PROJECT

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

SUMY NATIONAL AGRARIAN UNIVERSITY

EDUCATIONAL AND 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)

BRANCH OF KNOWLEDGE G Engineering, Manufacturing, and Construction
(code and name of the field of knowledge)

SPECIALTY G13 Food Technology
(code and name of specialty)

"APPROVED"
Academic Council of Sumy NAU
"_____"_____2025
(Protocol No. _____)
Chairman of the Academic Council_____Volodymyr LADYKA

The educational and professional program is implemented from "____"_____2025.
Rector_____**Igor KOVALENKO**
(order No. _____ dated "_____"_____2025)

Sumy 2025

LETTER OF AGREEMENT

EPP "Food Technologies" HED "Master"

Educational program guarantor: Cand. of Tech. Sci., Assoc. Prof., Technology of Nutrition Department	Maryna SAVCHENKO
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Cand. of Tech. Sci., Assoc. Prof., Head of the Technology of Nutrition Department	Oksana MELNYK
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Second (master's) level higher education student	Yaroslav DZIUBA

Reviewed and approved at an extended meeting of the Food Technology Department of student actives and stakeholders (protocol No. 3 dated 22.01.2025).

Approved at the meeting of the Academic Council of the Food Technology Faculty (protocol No.10 dated 12.03.2025).

Head of the Academic Council of
Food Technology Faculty,
Cand. of Sci., Assoc. Prof. Nataliia BOLHOVA

AGREE:

Deputy Head of the Education Quality Department,
licensing and accreditation, Cand. of Econ. Sci., Assoc. Prof. Olena RYBINA

Head of the educational department, Natalia KOLODNENKO
Cand. of Econ. Sci., Assoc. Prof.

Vice-Rector for Scientific,
Pedagogical and Educational Work of SNAU Margarita LYSHENKO

FOREWORD

The educational and professional program in the specialty G13 "Food Technologies" of the second (master's) level has been developed in accordance with the Law of Ukraine "On Higher Education" dated 01.07.2014, as amended, the Standard of Higher Education in the specialty 181 "Food Technologies" of the field of knowledge 18 "Production and Technologies" for the second (master's) level of higher education dated 22.10.2020 No. 1295, as amended in accordance with the Order of the Ministry of Education and Science of Ukraine dated 20.03.2023 No. 308, Resolutions of the Cabinet of Ministers of Ukraine dated 23.11.2011. "On Approval of the National Qualifications Framework" with amendments, "On Approval of the Licensing Conditions for the Conduct of Educational Activities of Educational Institutions" dated 12/30/2015 No. 1187 with amendments to the Concept of Educational Activities of Sumy National Agrarian University (approved by the Academic Council of the university, protocol No. 1 dated August 27, 2015) and the project group of the Faculty of Food Technologies of Sumy National Agrarian University.

1. Profile of the educational and professional program "Food Technologies" in the specialty G13 Food Technologies

1 - General information	
Full name of higher education institution and structural unit	Sumy National Agrarian University Faculty of Food Technology
Higher education degree	Master
Field of knowledge	G "Food technologies"
Specialty	G13 "Food technologies"
Forms of study	full-time and part-time
Educational qualification	Master in food technologies
Qualification in the diploma	Higher education degree - Master Specialty - Food technologies Educational and professional program - Food technologies
Type of diploma and scope of educational and professional program	Master's degree, single, 90 ECTS credits, study period 1 year 4 months
Availability of accreditation	Accredited NAQA in Higher Education No. 1937 Date of issue 06/30/2021 Valid until 07/01/2026.
Cycle/level	NQF of Ukraine - level 7, FQ-EHEA - second cycle, QF-LLL - level 7
Prerequisites	Possession of a bachelor's degree or specialist's educational qualification level, master's degree (in another specialty), without age restrictions
Language of instruction	Ukrainian, English
Duration of the educational and professional program	By 2026
Internet address for permanent posting of the description of the educational and professional program	https://surl.li/lrevxu
2 – Purpose of the educational and professional program	
Training of highly qualified, competitive specialists in production and technology with high social and personal qualities and the ability to conduct research and professionally solve professional tasks at enterprises of the industry and in restaurant establishments. The uniqueness of the program lies in its focus on research and development of waste-free and environmentally friendly technologies that not only contribute to the	

