

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
Sumy National Agrarian University

EDUCATIONAL AND SCIENTIFIC PROGRAM
"FOOD TECHNOLOGIES"

LEVEL OF HIGHER EDUCATION Third (educational and scientific) level
(name of higher education level)

DEGREE OF HIGHER EDUCATION Doctor of Philosophy
(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 specialty name)

"APPROVED"

Academic Council of Sumy National University of
Science and Technology

" 24 " 05 2024

(Protocol No. 16)

Chairman of the Academic Council _____
Volodymyr LADYKA 

The educational and professional program was put into
effect from " 29 " 09 2024.









Acting rector _____ Volodymyr LADYKA

(order No. 28 of " 28 " 05 2024)

Sumy - 2024

LETTER OF AGREEMENT
educational and scientific program
"Food technologies"

Level of higher education – third (educational and scientific)

Vice-rector for scientific and internatijnal affairs activity		Yuriy DANKO
Dean of the Faculty of Food technologies		Nataliia BOLHOVA
The project group consists of:		
Head of the project group:		
Candidate of Technical Sciences, Associate Professor, Head of the Technologies of Nutrition Department		Oksana MELNYK
Members of the project team:		
Doctor of Technical Sciences, Professor of the Technologies of Nutrition Department		Fedir PERTSEVOY
Doctor of Technical Sciences, Professor of the Technologies of Nutrition Department		Ihor MAZURENKO
Doctor of Technical Sciences, Associate Professor, Head of Technologies and Food Safety Department		Maryna SAMILYK
Candidate of Technical Sciences, Associate Professor of Technologies and Food Safety Department		Yulia NAZARENKO
Graduate Student of the Technologies of Nutrition Department		Olha SEREDA

PREFACE

Developed by the project group of specialty 181 "Food Technologies" of the Sumy National Agrarian University, consisting of:

Oksana Yuriivna Melnyk - head of the project group, candidate of technical sciences, head of the department of food technology;

Fedir Vsevolodovych Pertsevov - Doctor of Technical Sciences, Professor of the Department of Food Technology;

Ihor Kostiantynovich Mazurenko - doctor of technical sciences, professor of the department of food technology;

Maryna Mykhaylivna Samilyk - Doctor of Technical Sciences, Head of the Department of Technology and Food Safety;

Nazarenko Yuliya Valentynivna - candidate of technical sciences, associate professor of the department of technology and food safety;

Sereda Olha Hryhorivna is a graduate student of the Department of Food Technology.

I. EDUCATIONAL COMPONENT OF THE EDUCATIONAL AND SCIENTIFIC PROGRAM

1. Profile of the educational and scientific program in specialty 181 "Food technologies"

1. General information	
Full name of the institution of higher education	Sumy National Agrarian University
Level of higher education	The third (educational and scientific) level
Degree of higher education	Doctor of Philosophy (Philosophy Doctor degree)
Branch of knowledge	18 Production and technologies
Specialty	181 Food technologies
The full title of the qualification in the original language	Doctor of Philosophy in "Production and Technology" in the specialty "Food technologies" Doctor of Philosophy of Food Technology
The official name of the educational and scientific program	Food technologies
Qualification in diploma	The degree of higher education is Doctor of Philosophy Specialty - 181 "Food technologies" Educational program "Food technologies"
Type of diploma and scope of the program	Single Doctor of Philosophy diploma, first scientific degree, 4 academic years, 60 ECTS credits of the educational component of the educational and scientific program
Restrictions on forms of education	Missing
Availability of accreditation	752, until 01.07.2026
Program cycle/level	NRK of Ukraine – level 8, FQ-EHEA – third cycle, EQF-LLL – 8th level
Prerequisites	The presence of higher education of the second (master's) level in the specialty 181 "Food technologies", (educational and qualification level of a specialist in the specialties: 7.05170112 "Food technologies", 7.05170108 "Technologies of storage, preservation and processing of milk" and 7.05170104 "Technologies of storage, preservation and processing of meat"). The requirements for entrants are determined by the Rules of

