exam
MC8	Innovative technologies in enterprises of the industry	10,0	Exam
MC9	Scientific foundations of waste-free technologies of the food industry	5,0	Diff. test
The total volume of mandatory components:		65 ECTS credits	
Selective components of OPP			
<i>Discipline at the choice of ZVO</i>			
SC1	Selective component 1 from the list	5,0	Diff. test
<i>Disciplines of scientific and professional direction at the choice of the applicant of higher education</i>			
SC2	Selective component 3 from the list	5,0	Diff. test

SC3	Selective component 5 from the list	5,0	Diff. test
SC4	Selective component 2 from the list	5,0	Diff. test
SC5	Selective component 4 from the list	5,0	Diff. test
The total amount of sample components:		25 ECTS credits	
TOTAL VOLUME OP		90 ECTS credits	

2.2. Structural and logical scheme of master's training

	Block of general training (competencies)			Block of professional training (competencies)	
	general	Research	Communicative	Professional in-depth knowledge and skills	
1 semester	Personnel management and innovative development of enterprises	Scientific research work		Innovative technologies in enterprises of the industry	
				Innovative engineering	
2 semester		Scientific research work		Management of the quality of food products	
		Business Foreign Language		Innovative technologies in enterprises of the industry	
				Professional practice	
				Selective component SC 2	
				Selective component SC 5	
3 semester				Scientific foundations of waste-free technologies of the food industry	
			Qualification work		
				Selective component SC 1	
				Selective component SC 3	
			Selective component SC 4		

3. Form of attestation of applicants of higher education

Attestation of graduates of the educational and professional program "Food Technologies" of the second (master's) level is carried out in the form of defense of a qualifying master's thesis and ends with the issuance of a document of the established model on awarding him a master's degree with the qualification: master's in food technology. Attestation is carried out openly and publicly at a meeting of the Examination Commission for the attestation of higher education applicants.

4. Matrix of correspondence of program competencies to the components of the educational and professional program

	MC1	MC2	MC3	MC4	MC5	MC6	MC7	MC8	MC9
IC	+	+	+	+	+	+	+	+	+
GC1	+					+	+	+	
GC2						+	+		
GC3		+			+	+	+	+	+
GC4		+		+		+			+
GC5	+					+	+		+
PC1			+			+	+		
PC2			+			+	+	+	+
PC3								+	+
PC4		+	+	+	+	+		+	+
PC5	+				+	+	+	+	
PC6				+	+	+		+	
PC7						+	+	+	+
PC8			+	+	+	+		+	+
PC9		+	+		+				

5. The matrix of provision of program learning outcomes (PLO) with relevant components of the educational and professional program

	MC1	MC2	MC3	MC4	MC5	MC6	MC7	MC8	MC9
PLO1	+			+		+	+		+
PLO2					+	+	+	+	
PLO3			+		+	+	+		+
PLO4						+	+	+	
PLO5					+	+	+		+
PLO6		+		+	+	+		+	
PLO7			+		+	+	+		+
PLO8	+			+		+	+	+	
PLO9	+					+		+	
PLO10			+			+	+	+	
PLO11				+	+	+		+	
PLO12		+				+			
PLO13		+				+		+	+
PLO14					+		+		+
PLO15			+		+	+		+	

List of normative documents on which the OPP is based

1. Law of Ukraine dated July 1, 2014 No. 1556-VII "On Higher Education" [Access mode: <https://zakon.rada.gov.ua/laws/show/1556-18>]
2. Law of Ukraine dated September 5, 2017 "On Education" - [Access mode: <http://zakon5.rada.gov.ua/laws/show/2145-19>].
3. Decree of the Cabinet of Ministers of Ukraine dated April 29, 2015 No. 266 "On approval of the list of fields of knowledge and specialties for which higher education applicants are trained" [Access mode: <http://zakon4.rada.gov.ua/laws/show/20/266-2015-p#Find>]
4. Resolution of the Cabinet of Ministers of Ukraine No. 1187 of 12/30/2015 "On approval of the Licensing conditions for conducting educational activities of educational institutions" [Access mode: <http://zakon4.rada.gov.ua/laws/show/1187-2015-n/page>].
5. Resolution of the Cabinet of Ministers of Ukraine dated November 23, 2011 No. 1341 "On approval of the National Framework of Qualifications" [Access mode: <http://zakon4.rada.gov.ua/laws/show/1341-2011-n>]
6. National Classifier of Ukraine: "Classifier of professions DK 003:2010" [Access mode: <https://zakon.rada.gov.ua/rada/show/va327609-10#Text>]
7. Standard of higher education in specialty 181 "Food technologies" branch of knowledge 18 "Production and technologies" for the first (bachelor's) level of higher education. Approved and put into effect by the order of the Ministry of Education and Science of Ukraine dated October 18, 2018 No. 1125 [Access mode: <https://mon.gov.ua/storage/app/media/vishchaosvita/zatverdzeni%20standarty/2021/1/29/181-Kharch.Tekhn-baklavr-VO-zatv.Stand.01.11.pdf>]
8. Regulations on educational programs at Sumy National Agrarian University dated October 15, 2019 [Access mode: <https://snau.edu.ua/wp-content/uploads/2020/07/%D0%9F%D0%BE%D0%BB%D0%BE%D0%B6%D0%B5%D0%BD%D0%BD%D1%8F-%D0%BF%D1%80%D0%BE-%D0%BE%D1%81%D0%B2%D1%96%D1%82%D0%BD%D1%96-%D0%BF%D1%80%D0%BE%D0%B3%D1%80%D0%B0%D0%BC%D0%B8.pdf>]
9. Standards and recommendations for quality assurance in the European Higher Education Area (ESG) [Access mode: <https://naqa.gov.ua/wp-content/uploads/2019/07/%D0%94%D0%BE%D0%B4%D0%B0%D1%82%D0%BE%D0%BA-1-%D0%A1%D1%82%D0%B0%D0%BD%D0%B4%D0%B0%D1%80%D1%82%D0%B8-%D1%96-%D1%80%D0%B5%D0%BA%D0%BE%D0%BC%D0%B5%D0%BD%D0%B4%D0%B0%D1%86%D1%96%D1%96%CC%88-%D1%89%D0%BE%D0%B4%D0%BE-%D0%B7%D0%B0%D0%B1%D0%B5%D0%B7%D0%BF%D0%B5%D1%87%D0%B5%D0%BD%D0%BD%D1%8F-%D1%8F%D0%BA%D0%BE%D1%81%D1%82%D1%96-%D0%B2-%D0%84%D0%B2%D1%80%D0%BE%D0%BF%D0%B5%D0%B8%CC%86%D1%81%D1%8C%D0%BA%D0%BE%D0%BC%D1%83>]

