MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
RIVNE STATE UNIVERSITY FOR THE HUMANITIES

EDUCATION PROGRAM
"ENVIRONMENTAL STUDIES"
Third level of higher education

speciality	**101 Environmental Studies**
field of knowledge	**10 Sciences**
qualification	**Doctor of Philosophy in Ecology**

APPROVED BY ACADEMIC BOARD
Head of Academic Board
Prof. Postolovskyi R.M.
(Protocol number 2 as of February 23, 2023)

Education Program was enacted on April 1, 2023
Rector
Prof. Postolovskyi R.M.
(Order number 04-10-01 on February 24, 2023)

Rivne, 2023

EDUCATION PROGRAM APPROVAL
"101 Environmental Studies"

LEVEL OF HIGHER EDUCATION third

DEGREE Doctor of Philosophy

FIELD OF KNOWLEDGE 10 "Sciences"

SPECIALITY "101 Environmental studies" (Ecology)

QUALIFICATION Doctor of Philosophy in Ecology

Program developers:

1. Lysytsya A. V., Doctor of biological sciences, Professor _____

2. Portukhai O. I., PhD, Associate Professor _____

3. Sukhodolska I. L., PhD, Associate Professor _____

4. Basaraba I. V., graduate student _____

INTRODUCED

by Department of Ecology, Geography and Tourism

Protocol number _15_ as of November 8, 2022

Head of Department _____ Prof. Lyko D. V.

AGREED

by Pro-rector of Research _____ Prof. Daineha O. V.

PREFACE

The education program (EP) for the Degree of Doctor of Philosophy (PhD) for the specialty 101 “Environmental studies” (Ecology) was developed on the basis of the Law of Ukraine “On Higher Education” (edition 03.07.2020) Resolution of the Cabinet of Ministers of Ukraine No. 261 dated 23.03.2016 “On approval of the procedure for training applicants for higher education degrees of Doctor of Philosophy and Doctor of Science in higher education institutions (scientific institutions)” (as amended in accordance with Resolution of the Cabinet of Ministers No. 283 dated 04.03.2019); “Methodological recommendations for the development of higher education standards” approved by the order of the Ministry of Education and Science of Ukraine (as amended, dated April 30.04.2020, No. 584); Standard of higher education: third (educational and scientific) level, field of knowledge 10 - Sciences, specialty 101 “Environmental studies” (Ecology), approved and put into effect by the order of the Ministry of Education and Science of Ukraine dated 12.23.2021 No. 1421.

The EP defines requirements to the level of education, for those, who can study according to the EP, the list of the subjects and their logical way of learning, ECTS credits, needed for program completion, and also expected EP Doctor of Philosophy learning results.

The third level of higher education corresponds the eighth level of qualification level of National qualification rate providing theoretical and practical knowledge, skills and other competences, which are enough for new ideas production, solving complex problems in the professional area, methodological and pedagogical work, as well as scientific research with theoretical and practical value, using own experiments and modern scientific developments, organizational, scientific and pedagogical activities.

Normally the education term for PhD, speciality “101 Environmental studies” (Ecology) is four years. EP is developed by the project group members, speciality 101 Environmental studies, candidates and stakeholders.

Head of the project group (guarantor of the educational program)

Lysytsya A. V., Doctor of biological sciences, Professor of the Department of Ecology, Geography and tourism:

Program developers:

Portukhai O. I., PhD in Agriculture, Associate Professor, Professor of the Department of Ecology, Geography and tourism.

Sukhodolska I. L., PhD in Biology, Associate Professor of the Department of Ecology, Geography and tourism.

Basaraba I. V., graduate student.

Reviews of external stakeholders:

V. I. Dolzhenchuk – candidate of agricultural sciences, director of the Rivne branch of the state institution "Institute of Soil Protection of Ukraine" (review attached);

M. O. Klymenko – doctor of Agricultural Sciences, Professor, Head of the Department of Ecology, Technologies of Environmental Protection and Forestry of the National University of Water and Environmental Engineering (review attached);

V.I. Melnyk – doctor of biological sciences, professor, National Botanical Garden named after M.M. Grishko (review attached);

V. M. Dikovytskyi – director of the Nobel National Nature Park (review attached);

V. O. Pepko – candidate of agricultural sciences, manager of the Rivne regional organization of the NGO "Ukrainian Society of Hunters and Fishermen" (review attached);

O. V. Golovko – candidate of agricultural sciences, head of the scientific department of the Derman-Ostrozh National Park (review attached).