	admission to the PhD Doctor of Philosophy educational and scientific program
Language(s) of instruction	Ukrainian, English
The term of validity of the educational program	Until 2026
Internet address of the permanent placement of the description of the educational program	https://science.snau.edu.ua/aspirantura/
2. The purpose of the educational program	
Training of highly qualified specialists in the field of food technology, capable of solving complex problems in the field of professional and/or research and innovation activities in the field of scientific and technical development of food production, by conducting research aimed at obtaining new scientific fundamental and applied knowledge, which involves deep rethinking of existing and creation of new holistic knowledge and/or professional practice.	
3. Characteristics of the educational program	
Subject area (field of knowledge, specialty)	Scientific research, educational and professional activities in the field 18 Production and technologies by specialty 181 Food technologies
Object of study	Theoretical and methodological, scientific and applied foundations of food technologies; principles of optimization of technological processes to ensure a high level of quality and safety of food products, environmental safety and resource conservation of production; patterns of innovative development of food enterprises and food technologies; methodological principles of scientific, scientific-technical and scientific-pedagogical activities.
Learning objectives	Formation of professional, research and educational competences necessary for innovative professional, research and educational activities and introduction of modern technologies in the specialty "Food technologies". Creation of conditions for recipients to achieve the ability to independently conduct scientific research at an internationally recognized level; supporting graduate students as highly qualified teachers, scientists and experts in food technology.
The main focus of the educational program	The educational and scientific program is formed as an optimal combination of academic and professional requirements, which allows to form in graduate students the ability to substantiate the solution of problems in the field of "Production and technologies" from the specialty "Food technologies", to plan and conduct fundamental and applied

	scientific research on the creation and improvement of food technologies products , using modern research methodology, critically analyze research projects, cooperate with other researchers, including working in an interdisciplinary team, transfer professional knowledge.
Theoretical content of the subject area	In-depth comprehensive study of fundamental and applied sciences of the specialty "Food technologies".
Features of the program	<p><i>Educational component of the program.</i> The educational component of the educational and scientific program covers a wide range of modern innovative vectors of the development of the theory and practice of food technologies, in particular nutrition technologies, which forms an updated theoretical and applied basis for conducting scientific research.</p> <p><i>Scientific component of the program .</i> The scientific component of the educational program involves carrying out own scientific research under the guidance of one or two academic supervisors, with the corresponding presentation of the obtained results in the form of a dissertation. This component of the program is not measured by ECTS credits, but is drawn up separately in the form of an individual plan of the graduate student's scientific work and is a component of the curriculum.</p> <p>The peculiarity of the scientific component of the educational-scientific program for the training of doctors of philosophy in the specialty 181 - Food technologies is that graduate students will be able to perform individual components of their own scientific research during practical classes in the disciplines of professional training.</p>
Methods, techniques and technologies	Mastering the methodology of scientific research and the technology of the experiment, adequate for solving the set scientific tasks in food technology.
4. Eligibility of graduates of the educational program to employment and further education	
Suitability for employment	Positions in research groups, scientific laboratories, specialized departments, departments in higher educational institutions, specialized institutes, commercial scientific and research organizations, enterprises and organizations of various types of activities and forms of ownership in managerial positions. The specialist is able to perform the specified professional work according to (DK 003:2010): 2310.2 teachers of universities and higher educational institutions; 2320 teachers of professional education and training for the fund;

	2320 teacher of a vocational and technical educational institution and other areas of activity by profession.
Further education	<p>Training for development and self-improvement in the scientific and professional spheres of activity in the specialty 181 Food technologies, as well as other related fields of scientific knowledge, training at the 10th (scientific) level of the NRC of Ukraine in the field 20 Agrarian sciences and food; educational programs, research grants and scholarships (including abroad) containing additional educational components. Various forms of lifelong learning (both in Ukraine and abroad) to improve qualifications and improve managerial and administrative, scientific, research, teaching or other activities.</p> <p>Training during professional activity to improve scientific and practical competencies.</p> <p>Unproblematic further training at the doctoral level is possible in areas close to the field of food technology.</p>
5. Teaching and assessment	
Approaches to teaching and learning	<p>Approaches to teaching and learning:</p> <ul style="list-style-type: none"> - active learning (interactive learning methods that provide a person-oriented approach and the development of systemic, creative and strategic thinking; joint learning in interdisciplinary groups; "inverted class" - learning by teaching (pedagogical practice); - learning through research (including participation in the implementation of budgetary and contractual research works, participation in research projects); <p>personalized learning (Personalized Learning): individual consultations with academic supervisors; elective professional disciplines).</p>
Evaluation system	<p><i>Educational component of the program.</i> The knowledge assessment system for the disciplines of the educational and scientific program consists of current and final control.</p> <p><i>Current control</i> of postgraduate students' knowledge is conducted in oral form (survey based on the results of the studied material).</p> <p><i>The final control</i> of knowledge in the form of an exam/credit is conducted in written form, followed by an oral interview.</p> <p>Within the disciplines that provide professional training, positive evaluations from the current and final control can be issued automatically, if the graduate student</p>

