PROJECT

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
SUMY NATIONAL AGRARIAN UNIVERSITY

EDUCATIONAL AND VOCATIONAL PROGRAM

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

HIGHER EDUCATION DEGREE____Master_____
(name of higher education degree)

DISCIPLINE 18 "Production and Technology"
(code and name of the field of knowledge)

SPECIALTY__181 "Food Technology"
(code and name of specialty)

EDUCATIONAL PROGRAM__"Food Technologies"
(name of educational program)

«APPROVED BY»
Rector of Sumy National Agrarian
University, Academician of NAASU,
Doctor of Science, Professor
_____ V.I. Ladyka
____ _____ 20__

Sumy 2023

LETTER OF AGREEMENT
Educational and professional program

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PREFACE

Developed by a working group consisting of:

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1. Profile of the educational program "Food Technologies" in the specialty 181 "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 and title of qualification in the original language	Higher education degree – master's degree. Qualification – Master in Food Technology
Official name of the educational program	Food technology
Type of diploma and scope of educational program	Master's degree, single, 90 ECTS credits, Study period 1 year 4 months
Availability of accreditation	Akreadytovanand
Cycle/level	HPK of Ukraine - level 7, FQ-EHEA - second cycle, QF-LLL - level 7
Prerequisites	Possession of a bachelor's or specialist's degree, master's degree in specialty 181 "Food Technology" or another specialty, without age restrictions
Language of instruction	Ukrainian
Duration of the educational program	By 2026
Internet address of permanent placement of the educational program description	https://fht.snau.edu.ua/metodichna-robota/osvitnij-riven-magistr/osvitni-programi/
2 – Purpose of the educational program	
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 – Characteristics of the educational program	
Subject area (field of knowledge, specialty, specialization (if any))	18 Production and technology 181 "Food Technology"
Orientation of the educational program	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.
Main focus of the educational program and specialization	The EP 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 product technologies, analyze the results obtained, and implement developments at food enterprises.
Program features	1. Formation of professional competencies through theoretical, methodological and applied issues of the food industry; 2. Possession of skills in choosing research methods, modifying existing ones and developing new ones, based on the tasks set; 3. Ability to build models of systems and processes, use modern optimization programs in a specific field of knowledge; 4. 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; 5. 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; 6. Teaching skills and methods; 7. 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	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 head of the educational program)
Evaluation	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 scientific and research practice. Completion of coursework/projects, final certification - public defense of qualification work or state qualification exam.
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. 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. 9. Ability to develop and implement commercial and scientific and technical projects in the field of food technology, taking into account technical, commercial, legal, occupational health and environmental issues.
7 — Program Learning Outcomes (PLOs)	
PLO 1. 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 to solve professional and scientific tasks in the field of food technology. PLO 2. Demonstrate initiative and ingenuity in 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 areas of food technology when conducting scientific research in educational, scientific and production laboratories.
PLO 4. Select 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 to solve existing problems and further develop the food industry, develop foreign economic ties between industry enterprises and restaurant establishments.
PLO 6. Develop programs for the development and functioning of enterprises in the industry, implement rational methods of managing production processes, plan the need for resources. Form and implement their own models of professional activity, taking into account the best practices in organizing scientific and production activities.
PLO 7. Have specialized knowledge and take into account in practical activities the trends of scientific and technical development of food science, choose the most promising and rational directions of scientific and technical activity, clearly convey one's own knowledge and conclusions to specialists and non-specialists.
PLO 8. Analyze and formalize the results of scientific and production tests in the form of scientific and technical documentation, scientific reports, security documents, articles, abstracts of scientific conferences.
PLO 9. Have practical skills in business professional communication in Ukrainian and one of the foreign languages, be able to logically formulate thoughts, present the results of one's own scientific and practical activities.
PLO 10. Plan and manage innovative scientific projects of fundamental and applied directions, 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 testing in the production conditions of actually operating enterprises.
PLO 11. Use professionally-oriented knowledge in the field of food quality and safety management to develop and implement HACCP and ISO quality and safety management systems.
PLO 12. Possess 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 defined for this EP in addition to the higher education standard
PLO 14. Apply knowledge and skills on issueswaste-free technologies in the conditions of existing food industry enterprises and restaurant establishments, the use of new methods of preserving and storing food products, the use of bioplastics for packaging raw materials, semi-finished products and finished products.