1. Profile of Program for specialty 101 “Environmental studies” (Ecology)

1 – General information	
Full name of higher education institution and subdivision	Rivne State University for the Humanities, Psychology and Natural Sciences faculty, Department of Ecology, Geography and Tourism.
Type of degree and qualification title in English	Degree: Doctor of Philosophy Specialty: 10 “Sciences” Qualification: Doctor of Philosophy in Ecology
The official title of the education program	Education program of the Doctor of philosophy in the field of 10 “Sciences”, 101 “Environmental studies” (Ecology)
Type of diploma and the volume of education program	PhD diploma, single; 4 academic years; 240 ECTS credits, including educational component - 60 ECTS; scientific component - 180 credits.
Accreditation	-
Cycle / Level	NRC Ukraine - 8th level, FQ-EHEA - third cycle, EQF-LLL – 8th level
Preconditions	The second level of higher education (master's degree diploma, specialist diploma)
Language(s) for teaching	Ukrainian language, English
Duration of the educational program	for the period of study
Internet address of the permanent posting of the description of the educational and scientific program	http://www.rshu.edu.ua/images/osvitni_programi/
2 – Aim of the education program	
Training of highly qualified competitive specialists in the field of Natural Sciences (Environmental studies), integrated into the European and world scientific and educational space, ensuring their acquisition of generic and subject specific competences for the development and implementation of research methodology and methods, creation new system-forming knowledge and advanced technologies, solving important scientific or applied issues solving important scientific or significant application problems; formation of the ability to carry out research activities, research projects, demonstrate innovation, a high degree of independence, academic and professional integrity, the ability to successfully carry out the educational process in higher education institutions, as well as the ability to continuous self-development and self-improvement. To form the ability to produce new ideas, to solve complex problems in a certain field of professional and/or research and innovation activity, to apply the methodology of scientific and pedagogical activity, as well as to conduct one's own	

scientific research, the results of which have scientific novelty, theoretical and practical significance. The goals of EP correspond to the mission and strategy of the university (http://www.rshu.edu.ua/images/rshu/stratehia_rozvitku_rshu.pdf).	
3 – Characteristics of the education program	
Subject area (field of education, specialty)	Field of Knowledge 10 Sciences Specialty 101"Environmental studies" (Ecology) *Object of study and activity:* structure and functional components of ecosystems of different levels and origins; anthropogenic impact on the environment and optimization of nature use. *Learning objectives:* acquiring the ability to produce new ideas, solve complex problems and carry out own scientific research in the field of ecology, environmental protection and nature management. *Theoretical content of the subject area includes:* concepts, principles of modern ecology and their use for environmental protection, balanced nature use and sustainable development. *Methods, techniques and technologies:* general-scientific, philosophical-ontological and natural-scientific methods of researching the structure and properties of ecological systems of various levels and origins, methods of collecting, processing and interpreting the results of ecological studies, in particular, computer modelling methods. *Tools and equipment:* equipment, facilities and software necessary for field, laboratory and remote studies of the structure and properties of ecological systems of various levels and origins.
Orientation of the education program	The educational-scientific program includes an academic orientation, it focuses on current specializations in the context of the specialty 101 "Environmental Studies" (Ecology), within which further scientific, scientific-research, scientific-pedagogical and applied professional activity is possible.
The main focus of the education program and specialization	Special education in the field of knowledge 10 Sciences specialty 101 "Environmental Studies" (Ecology). The training of doctors of philosophy combines educational components for fundamental and special training of highly qualified scientists who are able to solve complex problems in the field of natural sciences. Acquisition of the necessary research skills for a scientific career and skills of teaching the relevant disciplines for the specialty 101 "Environmental Studies" (Ecology).