	<p>has prepared and published scientific articles in collections that are included in professional publications and/or publications that are included in international scientometric databases. The number of articles and their topics is agreed with the scientific supervisor.</p> <p>Scientific component of the program. Evaluation of the scientific activity of graduate students (recipients) is carried out on the basis of quantitative and qualitative indicators characterizing the preparation of scientific works, participation in conferences, preparation of individual parts of the dissertation in accordance with the approved individual plan of scientific work of the graduate student (recipient). Reports of graduate students (recipients), based on the results of the implementation of the individual plan, are approved annually at the meeting of the departments and the academic council of the faculty with a recommendation to continue (or stop) study at the graduate school.</p>
<p>The form for monitoring the success of a graduate student (acquirer)</p>	<p>Educational component of the program.</p> <p>The final control of the applicant's study success is carried out in the form:</p> <ul style="list-style-type: none"> - exam - based on the results of studying the mandatory disciplines of the educational program of the cycle of general scientific training (philosophy of science, management of scientific projects), the cycle of research training (registration of intellectual property rights, organization and methods of conducting training classes, organization of preparation of scientific publications, management of scientific projects), cycle of language training (foreign language for professional orientation, methods of preparing scientific works in a foreign language), as well as exams based on the results of studying the disciplines of professional training (modern achievements of food science, methods and organization of preparation and writing of a dissertation / management of laboratory activities); - assessment - based on the results of studying all other educational components provided by the curriculum. <p>Scientific component of the program.</p> <p>Scientific component ONP provides for the disciplines of cycles of general scientific training, special (professional), research training, language special (professional) and practical training (mandatory and optional) and pedagogical practice, which together with the educational part of the</p>

	<p>program and scientific research with the participation of the scientific supervisor, preparation and the public defense of the dissertation in the specialized academic council provides for obtaining the educational level "Doctor of Philosophy" in the specialty 181 "Food Technologies".</p>
<p>6. Software competencies</p>	
<p>Integral competence (IC)</p>	<p>The ability to solve complex problems in the field of professional and/or research and innovation activities in the field of food technology, which involves a deep rethinking of the existing and creation of new integral knowledge and/or professional practice.</p>
<p>General competences (GC)</p>	<p>GC1. Ability to abstract thinking, analysis and synthesis. GC2. Ability to work in an international context. GC3. Ability to solve complex problems in food technology based on systematic scientific and general cultural worldview from compliance principles professional ethics and academic integrity GC4. Ability to generate new ideas (creativity).</p>
<p>Special (professional) competences (PC)</p>	<p>PC 1. Ability perform original research, reach scientific results, what form new ones knowledge in sphere food technologies and/or tangential to them interdisciplinary directions PC2. Ability to initiate elaborate i implement complex innovative projects in the field of food productionproducts and tangential to her interdisciplinary projects, detect leadership under time of day implementation. PC3. Ability to apply modern methodologies, methods and tools experimental i theoretical research, digital technology, computer methods modeling, base data and other electronic resources, specialized software software in scientific and educational activity in sphere food technologies. PC4. The ability to critically analyze and evaluate modern state i trends development food technologies. PC5. Ability detect, put and to solve tasks research character, evaluate and provide quality performed works in food industry. PC6. The ability to carry out scientific and pedagogical activities in institutions higher education PC7. The ability to apply knowledge to establish patterns of losses when implementing a technological process, when conducting technological calculations; the ability to use in practice the knowledge of the principles of resource and energy saving in the development or improvement of food technology.</p>