[%D0%BF%D1%80%D0%BE%D1%81%D1%82%D0%BE%D1%80%D1 %96-%D0%B2%D0%B8%D1%89%D0%BE%D1%96%CC%88-%D0%BE%D1%81%D0%B2%D1%96%D1%82%D0 %B8.pdf](#)].

10. International Standard Classification of Education (ISCED 2011): UNESCO Institute for Statistics [Access mode: <http://www.uis.unesco.org/education/documents/isced-2011-en.pdf>].

11. ISCED Fields of Education and Training 2013 (ISCED-F 2013): UNESCO Institute for Statistics [Access mode: <http://www.uis.unesco.org/Education/Documents/isced-fields-of-education-training-2013.pdf>].

12. Methodological recommendations for the development of higher education standards, approved by the order of the Ministry of Education and Science of Ukraine dated 01.06.2017 No. 600 (as amended by the order of the Ministry of Education and Science of Ukraine dated 21.12.2017 No. 1648), approved by the higher education sector Scientific Methodical Council of the Ministry of Education and Science of Ukraine (protocol dated 03/29/2016 No. 3) [access mode: <https://mon.gov.ua/storage/app/media/vishcha-osvita/rekomendatsii-1648.pdf>]

13. Development of the system of quality assurance of higher education in Ukraine: information and analytical review [Access mode: https://erasmusplus.org.ua/images/phocadownload/%D0%A0%D0%BE%D0%B7%D0%B2%D0%B8%D1%82%D0%BE%D0%BA %D1%81%D0%B8%D1%81%D1%82%D0%B5%D0%BC%D0%B8 %D0%B7%D0%B0%D0%B1%D0%B5%D0%B7%D0%BF %D1%8F%D0%BA%D0%BE%D1%81%D1%82%D0%B8_book_2015.pdf];

14. European Credit Transfer Savings System: User Guide [Accessed: ec.europa.eu/education/tools/ects_en.htm].

15. EQF-LLL – European Qualifications Framework for Lifelong Learning [Access mode: https://ec.europa.eu/ploteus/sites/eac-efq/files/brochexp_en.pdf]

16. QF-EHEA – Qualification Framework of the European Higher Education Area [Access mode: <http://www.ehea.info/article-details.aspx?ArticleId=67>]

17. Rashkevich Yu.M. The Bologna process and the new paradigm of higher education: a monograph / Yu.M. Rashkevich. – Lviv: Publishing House of Lviv Polytechnic, 2014. – 168 p.

18. TUNING (for familiarization with special (professional) competencies and examples of standards [Access mode: <http://www.unideusto.org/tuningeu/>]

Appendix 1 Tentative list of selective components of the EPP

Selective components of EPP*			
<i>Discipline of choice of institution of higher education 1 from the list</i>			
SC1	The psychology of success	5,0	Diff. test
	Cost management		
	Establishment of a business in the food industry		
<i>Disciplines of scientific and professional direction at the choice of the applicant of higher education</i>			
SC2	Energy management and energy audit of processing and food enterprises (ukrainian)	5,0	Diff. test
	Energy management and energy audit of processing plants and food industry		
SC3	Modern taropackaging materials and environments	5,0	Diff. test
	Basics of bioplastics technology		
SC4	Low-temperature and extrusion technologies	5,0	Diff. test
	Production technologies of ecologically clean and organic products		
SC5	Innovative ingredients in food technology	5,0	Diff. test
	Information technologies and optimization of technical and technological objects of the processing industry		
The total amount of sample components:		25 ECTS credits	