	Keywords: ecology, population, groups, ecosystems, ecological factors, ecosystems stability, monitors system.
Specific features and differences of the program	Interdisciplinary and multi-specialty training of the professionals, using modern scientific and pedagogical technologies for solving experimental and practical tasks, practical ecological training, possible academic mobility and training abroad. The educational and scientific program is aimed at developing research potential, a set of general and professional competencies of applicants, provides for the preparation of a Ph.D. taking into account the characteristics of the region. There are more than 30 institutions of higher education here, the Rivne branch of the state institution "Institute of Soil Protection of Ukraine", several objects of the nature protection fund (reserves, national parks) in which graduates of the post-graduate studies of RDSU from previous years work. Therefore, the need for qualified scientific and scientific-pedagogical personnel determines the expediency of EP. The peculiarity of EP is the involvement of PhD degree holders in the work in environment protection organizations, national parks, conservations, regional scientific institutions. Postgraduate trainings have been held in RSUH since 2004. EP is developed including Doctors of Philosophy experiences in specialty of Environmental Studies (Ecology) at universities and educational establishments of Ukraine, national scientific institutions and scientists' training.
4 – Eligibility of postgraduates for employment and their further training	
Eligibility for employment	Employment is possible in research institutions, institutions of higher education, other institutions and organizations that carry out research and/or training of specialists in the field of ecology, environmental protection and rational use of nature, as well as develop environmental policy and carry out environmental management. It is a job in the specialty at institutions of higher education, scientific institutions (organizations), etc. in positions relating to the current edition of the National Classifier of Ukraine: Classification of occupations (CO 003: 2010 with changes approved by the order of the Ministry of Economic Development and Trade of Ukraine dated August 18, 2020 No 1574)) and International Standard Classification of Occupations 2008 (ISCO-08): 2211.2 Environmentalist, expert

	2310.1 Professor; Associate Professor 2310.2 Assistant; Lecturer; 2359.1 Junior researcher; Researcher.
Academic rights of graduates	Obtaining a Doctor of Science degree and additional qualifications in the adult education system.
5 – Teaching and assessment	
Teaching and learning	Problem-solving teaching style focused on developing skills for generating old and new ideas and receiving knowledge independently, self-developing. Lectures, practical classes; learning by teaching - practice; self-study learning - independent work, information processing in the network; training through research - project work, preparation of dissertation work; personalized learning - individual consultations with supervisors. Writing scientific articles, which are represented and discussed with supervisors and postgraduate students. Preparing dissertation.
Assessment	Exams, tests (seminars, practical and laboratory work, presentations, projects) scientific reports, publishing articles, public defence of the dissertation.
6 – Program competences	
Integral competence	Ability to solve complex problems in the field of environmental studies and balanced usage of natural resources / or research-innovative educational activity, which implies a deep rethinking of the functioning and creation of new holistic knowledge and / or professional practice, as well as conducting of own scientific research, the results of which should be scientific novelty, theoretical and practical value.
General competences (GC)	GC 01. Ability to work in an international context. GC 02. The ability to solve complex problems on the basis of a systematic scientific and general cultural worldview in compliance with the principles of professional ethics and academic integrity. GC 03. Ability to abstract thinking, analysis and synthesis. GC 04. Ability to conduct research at an appropriate level. GC 05. Ability to work autonomously. GC 06. The ability to apply acquired competences in practical work.
Special (professional) competencies (PC)	PC 01. The ability to perform original research, to achieve scientific results that create new knowledge in the field of ecology and interdisciplinary areas related to it, to evaluate and ensure the quality of the performed research. PC 02. The ability to initiate, develop and implement