	PC8. The ability to optimize processes in food technology and design the recipe composition of products using mathematical modeling and modern software.
7. Program learning outcomes	
	PLO1. Freely present and discuss with specialists and non-specialists the results of research, scientific and applied problems in the field of food technology in national and foreign languages, competently reflect the results of research in scientific publications in compliance with the principles of professional ethics and academic integrity.
	PLO2. Formulate and test hypotheses; use appropriate evidence to substantiate the conclusions, in particular, the results of theoretical analysis, experimental studies and mathematical and/or computer modeling, available literature data.
	PLO3. Use modern tools and technologies for searching, processing and analyzing information on food technology issues, in particular, statistical methods for analyzing data of a large volume and/or complex structure, specialized databases and information systems.
	PLO4. Plan, organize and perform experimental and/or theoretical research in the field of food technology using modern tools and equipment, information technologies and software.
	PLO5. Have advanced conceptual and methodological knowledge, demonstrate research skills in the field of food technology and at the border of subject areas, sufficient for conducting scientific and applied research with the aim of obtaining new knowledge and/or carrying out innovations at the level of modern world achievements in science and technology.
	PLO6. Develop and implement scientific and/or innovative engineering projects that provide an opportunity to solve significant scientific and applied problems in the field of food production, taking into account social, economic, environmental and legal aspects.
	PLO7. Critically analyze the results of one's own research in the field of food technologies and the results of other researchers in the context of the entire complex of modern knowledge regarding the investigated problem, ensure the protection of intellectual property.
	PLO8. Develop and teach special disciplines in food technology in institutions of higher education, provide educational and methodological support for the educational process.
	PLO9. Solve complex tasks related to effective storage and processing of food raw materials into food products in order to ensure their quality and safety, in accordance with current legislation.
	PLO10. To know and understand the philosophical methodology of scientific knowledge and psychological and pedagogical aspects of professional and scientific activity. Plan and implement the educational process based on modern methodological principles, demonstrate leadership and self-regulation skills based on self-knowledge.

	PLO11. Forecast, plan and implement in practice the production of food products, optimize the parameters of technological processes in accordance with the implementation of the principles of resource conservation and environmental safety.
	PLO12. Develop grant proposals, technical documentation and industry recommendations in the field of food production, formulate own author's conclusions, proposals and recommendations.
8. Forms of attestation of higher education applicants	
Forms of attestation of applicants of higher education	Attestation is carried out in the form of a public presentation of research results in the form of a Doctor of Philosophy dissertation, provided that the graduate student completes his individual study plan.
Requirements for qualifying work	The dissertation work of the Doctor of Philosophy involves the solution of an actual theoretical and/or experimental (practical) problem in the field of food technology and testifies to the ability of the recipient to conduct independent scientific research, formulate new complex ideas and substantiate them. The dissertation is the result of an independent scientific work of a graduate student, which has the status of an intellectual product with the rights of a manuscript and offers a solution to an actual scientific task in the field of food technology or on its border with other specialties.
Requirements public protection	The defense of the dissertation takes place in public at a one-time meeting of the academic council. A mandatory prerequisite for admission to the defense of a dissertation is the approval of research results and main conclusions at scientific conferences and their publication in specialized scientific publications, in accordance with current requirements.
9. Resource support for the implementation of the educational program	
Staff support	The scientific and pedagogical staff meets the requirements of the current legislation of Ukraine. Scientific-pedagogical workers involved in the implementation of the educational program are employees of Sumy National University of Science and Technology, professional development and training of scientific-pedagogical workers is provided at least once every five years. 100% of scientific and pedagogical workers involved in teaching disciplines have scientific degrees and scientific titles.
Materially-technical software	Provision of educational and scientific laboratories, including interdepartmental ones: laboratory of innovative technologies of food products, the laboratory of the Department of Food Technology on the basis of KGH, the

	educational and scientific laboratory of technological control of food products, the laboratory of food production equipment, the interdepartmental scientific and practical laboratory of chemical and microbiological research of food products, the educational and scientific laboratory of plant raw materials processing, the educational and scientific laboratory of craft technologies and gastronomic innovations
Informative-methodical software	Use of the fund of scientific libraries of IHE Sumy, National Library of Ukraine named after V.I. Vernadskyi, Internet resources and author's developments of scientific and pedagogical staff of the faculty and SNAU.
9. Academic mobility	
National credit mobility	National individual academic mobility is implemented within the framework of agreements on the establishment of scientific and educational relations to meet the needs of the development of education and science with the Kharkiv State University of Food and Trade, the National University of Food Technologies, and the Odesa National Academy of Food Technologies.
International credit mobility	It is possible on the basis of bilateral agreements between Sumy NAU and higher educational institutions of foreign partner countries, in particular, agreements on cooperation with the University of Applied Sciences Weinstein (Germany), Warsaw University of Natural Sciences (Poland), Xi'an University of Technology, Henan Institute of Science and Technology (China).
Foreign studies university graduates 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. Education of third-level higher education applicants is conducted on general terms with additional language training.

