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)

FIELD OF KNOWLEDGE 18 "Production and Technology"
(code and name of the field of knowledge)

SPECIALTY 181 "Food Technology"
(code and name of specialty)

"APPROVED"
Academic Council of Sumy National Agrarian University
"_____" _____ 2024
(Protocol No. _____)
Chairman of the Academic Council_____ Volodymyr LADYKA

The educational and professional program has been put into effect since "____"_____2024.
Acting Rector_____ Volodymyr LADYKA
(order No. _____ dated "_____"_____2024)

Sumy 2024

LETTER OF AGREEMENT

Educational and professional program

Vice-Rector for Scientific and Pedagogical and Educational work, Dr. of Biological Sciences, Prof.	Ihor KOVALENKO
Head of the Educational Department	Natalia KOLODNENKO
Acting Head of the Department of Education Quality, Licensing and Accreditation	Olena RYBINA
Dean of the Faculty of Food Technology	Nataliia BOLHOVA
Head of the project group Guarantor of Educational and Professional programs, Dr. Of Technical Sciences, Prof.	Fedor PERTSEVOY
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Project team member, higher education student	Oleg SAVENKO

PREFACE

Developed by a working group consisting of:

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Oksana MELNYK, Candidate of Technical Sciences, Associate Professor, Head of the Technologies of Nutrition Department;

Nataliia BOLHOVA, Candidate of Agricultural Sciences, Associate Professor of the Department of Food Technology and Safety;

Vasyl TYSHCHENKO, Candidate of Agricultural Sciences, Associate Professor of the Department of Food Technology and Safety;

Oleg SAVENKO, higher education student.

Reviewers:

1. Oleksandr Pashchenko, director of the broiler chicken processing complex of Agro-Ros LLC.
2. Maryna Lykhatska, technologist of the Reshetylivka branch of TERRAFOOD LLC.

1. Profileeducational and professionalprogram "Food Technology" in specialty 181 "Food Technology"

1 - General information	
Full name of higher education institution and structural unit	Sumy National Agrarian University Faculty of Food Technology
Higher education degree and title of qualification in the original language	Higher education degree – master's degree. Qualification – Master in Food Technology
Official nameeducational and professionalprograms	Food technology
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 TITLE 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 or master's degree (educational and qualification level of a specialist)
Language of instruction	Ukrainian, English
Expiration dateeducational and professionalprograms	By 2025
Internet address of permanent posting of the descriptioneducational and professionalprograms	https://snau.edu.ua/2024-2/
2 – Purposeeducational and professionalprograms	
Training of highly qualified, competitive specialists in the field of 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.	
3 - Characteristicseducational and professionalprograms	
Subject area (field of knowledge, specialty, specialization (if any))	18 Production and technology 181 "Food Technology"
Orientation of the educational and professional programs	Educational and professional
Program objectives	Formation of special skills and knowledge that involve obtaining skills for scientific and research work of the student using a complex of research and innovation, organizational and technological and

	marketing methods, techniques and technologies to increase the efficiency of the functioning and development of food enterprises, restaurant establishments, and industry organizations.
The main focus educational and professional programs and specializations	EPP provides the formation of skills in masters to solve industry problems, plan and conduct scientific research on the development and improvement of food and culinary product technologies, analyze the results obtained, and implement developments at food enterprises.
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, 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, 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 – Suitability of graduates for employment and further education	
Employment eligibility	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, engineering and

	design organizations and institutions; divisions of state and municipal administration bodies in accordance with 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, head of a research unit.
Further training	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	-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 supervisor) educational and professional programs)
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, pFinal certification – public defense of the qualification work.
6 – Software competencies	
Integral Competence (IC)	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 uncertainty of conditions and requirements.
General competence (GC)	1. The ability to search, process and analyze information from various sources. 2. Ability to conduct research at the appropriate level. 3. The 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 competencies of the specialty (PC)	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. 2. The ability to plan and carry out scientific research taking into account global trends in scientific and technological development of the industry, to develop new generation food products, the ability to engage in innovative scientific activity that 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. 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. 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, to prepare scientific reports, and to prepare scientific publications.

	6. Ability to organize a system of quality control and safety 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 enterprises of the industry. 7. Ability to apply mathematical methods and models in applied research, optimize technological processes for the development of innovative technological solutions in food production. 8. 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.