	complex innovative projects in the field of ecology and related interdisciplinary projects, leadership during their implementation. PC 03. The ability to use modern tools, electronic information resources, specialized software in scientific and educational activities, in particular for modelling processes and making optimal decisions in the field of ecology, nature protection and rational nature management. PC 04. The ability to carry out scientific and pedagogical activities in higher education. PC 05. The ability to learn concepts, theoretical and practical problems, the history of development and the current state of scientific knowledge in the field of ecology, environmental protection and optimization of nature use. PC 06. The ability to present the results of one's own scientific and scientific and technical activities, including using scientific publications. PC 07. The ability to integrate knowledge from other disciplines and apply a systematic approach to solving scientific and applied environmental problems and conducting research. PC 08. The ability to argue the choice of a method for solving a specialized environmental problem, critically evaluate the results obtained and defend the decisions made.
7 – Program learning outcomes (PLO)	
PLO 01. Conceptual principles and methodology of natural sciences should be deeply understood, hypotheses should be formulated and verified, evidence should be used to justify conclusions, in particular, the results of theoretical analysis, experimental studies and mathematical and/or computer modelling for the purpose of solving significant scientific and scientific-applied problems ecology PLO 02. To plan and carry out experimental and/or theoretical research in ecology, environmental protection and optimization of nature use using modern tools, to critically analyze the results of own research and the results of other researchers in the context of the entire complex of modern knowledge regarding the problem under study. PLO 03. Present and discuss research results, scientific and applied problems in ecology, environmental protection and optimization of nature use freely in national and foreign languages; to observe the norms of academic ethics, to display the results of research in scientific publications in leading domestic and international scientific publications in a qualified manner. PLO 04. Develop and teach special educational disciplines related to the subject	

area of ecology in institutions of higher education.
PLO 05. To develop and implement scientific and/or innovative engineering projects that make it possible to rethink existing and create new holistic knowledge and/or professional practice taking into account social, ethical, economic, environmental and legal aspects.
PLO 06. Modern search tools and technologies for processing and analyzing information on ecological problems and related issues should be used, in particular, statistical methods of analyzing data of a large volume and/or complex structure, specialized databases and information systems.
PLO 07. Have modern conceptual knowledge and a high methodological level in the field of ecology and at the border of subject areas, as well as have research skills sufficient to conduct scientific and applied research at the level of the latest world achievements.
PLO 08. Have modern conceptual knowledge and a high methodological level in the field of ecology and at the border of subject areas, as well as have research skills sufficient to conduct scientific and applied research at the level of the latest world achievements.
PLO 09. Demonstrate leadership qualities, have responsibility and complete autonomy during the implementation of complex scientific projects. The ability to have a responsible attitude to the work performed, and to achieve the set goal in compliance with the requirements of professional ethics.
PLO 10. The right of intellectual property to realize the results of scientific and scientific and technical activities within the framework of scientific ethics.
PLO 11. Know and understand scientific approaches to substantiating the resilience of ecosystems to various types of anthropogenic impact on them. Tendencies to determine the dynamics of changes in ecosystems during environmental protection measures.

8 – Resource provision the program implementation	
Specific characteristics of staffing	100% of the teaching staff involved in the teaching of academic subjects of the educational and scientific program has a scientific degree and / or academic rank in the corresponding or related specialty. The head of the project team, the project team members and the teaching staff that provide the implementation of the EP satisfy the requirements set out in the Licensing Terms of Educational Activities of Educational Institutions (Item 30 of the Licensing Terms of Educational Activities from 30.12.2015 No1187, (with corrections, according to Order of The Cabinet of Ministers of Ukraine No 347 as of 10.05.2018). All the staff in specialty 101 Environmental Studies (Ecology) periodically improve the skills in scientific, research and educational establishments of Ukraine and abroad.