1.2. List of components of the educational and scientific program and their logical sequence

1.2.1. List of ONP components

No	Components of the educational program (study subjects, course	Keel the	Semesters								Summary form.
			1	2	3	4	5	6	7	8	

	program (study subjects, course projects (works), practices, qualification work)	the amount of loans	1	2	3	4	5	6	7	8	9	10	11	12	Control
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Mandatory components of general training															
MC. 1	Philosophy of science	4.0	h												exam
MC. 2	Modern information technologies in scientific activity	3.0	h												exam
MC. 3	Management of scientific projects and registration of intellectual property rights	3.0	h												and sleeping
MC. 4	Academic writing in a foreign language	3.0	h	h											test/ exam
MC. 5	Communications in the scientific environment	3.0		h											test
MC. 6	Organization of preparation of scientific publications and writing of dissertation	3.0		h											exam
MC. 7	Introduction to teaching and learning	3.0		h											exam
2. Mandatory components of professional training															
MC. 8	Methodology of conducting scientific research	3.0	h												test
MC. 9	Modern achievements of food science	3.0	h												exam
MC. 10	Modeling and planning of a scientific experiment	3.0		h											test
MC. 11	Modern instrumental research methods	4.0		h											exam
MC. 12	Methodology and technology of scientific information processing	3.0			h										test
MC. 13	Optimization of technical and technological objects of the processing industry	4.0			h										exam
MC. 14	Pedagogical practice	3.0				h									test
Together for all cycles of the main part of the plan		45.0													
2. Elective educational disciplines															
SC.1	Resource-saving and ecological technologies / Non-traditional food raw materials	5.0			h										test
SC.2	Heat and mass exchange processes and biochemical transformations in food systems / Innovation engineering	5.0			h										test
SC.3	Safety and quality of products and goods / Research work (seminars on the topic of the dissertation)	5.0			h										test

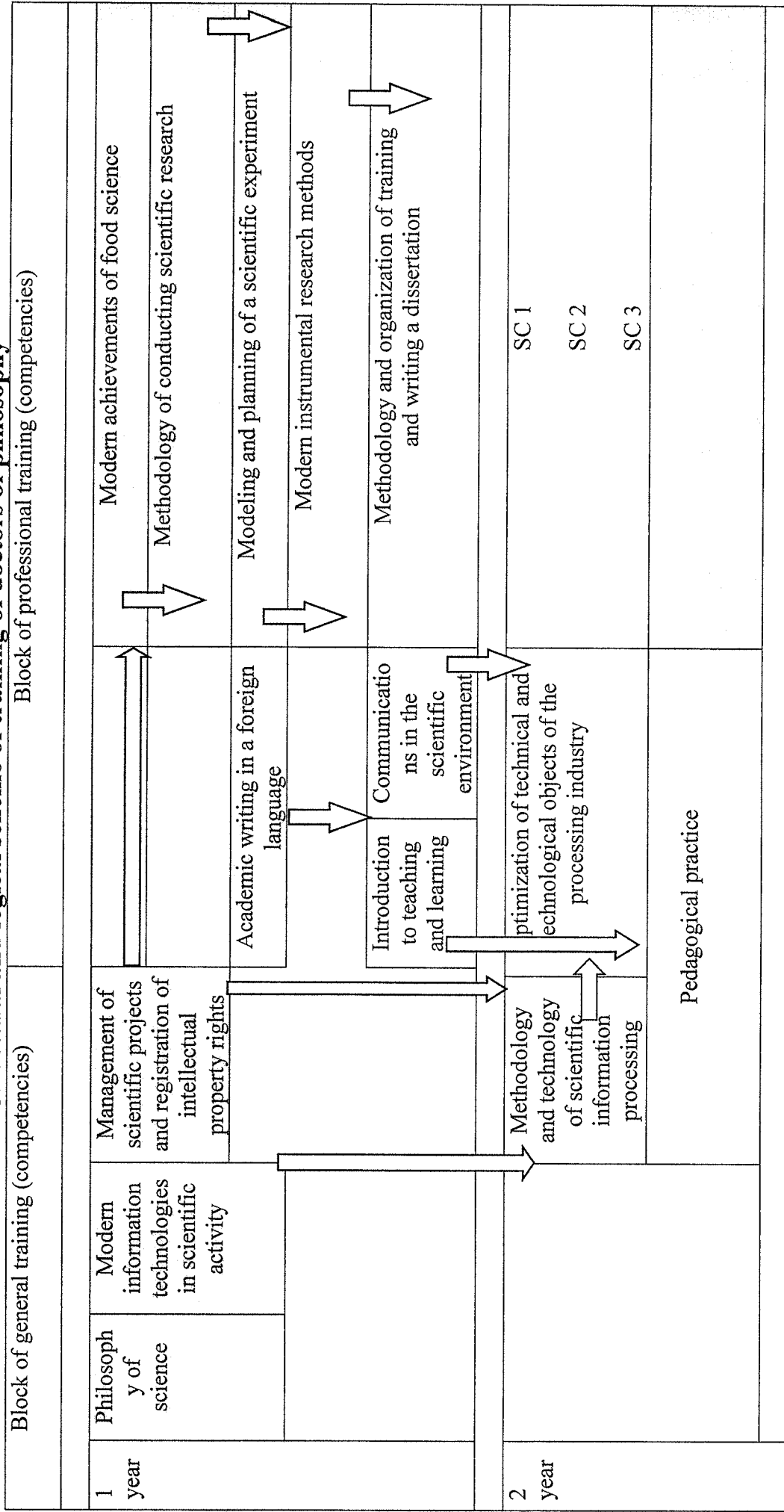
All according to the cycle of special (professional) training (at the choice of the graduate student)	15.0	
Together by selective disciplines	15.0	
Together according to the cycles of normative and variable parts	60.0	