PLO 15. 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 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; laboratories: "Interdepartmental scientific and practical laboratory of chemical and microbiological research of food products", "Educational and scientific laboratory of innovative technologies and safety and quality of food products", "Educational and scientific laboratory of food production equipment", "Educational and scientific laboratory of designing new types of food products", "Educational laboratory of food technology" and offices; sports complex; food processing plant; computer classes; dormitory; medical center.
Information and educational and methodological support	Availability of methodological support for practical, seminar, laboratory work, tasks for independent work of students, questions for current and final control. Methodological support for the implementation of coursework. Provision of programs for internships. Availability of reading rooms, textbooks, study guides, and periodicals.
9 — Academic mobility	
National credit mobility	Agreement No. 1864 dated April 4, 2016 “On cooperation in the scientific and educational sphere between Sumy National Agrarian University and Kharkiv State University of Food and Trade for 2016-2020.
International credit mobility	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	It is possible to teach foreign citizens provided that the student has previously studied English.

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

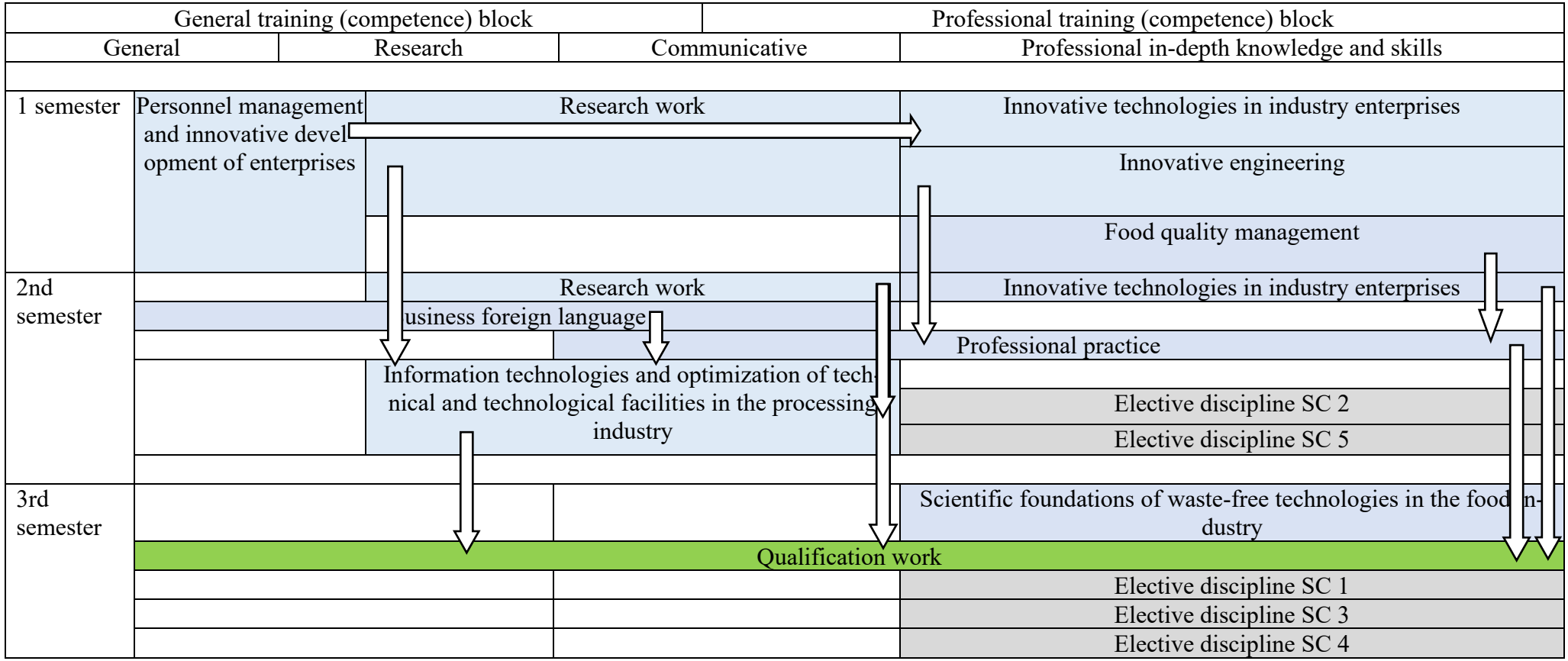
2.1. List of components of the EPP

Code n/a	Components of the educational program (courses, course projects (papers), internships, qualification work)	Number of credits	Final control form
1	2	3	4
Mandatory components of the EPP			
MC1	Business foreign language	5.0	Exam
MC2	Personnel management and innovative development of enterprises	5.0	Differential credit
MC3	Information technologies and optimization of technical and technological facilities in the processing industry	5.0	Exam
MC4	Innovative engineering	5.0	Exam
MC5	Food quality management	5.0	Exam
MC6	Professional practice	8.0	Differential credit
MC7	Qualification work (performance and defense)	7.0	Public defense of qualification work