Characteristics of technical support	Material support satisfy the requirements set out in the Licensing Terms of Educational Activities of Educational Institutions (corresponds Licensing Terms of Educational Activities of Educational Institutions in chosen specialty – 101 Environmental Studies (Ecology). Providing educational process to postgraduates by the Psychology and Natural Sciences faculty material support is used, including laboratories of the NAAS epizootology research station. It's a branch of ecology, geography and tourism department, scientific and technical base of conservations and national parks in the region, Rivne branch of state establishment Rivne branch of a state institution "Institute of Soil Protection of Ukraine".
Informational, educational and methodological provision	The use of the virtual educational environment at the RSUH and the author's developments of the teaching staff. The official website http://www.rshu.edu.ua; wi-fi, scientific library, reading halls, free access to foreign base of periodicals Scopus, Web of Science etc. Checking up plagiarism is made by Strike Plagiarism. Library resources are available through the University website: http://www.rshu.edu.ua; didactic materials for individual work; practice programs; 100% support with special learning and methodological materials.
9 – Academic mobility	
National Credit Mobility	Based on the bilateral agreements between the Rivne State University for the Humanities and other higher educational institutions and scientific institutions of Ukraine. (http://www.rshu.edu.ua/images/navch/pol_akadem_mob_2019.pdf).
International Credit Mobility	Based on the "Regulations on the Procedure for the implementation of the right to academic mobility at the Rivne State University for the Humanities" (http://www.rshu.edu.ua/images/navch/pol_akadem_mob_2019.pdf) and bilateral agreements between the Rivne State University for the Humanities and other higher educational institutions and scientific institutions of Ukraine.
Training of foreign applicants to higher education	Possible

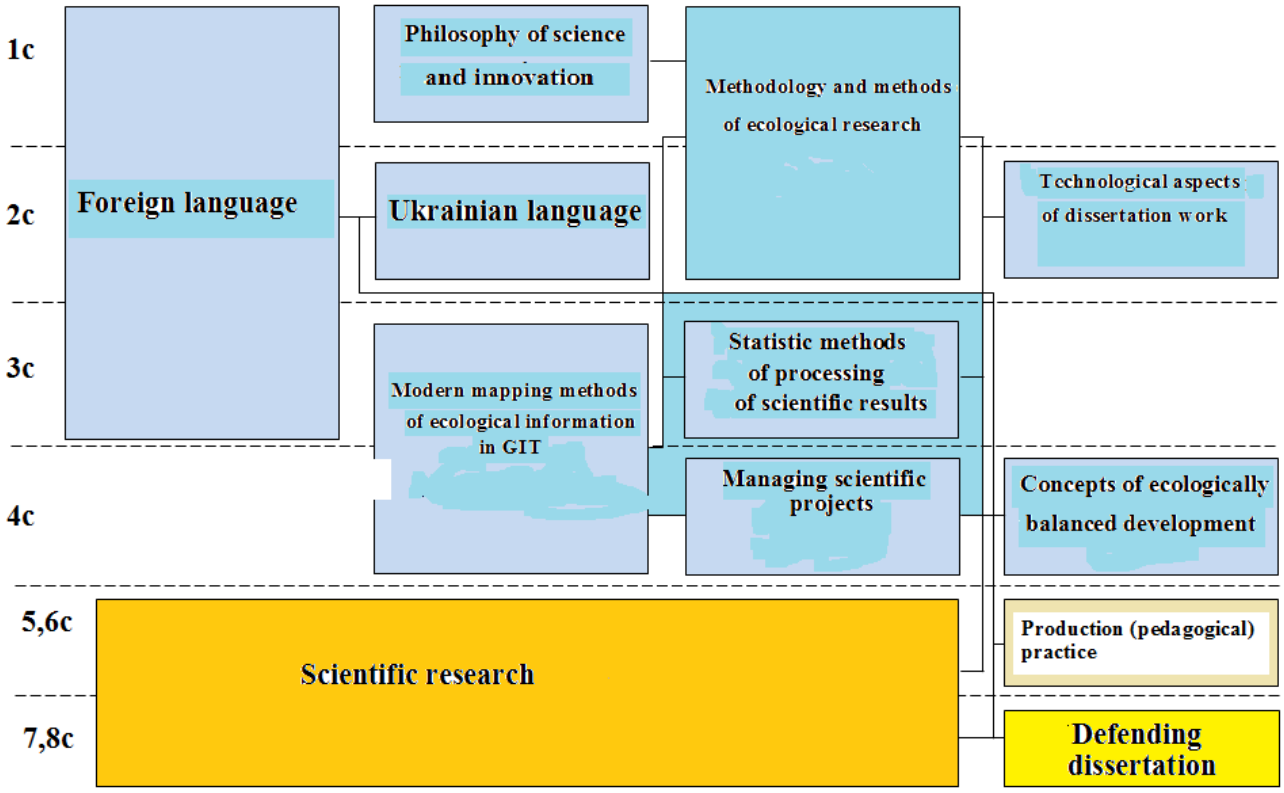
2. List of components of the education program and their logical consistency