1.2.2. Structural and logical scheme of OP

Applicants of higher education have the right to choose academic disciplines within the limits provided by the relevant educational program and work curriculum, in the amount of at least 25 percent of the total number of ECTS credits provided for this level of higher education.

2.2. Structural and logical scheme of training of doctors of philosophy

Block of professional training (competencies)



II. SCIENTIFIC COMPONENT OF THE EDUCATIONAL AND SCIENTIFIC PROGRAM

The scientific component of the educational-scientific program involves the post-graduate student conducting his own scientific research under the guidance of one or two academic supervisors and the preparation of his results in the form of a dissertation. The scientific component of the educational and scientific program is drawn up in the form of an individual plan of scientific work.

The dissertation for obtaining the degree of Doctor of Philosophy is an independent comprehensive study that offers a solution to a complex problem in the field of food technology, in particular food technology, which involves a deep rethinking of existing and the creation of new holistic knowledge and/or professional practice.

The dissertation should not contain academic plagiarism or falsification. The dissertation must be posted on the website of the institution of higher education (scientific institution). The volume of the main text of the dissertation should be 4.0-5.5 pages. The dissertation must meet other requirements established by law.

An integral part of the scientific component of the educational and scientific program is the preparation and publication of scientific articles (the number of which is stipulated by the relevant legal acts), monographs, scientific and methodological recommendations, theses of reports, speeches at scientific conferences, participation in scientific seminars, round tables, symposia

Participation in the execution of budget, farm contract and initiative research works (topics).

Implementation of research results in the production and educational process.

Topics of scientific research:

1. Creation of new and improvement of existing technologies of food products.
2. Research of raw materials of animal, vegetable, hydrobiont and other origin, semi-finished products, culinary products, drinking water, food and dietary supplements as subjects of technological processing into food products.
3. Scientific substantiation and development of innovative technologies of food products from raw materials of animal, vegetable, hydrobiont and other origin, semi-finished products and culinary products; food and dietary supplements.
4. Scientific substantiation, development and improvement of technologies of special and functional food products.
5. Establishing the mechanism and kinetic laws of chemical, physical and biochemical phenomena that occur during the processing of raw materials of animal, vegetable, hydrobiont and other origin, semi-finished products and culinary products, as well as drinking water.
6. Development of food rations for individual population groups taking into account age, gender, intensity and working conditions, environmental conditions, types of diseases and other factors affecting human health and working capacity.

7. Scientific substantiation and development of technologies and technological modes of production and storage of bakery products, confectionery and pasta products and food concentrates, which ensure energy resource conservation, environmental safety, increase of technical and technological level of production, reduction of losses, preservation and improvement of quality indicators of raw materials and finished products.

8. Establishing the mechanism and kinetic laws of chemical, physical and biochemical phenomena that occur during the production and storage of bakery products, confectionery and pasta products and food concentrates.

9. Scientific substantiation of new types of raw materials, development of a new assortment and production technology of bakery products, confectionery and pasta products and food concentrates of improved quality.

10. Study of regularities of functioning, modeling and optimization of technological processes of production of bakery products, confectionery and pasta products and food concentrates.

11. Research of properties and quality of raw materials and bakery products, confectionery and pasta products and food concentrates, improvement of assessment of their nutritional value.