	The uniqueness of the EPP		
MC8	Research work	10.0	Exam
MC9	Innovative technologies in industry enterprises	10.0	Exam
MC10	Scientific foundations of waste-free technologies in the food industry	5.0	Differential credit
Total required components:		**65 ECTS credits**	
Selective components of the OP			
Discipline of choice of higher education institution			
SC1	Elective discipline 1 from the list	5.0	Differential credit
Disciplines of scientific and professional orientation chosen by the student			
SC2	Elective discipline 3 from the list	5.0	
SC3	Elective discipline 5 from the list	5.0	
SC4	Elective discipline 2 from the list	5.0	
SC5	Elective discipline 4 from the list	5.0	
Total volume of sample components:		**25 ECTS credits**	
TOTAL VOLUME OF EDUCATION PROGRAMS		**90 ECTS credits**	

Selective components of the EPP*			
Discipline of choice of HEI 1 from the list			
SC1	Psychology of success	5.0	Differential credit
	Profit management		
	Starting a business in the food industry		
Disciplines of scientific and professional orientation chosen by the student			
SC2	Modern packaging materials and environments	5.0	Differential credit
	Fundamentals of bioplastics technology		
SC3	Innovative ingredients in food technology	5.0	Differential credit
	Biologically active components and health		
SC4	Low-temperature and extrusion technologies	5.0	Exam
	Technologies for the production of environmentally friendly and organic products		
SC5	Energy management and energy audit of processing and food enterprises	5.0	Exam
	Energy management and energy audit of processing plants and food industry		
Total volume of sample components:		**25 ECTS credits**	
TOTAL VOLUME OF EDUCATION PROGRAMS		**90 ECTS credits**	

Indicative list of selected components of the EPP

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 State Certification of Higher Education Applicants.

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

	MC1	MC2	MC3	MC4	MC5	MC6	MC7	MC8	MC9	MC10
IC	+	+	+	+	+	+	+	+	+	+
GC1	+		+				+	+	+	
GC2							+	+		
GC3		+				+	+	+	+	+
GC4		+			+		+			+
GC5	+		+				+	+		+
PC1				+			+	+		
PC2			+	+			+	+	+	+
PC3									+	+
PC4		+		+	+	+	+		+	+
PC5	+					+	+	+	+	
PC6					+	+	+		+	
PC7			+				+	+		+
PC8			+	+	+	+	+		+	+
PC9		+		+		+				