rational use of resources, but also ensure environmental protection, opening up new prospects for ensuring sustainable development in the field of food technologies.	
3 – Characteristics of the educational and professional program	
Subject area (field of knowledge, specialty, specialization (if any))	G Engineering, Manufacturing, and Construction G13 Food technology
Orientation of the educational and professional program	Educational and professional
Description of the subject area	The object of study and professional activity of the Master of Food Technology is: technological processes and food products. The objectives of training are to develop in higher education students the ability to solve complex tasks and problems of food technology, which involves conducting research and/or implementing innovations and is characterized by the uncertainty of conditions and requirements. The theoretical content of the subject area consists of scientific concepts, categories, principles, methods, food technologies. Methods, techniques and technologies: methods of ensuring the quality and safety of food products, methods of planning and conducting experimental research and processing their results, food production technologies, information and computer technologies. Tools and equipment: specialized laboratory and technological equipment and devices (in accordance with the requirements of the educational program), computer equipment and software.
The main focus of the educational and professional program and specialization	The EPP ensures the formation of skills in masters to solve industry problems, plan and conduct scientific research on the development and improvement of food and culinary production technologies, taking into account resource conservation and environmental safety.
Program features	Formation of professional competencies through theoretical, methodological, and applied issues of the food industry; Possession of skills in choosing research methods, modifying existing ones, and developing new ones, based on the tasks set; Ability to build models of systems and processes and use modern optimization programs in a specific field of knowledge;

	Ability to apply modern methods of experimental research, ability to plan an experiment and process the obtained results, analyze and interpret them, draw conclusions. Ability to formalize the obtained results in the form of reports, abstracts, articles, and presentations. Some experience in conducting patent research and drafting application materials for intellectual property objects; Possession of methods for organizing and controlling the appropriate level of quality and safety of food products, environmental safety, and resource conservation of technological production processes; Teaching skills and methods; Carrying out design and research work related to the study of technological processes, the implementation of new and improvement of existing technologies for the production of food and culinary products at food enterprises and restaurant establishments.
4 – Graduates' employability and further education	
Eligibility for employment	Scientific, educational, analytical, expert, advisory, and managerial activities in the field of food technology. Graduates can 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, engineering and design organizations and institutions; divisions of state and municipal administration bodies by the National Classifier of Ukraine "Classification of Professions" DK 003:2010: 1222.1 Chief specialists - managers and technical directors of production units in industry 1222.2 Supervisors (other managers) and foremen of production sections (subdivisions) in industry 2149 Other engineering professionals 2310 University and college teachers 2320 Secondary education teachers 2359 Other education professionals 2471 Quality Control Professionals 2482 Hotel and restaurant professionals 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 project technologist, chief administrator, and head of a research unit.