12. Development of theoretical and practical foundations of promising methods and systems of quality and safety control of raw materials, semi-finished products and finished products at various stages of the technology of bakery products, confectionery and pasta products and food concentrates.

13. Research of meat, dairy and other products of animal husbandry, fish products and products from hydrobionts and other products of aquaculture as objects of technological processing into products of food, fodder, technical or other purposes.

14. Development and improvement of methodological principles and scientific methods of chemical composition and structure research, quality and safety assessment of meat, dairy, fish raw materials, aquaculture products, as well as finished meat, dairy, fish and aquatic products.

15. Improvement of the existing technological processes of processing meat, dairy, fish raw materials and aquaculture products in the direction of expanding the range and improving the quality and safety of finished products, reducing resource and energy costs for their production.

16. Scientific substantiation and development of innovative technologies for meat, dairy, fish and aquatic products.

17. Scientific substantiation and development of new methods of processing meat, dairy, fish raw materials and aquaculture products, as well as finished meat, dairy and fish products.

18. Scientific substantiation, development and improvement of technologies of meat, dairy and fish products for special, medical and preventive, herodietic or functional purposes, as well as pharmaceutical, chemical, protein and other preparations from meat, dairy, fish raw materials and aquaculture products.

19. Development of technology of dyes using secondary raw materials.

20. Development of technology of frozen semi-finished products using vegetable raw materials.

21. The use of vegetable raw materials in the production of alternative snack products.
22. Comprehensive processing of food production waste and their use as secondary raw materials in the production of food products.

III. CERTIFICATION OF ACQUISITIONERS

Attestation of persons who obtain the degree of doctor of philosophy is carried out by a permanent or one-time specialized academic council of a higher education institution or scientific institution accredited by the National Agency for Quality Assurance of Higher Education, on the basis of public defense of scientific achievements in the form of a dissertation. The recipient of the Doctor of Philosophy degree has the right to choose a specialized academic council.

A mandatory condition for admission to the defense is the successful completion of the graduate student's individual study plan.

The list of normative documents on which the standard of higher education is based

1. Law of Ukraine "On Higher Education" dated July 1, 2014 No. 1556-VII.
2. Law of Ukraine " On Basic Principles and Requirements for the Safety and Quality of Food Products" dated July 22, 2014 No. 1602-VII
3. Methodological recommendations for the development of higher education standards // Baluba I. et al. Approved by the higher education sector of the Scientific and Methodical Council. - 29 p.
4. Resolution of the Cabinet of Ministers of Ukraine dated November 23, 2011 No. 1341 "On approval of the national framework of qualifications".
<http://zakon4.rada.gov.ua/laws/show/1341-2011-p>
5. Resolution of the Cabinet of Ministers of Ukraine dated 04/29/15 No. 266 "On approval of the list of fields of knowledge and specialties for which higher education applicants are trained."
6. Order of the Ministry of Education and Science of Ukraine dated June 1, 2016 No. 600 "On the approval and implementation of Methodological recommendations for the development of higher education standards."
7. National Classifier of Ukraine : Classification of types of economic activity DK 009:2010, valid from 2012-01-01.
8. National Classifier of Ukraine : Classifier of Professions DK 003:2010, valid from 2010-11-01.
9. Fields of education and professional training 2013 (MSCO-O 2013): Companion guide to the International Standard Classification of Education 2011. – UNESCO Institute of Statistics, 2014. – Access mode: <http://www.uis.unesco.org/Library/Documents/isced-f-2013-fields-of-education-training-2014-rus.pdf>.
10. DSTU ISO 22000:2007 Food safety management systems. Requirements for any food chain organizations (ISO 22000:2005, IDT). - Kyiv: Derzhspozhivstandard of Ukraine, 2007. - 30 p.
11. DSTU ISO 22005:2009 Traceability in feed and food chains. General principles and basic requirements for system development and implementation (ISO 22005:2007, IDT). - Kyiv: Derzhspozhivstandard of Ukraine, 2010. - 6 p.
12. Regulation (EC) of the European Parliament and of the Council of 28.01.2002 No. 178/2002 establishing the general principles and requirements of food law, establishing the European Food Safety Authority and establishing procedures in matters related to food safety products.
13. Regulation (EC) of the European Parliament and the Council of April 29, 2004 No. 882/2004 "On official control measures used to ensure compliance with feed and food legislation, animal health and protection rules."
14. Regulation (EU) of the European Parliament and the Council of April 29, 2004 No. 852/2004 "On food hygiene".