2.1. List of components of EP "Environmental Studies"

Field code	Components of the education program (educational disciplines, course projects (work) of practice, thesis)	Credits	Form of the final control
1	**2**	**3**	**4**
1. Normative component of the EP			
1.1. Generic training cycle			
MC 01	Philosophy of science and innovation	4,0	Exam
MC 02	Ukrainian language (linguistic research tools)	3,0	Credit test
MC 03	Foreign language (academic and professional-oriented communication)	6,0	Credit test (2), exam
MC 04	Technological aspects of work with the dissertation	4,0	Exam
MC 05	Management of scientific projects	3,0	Credit test
Total		**20,0**	
1.2. Training cycle			
Mandatory components of the EP (MC)			
MC 06	Modern mapping methods of ecological information in GIT	5,0	Credit test, exam
MC 07	Methodology and methods of ecological research	5,0	Credit test, exam
MC 08	Statistical methods of processing the results of scientific research	3,0	Credit test
MC 09	Concepts of ecologically balanced development	3,0	Credit test
MC 10	Production (pedagogical) practice	9,0	Credit test
Total		**25,0**	
Total for the normative components		**45,0**	
Selected components (SC) of the EP (not less than 25%)			
SC 01	Experiment theory in ecology/	3,0	Credit test
SC 02	Reforming of the moved natural ecological systems /		
SC 03	Choose (discipline from another level EP 101 Environmental Studies (Ecology) or another EP)		
SC 04	Radiobiology and radioecology complex biological systems /	3,0	Credit test
SC 05	Population ecology of the plants /		
SC 06	Choose		
SC 07	Water ecosystem groups /	3,0	Credit test
SC 08	Ecosystemology /		
SC 09	Choose		
SC 10	Scientific seminar /	3,0	Credit test
SC 11	Monitoring and inventorying of biological diversity /		
SC 12	Choose		

SC 13	Physico-chemical methods of analysis of the state of the environment /	3,0	Credit test
SC 14	Limnology /		
SC 15	Choose		
Total volume of selected components		**15,0**	
Total volume of educational and scientific program		**60,0** credits	

2.2 Structural-logical scheme of the EP, specialty 101 “Environmental Studies” (Ecology)



3. Form of assessment of applicants for higher education
Intermediate and final assessment

Attestation of Doctor of Philosophy degree holders is carried out in the form of a public dissertation defence.

The form of attestation of the educational component is the completion by the applicant of the curriculum of the educational and scientific program in its entirety.

Dissertation requirements for obtaining the degree of Doctor of Philosophy

The dissertation for obtaining the degree of Doctor of Philosophy is an independent comprehensive study that proposes a solution to a specific scientific problem in the field of ecology or on its border with other specialties, the results of which constitute an original contribution to the development of ecology and are published in scientific publications in peer-reviewed scientific publications. The dissertation should not contain academic plagiarism, falsification, or fabrication.

The dissertation must be published on the official website of the institution of higher education or its division, or in the repository of the institution of higher education (scientific institution).

Attestation of higher education holders of the degree of Doctor of Philosophy is carried out by an academic council formed for a one-time defence on the basis of a public defence of scientific achievements in the form of a dissertation. The state of readiness of a graduate student's thesis for defence is determined by the supervisor (or a consensus decision of two supervisors).

The academic council of a higher educational institution has the right to submit to the National Agency for Quality Assurance of Higher Education documents for the accreditation of a specialized academic council formed for a one-time defence, or to apply to another higher educational institution (scientific institution) where a permanent specialized academic council operates council from the relevant specialty.