Academic rights of graduates	Continuing education at the third (educational and scientific) level of higher education. Acquiring additional qualifications in the adult education system.
5 – Teaching and assessment	
Teaching and learning	-student-centered learning, self-study, problem-oriented learning, individual-creative and competency-based, systemic-functional approach; -lectures, laboratory work, seminars, practical classes in small groups, independent work based on textbooks and notes, consultations with teachers, preparation of qualification work (on the recommendation of the head of the educational and professional program)
Evaluation system	The system of evaluating the achieved learning outcomes in the disciplines of the educational and professional program consists of summative and formative assessment. The assessment of the quality of mastering the educational and professional program includes a cumulative point-rating system, which provides for the evaluation of students for all types of classroom and extracurricular educational activities aimed at obtaining program learning outcomes: entrance, current, phased, modular, final control, exams, testing, credit for professional practice, final certification - public defense of the qualification work.
6 – Software competencies	
Integral Competence (IC)	Ability to solve research and/or innovation problems in the field of food technology.
General competence (GC)	GC 1. Ability to search, process and analyze information from various sources. GC 2. Ability to conduct research at the appropriate level. GC 3. Ability to generate new ideas (creativity). GC 4. Ability to act socially responsible and conscious. GC 5. Ability to work in an international context.
Special (professional, subject-specific competencies) (SC)	**Mandatory professional competencies** SC 1. Ability to select and apply specialized laboratory and technological equipment and devices, scientifically sound methods and software for conducting scientific research in the field of food technology SC 2. Ability to plan and carry out scientific research taking into account global trends in scientific and technological development of the industry SC 3. Ability to protect intellectual property in the field of food technology

	SC 4. Ability to develop programs for the effective functioning of food industry enterprises and/or restaurant establishments in accordance with industry development forecasts in the context of globalization. SC 5. Ability to present and discuss the results of scientific research and projects. SC 6. Ability to ensure the quality and safety of food products during the implementation of technological innovations at industry enterprises. **Additional professional competencies** SC 7. Ability to develop new generation food products, ability to innovative scientific activities, which contributes to the development of new knowledge in the field of food technology. SC 8. Ability to apply mathematical methods and models in applied research and optimize technological processes for the development of innovative technological solutions in food production. SC 9. 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. SC 10. Ability to develop and implement commercial, scientific, and technical projects in the field of food technology, taking into account technical, commercial, and environmental issues.
7 — Program Learning Outcomes (PLOs)	
Mandatory program learning outcomes PLOs 1. Search, systematize and analyze scientific and technical information from various sources to solve professional and scientific tasks in the field of food technology. PLOs 2. Make effective decisions, evaluate and compare alternatives in the field of food technology, including in uncertain situations and in the presence of risks, as well as in interdisciplinary contexts. PLOs 3. Apply special equipment, modern methods, and tools, including mathematical and computer modeling, to solve complex problems in food technology. PLOs 4. Apply statistical methods for processing experimental data in the field of food technology and use specialized software for processing experimental data. PLOs 5. Select and implement effective technologies, equipment, and rational production management methods into practical production activities, taking into account global trends in the development of food technologies. PLOs 6. Develop and implement short- and long-term development programs for industry enterprises, analyze and evaluate their effectiveness, environmental and social impacts.	

PLOs 7. Have specialized conceptual knowledge that includes modern scientific achievements in the field of food technology, and be able to clearly and unambiguously convey one's knowledge, conclusions, and reasoning to specialists and non-specialists. PLOs 8. To protect intellectual property in the field of food technology, perform relevant patent research, and prepare documents for obtaining patents for inventions and utility models. PLOs 9. Be fluent in state and foreign languages to discuss professional activities, research results, and innovations in the field of food technology. PLOs 10. Plan and carry out scientific research in the field of food technology, analyze their results, and justify conclusions. PLOs 11. Assess and eliminate risks and uncertainties when making technological and organizational decisions in production conditions to ensure the quality and safety of food products. **Additional program results** PLOs 12. Possess an information and communication base for the development and implementation of innovations, taking into account the basics of economics, marketing, and management. PLOs 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. PLOs 14. Apply knowledge and skills on waste-free technologies in the conditions of existing food industry enterprises and restaurant establishments, the use of new methods of preserving and storing food products, and the use of bioplastics for packaging raw materials, semi-finished products, and finished products. PLOs 15. Organize the work of food industry enterprises and restaurant establishments by the requirements of life safety, resource conservation, and environmental safety.	
Forms of certification of higher education applicants	Certification is carried out in the form of a public defense of the qualification work
Requirements for qualification work	The qualification work must be aimed at solving a complex, difficult task or problem in the field of food technology, which involves conducting research and/or implementing innovations and is characterized by uncertainty of conditions and requirements. The qualification work must not contain academic plagiarism, fabrication, falsification. The qualification work must be published on the official website of the higher education institution or its division, or in the repository of the higher education institution.
8 - Resource provision for program implementation	
Human resources	Availability of a support group, advanced training of scientific and pedagogical workers, ensuring compliance