7 — Program Learning Outcomes (PLOs)

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. ***The PLOs defined in this EPP are in addition to the higher education standard*** 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.	
8 - Resource provision for program implementation	
Staff support	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 scientificlaboratories;offices; sports complex; food processing plant; computer classes; dormitory; medical center.
Information and educational and methodological support	Availability of methodological support for practical, seminar, and laboratory work,internship programs,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 Sumy National Agrarian University and the State Biotechnological University dated 04.07.2022.
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

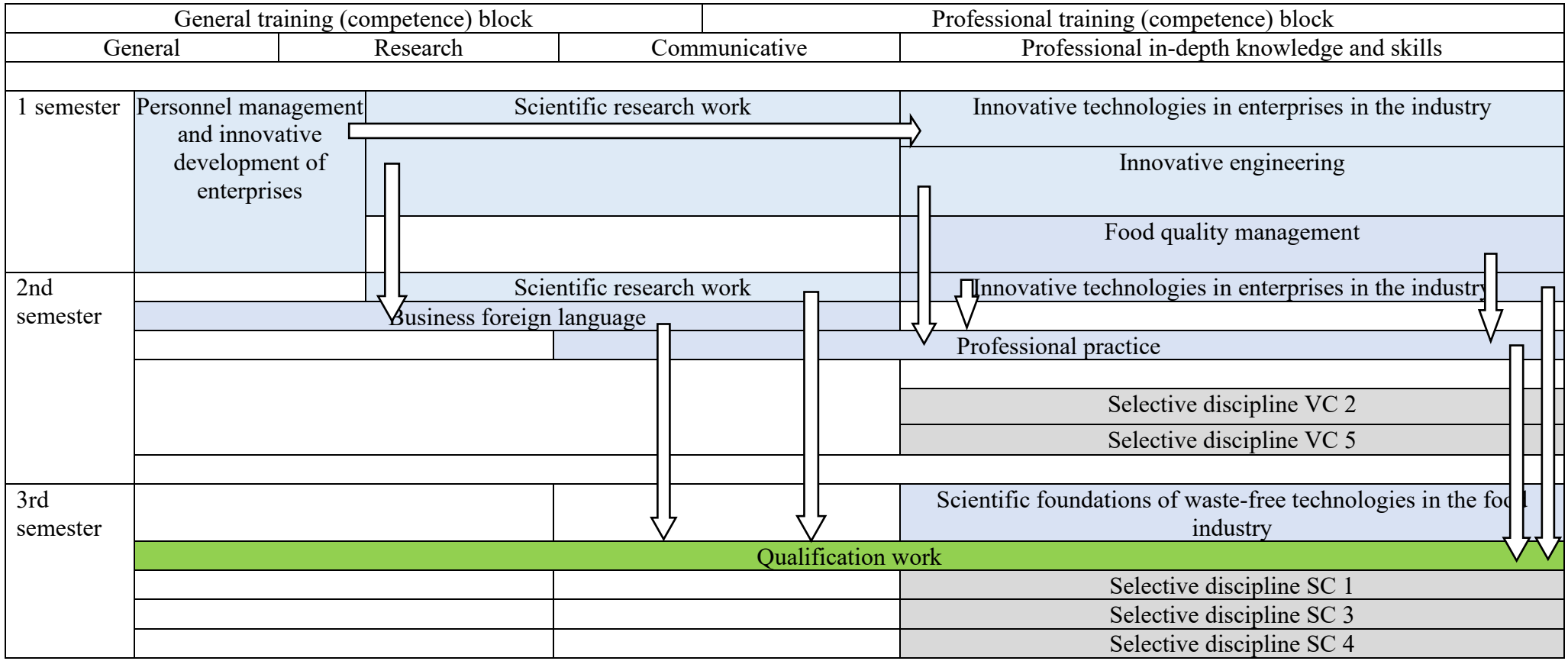
Education of foreign higher education applicants	According to the "Rules for Admission to Sumy NAU", education of higher education applicants from other countries of the world is carried out in Ukrainian and English..

2. List of components of the educational and professional program andtheirlogical sequence

2.1. List of components EPP

Code n/a	Components educational and professional programs (academic disciplines, practice, qualification work)	Number of credits	Final control form
1	2	3	4
Mandatory components EPP			
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	Food quality management	5,0	Exam
MC5	Professional practice	10,0	Diff. test
MC6	Qualification work (performance and defense)	10,0	Public defense of qualification work
	The uniqueness of EPP		
MC7	Research work	10,0	Exam
MC8	Innovative technologies in enterprises of the industry	10,0	Exam
MC9	Scientific foundations of waste-free technologies in the food industry	5,0	Diff. test
The total volum of mandatory components:		**65 ECTS credits**	
Selective components EPP			
Discipline of choice of higher education institution			
SC1	Selective conponent 1 from the list	5,0	Diff. test
Disciplines of scientific and professional direction at the choice of the applicant of higher education			
SC2	Selective discipline 3 from the list	5,0	Diff. test
SC3	Selective discipline 5 from the list	5,0	Diff. test
SC4	Selective discipline 2 from the list	5,0	Diff. test
SC5	Selective discipline 4 from the list	5,0	Diff. test
The total amount of sample components:		**25 ECTS credits**	
TOTAL VOLUME EPP		**90 ECTS credits**	

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



3. Certification form for 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 a defense of a qualifying master's 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 publiclyonmeeting of the Examination Commission for the certification of higher education applicants.

4. Matrix of correspondence of program competencies to components 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			+	+	+	+		+	+

5. Matrix of ensuring program learning outcomes (PLO) with corresponding componentseducational 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 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/].