5. Matrix of ensuring program learning outcomes (PLO) by the corresponding components of the educational program

	MC1	MC2	MC3	MC4	MC5	MC6	MC7	MC8	MC9	MC10
PLO1	+		+		+		+	+		+
PLO2						+	+	+	+	
PLO3				+		+	+	+		+
PLO4			+				+		+	
PLO5						+	+	+		+
PLO6		+			+	+	+		+	
PLO7				+		+	+	+		+
PLO8	+				+		+	+	+	
PLO9	+						+		+	
PLO10			+	+			+	+	+	
PLO11					+	+	+		+	
PLO12		+					+			
PLO13		+					+		+	+
PLO14						+		+		+
PLO15				+		+	+		+	

List of regulatory documents on which the OPP is based

1. Law of Ukraine dated 01.07.2014 No. 1556-VII “On Higher Education” [Access mode:https://zakon.rada.gov.ua/laws/show/1556-18];
2. Law of Ukraine dated 05.09.2017 “On Education” – [Access mode:http://zakon5.rada.gov.ua/laws/show/2145-19];
3. Resolution of the Cabinet of Ministers of Ukraine dated April 29, 2015 No. 266 “On approval of the list of fields of knowledge and specialties in which higher education applicants are trained” [Access mode:http://zakon4.rada.gov.ua/laws/show/266-2015-п];
4. Resolution of the Cabinet of Ministers of Ukraine dated 30.12.2015 No. 1187 “On approval of the Licensing Conditions for the implementation of educational activities of educational institutions” [Access mode:http://zakon4.rada.gov.ua/laws/show/1187-2015-п/page]
5. 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];
6. National Classifier of Ukraine: "Classifier of Professions DK 003: 2010DK 003:2010 [Access mode:http://www.dk003.com];
7. TUNING (to familiarize yourself with special (professional) competencies and examples of standards [Access mode:http://www.unideusto.org/tuningeu/].
8. Regulations on educational programs at Sumy National Agrarian University dated October 15, 2019 [Access mode: https://snau.edu.ua/wpcontent/uploads/2019/12/%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%9E%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- %D0% A1%D0%9D%D0%90%D0%A3-1.pdf];
9. Standards and Recommendations for Quality Assurance in the European Higher Education Area (ESG) [Access mode: http://ihed.org.ua/images/doc/ 04_2016_ESG_2015.pdf;
10. - International Standard Classification of Education (ISCED 2011): UNESCO Institute for Statistics [Access mode: http://www.uis.unesco.org/education/ documents/isced2011-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-fieldsof-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 of the Scientific and Methodological Council of the Ministry of Education and Science of Ukraine (minutes dated 29.03.2016 No. 3);
13. - Development of educational programs. Methodological recommendations [Access

mode:http://ihed.org.ua/images/doc/04_2016_rozroblennya_osv_program_2014_tempusoffice.pdf];
14. - National Educational Glossary: Higher Education [Access mode: http://ihed.org.ua/images/doc/04_2016_glossariy_Visha_osvita_2014_tempus-office.pdf]; 15. - Development of the system of quality assurance of higher education in Ukraine: information-analytical review [Access mode: http://ihed.org.ua/images/doc/04_2016_Rozvitok_sisitemi_zabesp_yakosti_VO_UA_2015.pdf];
16. - European Credit Transfer and Accumulation System: User Guide [Access mode: http://ihed.org.ua/images/doc/04_2016_ECTS_Users _Guide2015_Ukrainian.pdf].
17. - EQF-LLL – European Qualifications Framework for Lifelong Learning [Access mode: https://ec.europa.eu/ploteus/sites/eac-eqf/files/brochexp_en.pdf];
18. - QF-EHEA – Qualification Framework of the European Higher Education Area [Access mode: http://www.ehea.info/article-details.aspx?ArticleId=67];
19. - Rashkevych Yu. M. Bologna Process and the New Paradigm of Higher Education [Access mode: file:///D:/Users/Dell/Downloads/BolonskyiProcessNewParadigm HE.pdf].