	with the scientific degree or academic title of a scientific and pedagogical worker.
Logistics and technical support	Availability of a library, educational and scientific laboratories, classrooms, sports complex, food processing plant, computer classes, dormitory, and medical center.
Information and educational and methodological support	Availability of methodological support for practical, seminar, laboratory work, practice programs, tasks for independent work of students, and 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 Sumy National Agrarian University and the State Biotechnological University dated 04.07.2022.
	Agreement on cooperation in the scientific and educational sphere between Sumy National Agrarian University and the National University of Food Technologies dated 05/07/2024.
International credit mobility	Framework Agreement between Guizhou University, China, and Sumy National Agrarian University dated 25.11.2020 Agreement No. R-DOP.0161.6.19.2016 on cooperation between Sumy National Agrarian University and Wroclaw University of Economics
Education of foreign higher education applicants	According to the "Rules for Admission to Sumy NAU", education of higher education applicants from other countries of the world is carried out in Ukrainian and English.

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

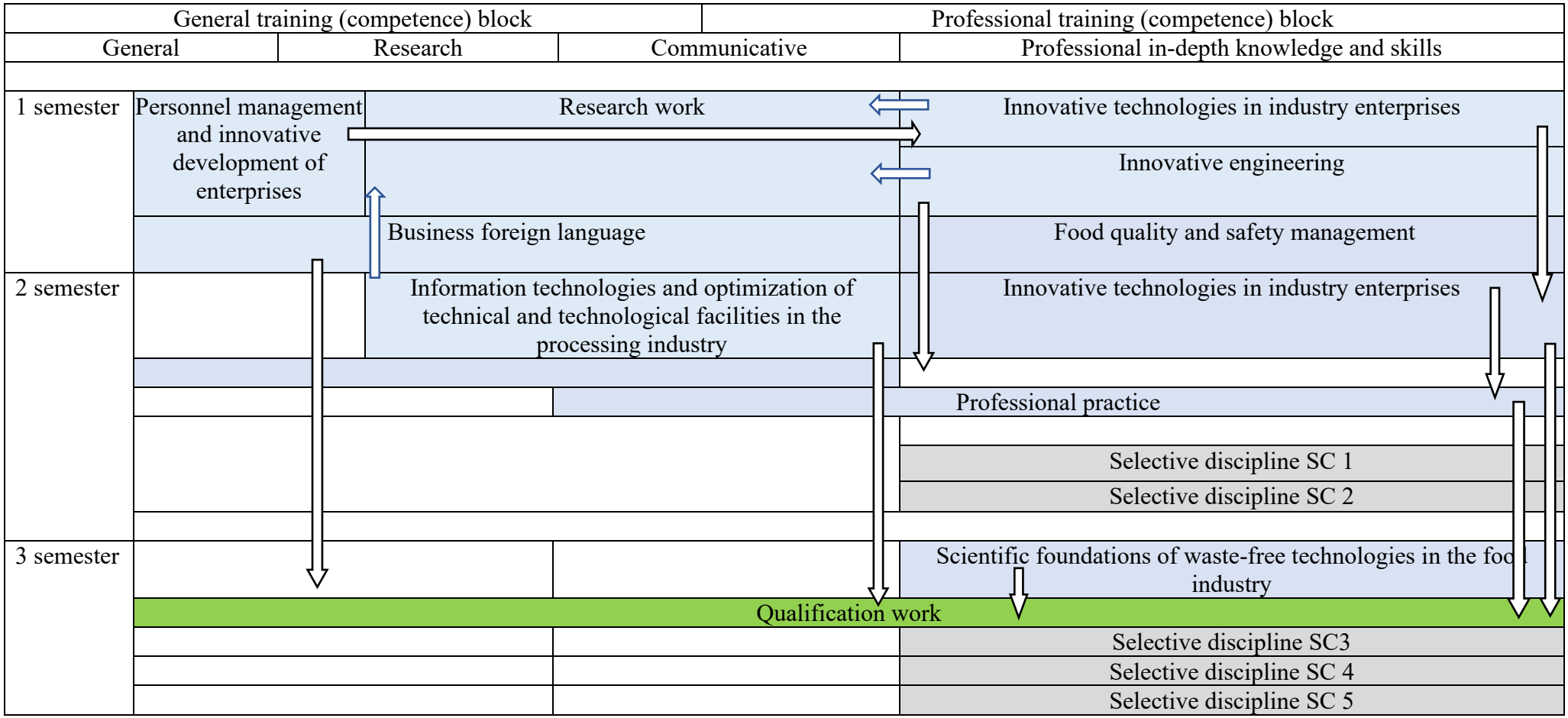
2.1. List of EPP components

Code n/a	Components of the educational and professional program (academic disciplines, practice, qualification work)	Number of credits	Final control form
1	2	3	4
Mandatory EPP components			
MC1	Business foreign language	5.0	Exam
MC2	Personnel management and innovative development of enterprises	5.0	Differential credit
MC3	Innovative engineering	5.0	Exam

MC4	Food quality and safety management	5.0	Exam
MC5	Professional practice	10.0	Differential credit
MC6	Qualification work	10.0	Public defense
MC7	Research work	5.0	Exam
MC8	Innovative technologies in industry enterprises	10.0	Exam