15. Regulation (EU) of the European Parliament and the Council dated 04/29/2004 No. 854/2004 establishing special rules for the organization of official control over products of animal origin intended for human consumption.

Information sources

1. National Glossary 2014- http://ihed.org.ua/images/biblioteka/glossariy_Visha_osvita_2014_tempus-office.pdf.
2. Standards and recommendations for quality assurance in the European area of higher education, ESG 2015. http://www.britishcouncil.org.ua/sites/default/files/standards-and-guidelines_for_qa_in_the_ehea_2015.pdf
3. Development of educational programs: methodological recommendations - http://ihed.org.ua/images/biblioteka/rozroblennya_osv_program_2014_tempus-office.pdf.
4. Development of the quality assurance system of higher education in Ukraine: informational and analytical review - http://ihed.org.ua/images/biblioteka/Rozvitok_sisitemi_zabesp_yakosti_VO_UA_2015.pdf.
5. ISCED 2011 - <http://www.uis.unesco.org/education/documents/isced-2011-en.pdf>.
6. ISCED-F (MSKO-G) 2013 - <http://www.uis.unesco.org/Education/Documents/isced-fields-of-education-training-2013.pdf>.
7. TUNING (for familiarization with special (professional) competencies and examples of standards - http://core-project.eu/documents/Tuning%20G%20Formula_ting%20Degree%20PR4.pdf.
8. TUNING (for familiarization with special (professional) competencies and examples of standards - <http://www.unideusto.org/tuningeu/>.
9. National Classifier of Ukraine: "Profession Classifier" DK 003:2010 / / "Socinform" Edition. - Kyiv, 2010.

Table 1

The matrix of correspondence of the defined ONP competencies to the NRK descriptors

Classification to competences according to the NRK	Knowledge	Skill	Communication	Autonomy and responsibility
General competences				
GC1. Ability to abstract thinking, analysis and synthesis.	*		*	
GC2. Ability to work in an international context.	*	*	*	
GC3. The ability to solve complex problems in food technology based on a systematic scientific and general cultural worldview, in compliance with the principles of professional ethics and academic integrity.		*	*	*
GC4. The ability to generate new ideas (creativity).	*	*		*
Special (professional, subject) competences				
PC1. Ability perform original research, reach scientific results, what form new ones knowledge in sphere food technologies and/or tangential to them interdisciplinary directions	*	*		*
PC2. Ability to initiate elaborate i implement complex innovative projects in the field of food production products and tangential to her interdisciplinary projects, detect leadership under time of day implementation.		*	*	*
PC3. Ability to apply modern methodologies, methods and tools experimental i theoretical research, digital technology, computer methods modeling, base data and other electronic resources, specialized software software in scientific and educational activity in sphere food technologies.	*	*		
PC4. The ability to critically analyze and evaluate modern state i trends development food technologies.	*		*	*
PC5. Ability detect, put and to solve tasks research character, evaluate and provide quality performed	*	*		*

works in food industry.				
PC6. The ability to carry out scientific and pedagogical activities in institutions higher education		*	*	*
PC7. The ability to apply knowledge to establish patterns of losses when implementing a technological process, when conducting technological calculations; the ability to use in practice the knowledge of the principles of resource and energy saving in the development or improvement of food technology.	*	*		
PC8. The ability to optimize processes in food technology and design a recipe composition of products using mathematical modeling and modern software.	*	*		

Table 2

Correspondence matrix of learning outcomes and competencies defined by the ESP

Program results teaching	Integral competence	Competences															
		General competences						Special (professional) competences									
		1	2	3	4	1	2	3	4	5	6	7	8				
	IC 1																
PLO 1	+	+															
PLO 2	+													+			
PLO 3	+			+													
PLO 4	+																
PLO 5	+																
PLO 6	+							+									
PLO 7	+							+									
PLO 8	+																
PLO 9	+																
PLO 10	+																
PLO 11	+																
PLO 12	+																

Table 3

Matrix of provision of program learning outcomes (PLO) with relevant components educational and scientific program

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10	PLO 11	PLO 12
MC 1	+	+								+		
MC 2			+	+				+				+
MC 3	+					+	+					+
MC 4	+		+					+		+		+
MC 5	+					+	+		+		+	
MC 6	+	+		+			+					+
MC 7								+		+		
MC 8					+		+			+		
MC 9	+					+	+		+		+	
MC 10		+		+	+							
MC 11		+		+	+							
MC 12	+	+	+									+
MC 13			+						+		+	
MC 14								+		+		