4. Matrix of compliance of the program competencies with components of the educational and scientific program

	MC 01	MC 02	MC 03	MC 04	MC 05	MC 06	MC 07	MC 08	MC 09	MC 10	SC 01	SC 02	SC 03 Choice	SC 04	SC 05	SC 06 Choice	SC 07	SC 08	SC 09 Choice	SC 10	SC 11	SC 12 Choice	SC 13	SC 14	SC 15 Choice
GC 1	+		+		+		+								+		+								
GC 2	+	+		+	+		+		+		+	+			+		+	+		+			+		
GC 3	+	+			+			+	+		+				+			+		+	+				
GC 4				+		+	+	+			+			+			+	+			+		+	+	
GC 5						+	+			+							+			+	+			+	
GC 6		+	+		+	+	+			+		+		+	+		+	+		+				+	
PC 1				+	+	+	+	+	+		+			+	+		+	+		+	+		+	+	
PC 2	+			+	+							+			+		+								
PC 3				+	+	+	+	+			+			+	+		+	+			+				
PC 4		+	+						+	+							+	+		+			+		
PC 5	+								+	+								+		+			+		
PC 6		+	+	+				+												+					
PC 7	+			+	+		+		+		+	+			+		+			+	+		+	+	
PC 8	+			+	+		+		+		+	+		+	+		+			+				+	

\+ – acquired competency;
MC – EP mandatory components;
SC – EP selective components
GC – EP general competences;
PC – EP professional competences;
Choice – educational component of free choice from the base of selective HEE disciplines

5. Matrix providing program learning outcomes (PLO) for relevant education program components

	MC 01	MC 02	MC 03	MC 04	MC 05	MC 06	MC 07	MC 08	MC 09	MC 10	SC 01	SC 02	SC 03 Choice	SC 04	SC 05	SC 06 Choice	SC 07	SC 08	SC 09 Choice	SC 10	SC 11	SC 12 Choice	SC 13	SC 14	SC 15 Choice
PLO 1	+						+		+								+	+		+			+		
PLO 2				+	+	+		+	+		+	+		+	+			+		+	+			+	
PLO 3		+	+	+			+			+							+			+				+	
PLO 4		+	+				+			+							+						+		
PLO 5	+	+			+		+		+		+	+		+	+										
PLO 6			+	+		+	+	+		+							+	+		+	+				
PLO 7							+		+	+	+						+	+		+			+		
PLO 8						+	+		+								+						+	+	
PLO 9	+			+	+					+		+													
PLO 10	+			+	+										+					+					
PLO 11						+	+	+	+			+		+	+		+	+			+			+	

\+ – obtaining competence;
MC – EP mandatory components;
SC – EP selective components;
PLO – program learning outcomes;
Choice – educational component of free choice from the base of selective HEE disciplines.

6. The system of internal quality assurance of higher education

The Rivne State University for the Humanities has his own system for providing by the institution of higher education with quality education and quality of higher education (internal quality assurance system), which provides for the following procedures and measures:

1) determination of principles and procedures for quality assurance of higher education;

2) monitoring and periodic review of educational programs;

3) the annual assessment of higher education postgraduates, scientific-pedagogical and pedagogical staff of the University, and regular publication of the results of such assessments at the University's official website, on information stands and in any other way;

4) providing the professional development of pedagogical, scientific and teaching staff;

5) providing the availability of necessary resources for organizing the educational process, including independent work of applicants for higher education for each educational program;

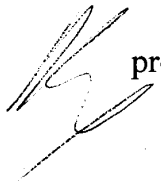
6) providing the availability of information systems for effective management of the educational process;

7) providing the publicity of information on educational programs, degrees of higher education and qualification;

8) providing an effective system for preventing and detecting academic plagiarism in the scientific works of teaching staff and applicants for higher education;

9) other procedures and activities.

The higher education institution's quality assurance system and higher education quality system (internal quality assurance system) may, upon submission by the Rivne State University for the Humanities, be assessed by the National Agency for the Quality of Higher Education or by independent accredited institutions for the assessment and quality assurance of higher education for its compliance with the requirements of the quality assurance system of higher education, approved by the National Agency for Quality Assurance in Higher Education, and international standards and recommendations for quality assurance in higher education.

Guarantor of the educational and scientific program  prof. A. V. Lysytsya