MC9	Scientific foundations of waste-free technologies in the food industry	5.0	Differential credit
MC10	Information technologies and optimization of technical and technological facilities in the processing industry	5.0	Exam
Total Mandatory components:		**65 ECTS credits**	
Selective EPP components*			
SC1	Selective discipline	5.0	Differential credit
SC2	Selective discipline	5.0	Differential credit
SC3	Selective discipline	5.0	Differential credit
SC4	Selective discipline	5.0	Differential credit
SC5	Selective discipline	5.0	Differential credit
Total volume of sample components:		**25 ECTS credits**	
TOTAL VOLUME OF OP		**90**ECTS credits	

*according to the faculty catalog

2.2. Structural and logical scheme of master's degree training



3. Form of certification Selection of higher education applicants

Certification 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 thesis and is completed by issuing a document of the established sample on awarding him a master's degree with the assignment of the qualification: master of food technologies. Certification is carried out openly and publicly in a meeting of the Examination Commission for the certification of higher education applicants.

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

	MC1	MC2	MC3	MC4	MC5	MC6	MC7	MC8	MC9	MC10
IC	+	+	+	+	+	+	+	+	+	+
GC1	+		+			+	+			+
GC2			+			+	+			
GC3			+		+	+	+	+	+	
GC4		+	+	+	+			+	+	
GC5	+		+				+	+	+	
SC1			+			+	+			+
SC2			+			+	+		+	
SC3							+			
SC4		+	+	+	+			+	+	
SC5	+		+	+	+	+	+	+	+	
SC6				+	+	+		+		
SC7			+			+		+	+	+
SC8							+			+
SC9			+	+	+			+	+	
SC10		+	+					+	+	

5. Matrix of ensuring program learning outcomes (PLN) by the corresponding components of the educational and professional program

	MC1	MC2	MC3	MC4	MC5	MC6	MC7	MC8	MC9	MC10
PLOs 1	+		+			+	+	+		+
PLOs 2		+		+	+	+		+		
PLOs 3					+	+				+
PLOs 4							+			+
PLOs 5		+	+		+	+		+	+	
PLOs 6				+	+			+	+	
PLOs 7	+		+		+	+		+		
PLOs 8							+			
PLOs 9	+					+				
PLOs 10			+			+	+			
PLOs 11				+	+	+				
PLOs 12		+	+			+				
PLOs 13			+			+		+		
PLOs 14									+	
PLOs 15					+			+	+	

List of regulatory documents on which the EPP is based

1. Standard of Higher Education of Ukraine: second (master's) level, field of knowledge 18 Production and Technology, specialty 181 Food Technology. Approved and put into effect by order of the Ministry of Education and Science of Ukraine dated 10/22/2020 No. 1295. https://mon.gov.ua/static-objects/mon/sites/1/vishcha-osvita/zatverdzeni%20standarty/2020/10/23/181-Kharchov.tekhn.mahistr.1.pdf

2. Law of Ukraine No. 3642-IX dated 04/23/2024 "On Amendments to Some Laws of Ukraine Regarding the Development of Individual Educational Trajectories and Improvement of the Educational Process"

3. "Regulations on the Organization of the Study of Free Choice Academic Disciplines" (enacted by the Order of the Acting Rector of Sumy NAU No. 158/od dated 02.04.2024)

4. Standard of Higher Education in the Specialty 181 "Food Technologies" of the Field 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 18.10. 2018. №1125 [Access mode: https://mon.gov.ua/storage/app/media/vishcha-osvita/zatverdzeni%20standarty/2021/11/29/181-Kharch.Tekhn-bakalavr-VO-zatv.Stand.01.11.pdf].

5. Law of Ukraine dated 01.07.2014 No. 1556-VII “On Higher Education” [Access mode: https://zakon.rada.gov.ua/laws/show/1556-18].

6. Law of Ukraine dated 05.09.2017 “On Education” – [Access mode: http://zakon5.rada.gov.ua/laws/show/2145-19].

7. Resolution of the Cabinet of Ministers of Ukraine dated 29.04.2015 No. 266 “On approval of the list of branches of knowledge and specialties in which higher education applicants are trained” [Access mode: http://zakon4.rada.gov.ua/laws/show/266- 2015-п]

8. Resolution of the Cabinet of Ministers of Ukraine dated 30.12.2015 No. 1187 “On approval of the Licensing Conditions for the Conduct of Educational Activities of Educational Institutions” [Access mode: http://zakon4.rada.gov.ua/laws/show/1187-2015-п/page].

9. Resolution of the Cabinet of Ministers of Ukraine dated 23.11.2011 No. 1341 “On Approval of the National Qualifications Framework” [Access mode: http://zakon4.rada.gov.ua/laws/show/1341-2011-п].

10. National Classifier of Ukraine: “Classifier of Professions DK 003:2010 [Access mode: https://zakon.rada.gov.ua/rada/show/va327609-10#Text];

11. Regulations on Educational Programs at Sumy National Agrarian University dated October 15, 2019 [Access mode: https://surl.li/cnrejp].

12. Standards and Recommendations for Quality Assurance in the European Higher Education Area (ESG) [Access mode: https://surl.li/fluvsc].

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

14. 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].

15. 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 of the Scientific and Methodological Council of the Ministry of Education and Science of Ukraine (minutes dated 29.03.2016 No. 3) [access mode: https://mon.gov.ua/storage/app/media/vishcha-osvita/rekomendatsii-1648.pdf].

16. Development of the system of quality assurance of higher education in Ukraine: information and analytical review [Access mode: https://surl.li/tfqnyf].

17.European Credit Transfer and Accumulation System: User Guide [Access mode: ec.europa.eu/education/tools/ects_en.htm].

18.EQF-LLL – European Qualifications Frameworkfor Lifelong Learning [Access mode: https://ec.europa.eu/ploteus/sites/eac-eqf/files/brochexp_en.pdf].

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

20.Rashkevych Yu.M. Bologna process and new paradigm of higher education: monograph / Yu.M. Rashkevych. – Lviv: Lviv Polytechnic Publishing House, 2014. – 168 p.

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