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

EDUCATION PROFESSIONAL PROGRAM

Secondary education (Physics and mathematics)
(for foreigners and stateless persons)
The first (bachelor) level of higher education
In specialty № 014 Secondary education (Physics)
Field of knowledge № 01 Education / Pedagogy
Qualification: Bachelor of Secondary Education. Physics teacher.
Teacher of Mathematics.

APPROVED BY THE ACADEMIC COUNCIL
RIVNE STATE UNIVERSITY OF HUMANITIES
The Head of the Academic Council
_____ (professor Ruslan Postolovskyy)
(protocol № 5 dated 05 "30" 2019)
Educational professional program enacts since
09 "01" 2019)
(order № 110-01/01 dated 06 "6" 2019)

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Educational program profile in the specialty 014.08 «Secondary Education (Physics)»
(with additional specialty 014.08 «Secondary Education (Mathematics))

1 - General information	
Full name of higher educational and structural unit	Rivne State University of Humanities, Faculty of Physics and Technology.
The degree of higher education and the name of the qualification in the language of the original	Бакалавр, бакалавр середньої освіти Вчитель фізики. Вчитель математики
	Bachelor, Bachelor of Secondary Education Physics teacher. Teacher of Mathematics
Official name of the educational program	Secondary Education (Physics and mathematics)
Type of diploma and the volume of the educational program	Bachelor's degree unitary, 240 ECTS credits, term of study 3 years 10 months.
Availability of accreditation	National Agency for Quality Assurance in Higher Education.
Cycle / Level	NQF Ukraine – level 7, FQ-EHEA – first cycle, EQF-LLL – 6 level..
Prerequisites	Complete secondary education.
Language (s) of teaching	Official (Ukrainian) language.
The duration of the educational program	Prior to the introduction of the higher education standard but not more than 5 years.
Internet address of the permanent description of the educational program	http://www.rshu.edu.ua/
2 The purpose of the educational program	
Formation of the ability of students to solve complex specialized problems in the organization of the educational process, which are due to the regularities and features of modern theory and methodology of teaching (specialty 014.08 Secondary education (Physics) and additional specialty "Secondary education (Mathematics)"), characterized by complexities and the uncertainty of the conditions.	
3 Characteristics of the educational program	
Subject area	***REQUIRED COMPONENTS (75%)*** Components of humanitarian training –9 %(21 credit). Components of fundamental training – 41 % (100 credit). Components of psychological and pedagogical training – 16 % (37,5 credit) Components of practical training – 9 % (22 credit) ***SELECTIVE COMPONENTS (25%)*** Components of the choice of higher education institution – 16 % (37,5 credit) Components of free student choice – 9% (22 credit)
Orientation of the educational program	Educational and professional
The main focus of educational program and specialization	The educational program provides training for specialists in general secondary education (level of complete secondary education) in the specialty 014 "Secondary education (Physics)" (with additional specialty "Secondary education (Mathematics)").

Features of the program	The educational program contains a list of general and subject competences and the normative content of the training of higher education applicants, formulated in terms of the learning outcomes. It involves teaching and two teaching practices.
4 – Ability of graduates to employment and further training	
Ability for employment	Professional titles (according to the National Classifier of Professions ДК 003: 2010): 2320 Teacher of secondary educational institution 234 Teachers of specialized educational institutions 3340 Laboratory assistant (education) 3111, 23157 Laboratory assistant (chemical and physical research)
Further training	Ability to continue studying under the program of the second (master's) level.
5 - Teaching and Assessment	
Teaching and learning	Teaching on the basis of student-centered and problem-oriented learning with the use of multimedia lectures, practical and laboratory classes, passing of practices, with the involvement of self-education.
Assessment	Types of control: current, thematic, modular, total, self-control. Forms of control: verbal and written interviews, essay, test control, laboratory and individual work protection, defense of practice reports, defense of term papers (projects), presentation of scientific and creative work, certification (defense of qualifying work or complex examination. Assessment of educational achievements: 4-point national scale (excellent, good, satisfactory, unsatisfactory); 2-level national scale (enrolled / not accounted); 100-point system and ECTS scale (A, B, C, D, E, F, FX).
6 – Program competencies	
Integral competence (IC)	**IC.** The ability to solve complex specific problems and practical problems in the field of secondary education, which involve the application of theories and methods of pedagogical and natural sciences, and is characterized by the complexity and uncertainty of the pedagogical conditions of the organization of educational process in institutions of general secondary education.
General competencies (GC)	**GC 1.** Knowledge and understanding of the subject area (physics, mathematics,) and specifics of professional activity for forming the scientific picture of the world. **GC 2.** Recognition and observance of moral and ethical aspects of professional activity and the need for intellectual integrity. **GC 3.** Social activity, the ability to bear civil responsibility for the state of the environment, to express a tolerant attitude to different opinions and views in a multicultural environment. **GC 4.** Willingness to work independently and in a team, to lead a group, to show creativity, initiative. **GC 5.** Ability to find, process and analyze information, ability to identify problems and formulate tasks, collect data, analyze them and offer solutions. **GC 6.** Ability to design their own activity in the industry, apply the acquired knowledge in life and professional situations. **GC 7.** Ability to critically evaluate information from a variety of sources, rethink your own and others' experiences, analyze your professional and social activities, and make constructive decisions. **GC 8.** Ability to speak Ukrainian both verbally and in writing. **GC 9.** Ability to participate in international events and be able to communicate in a foreign language with specialists.

	GC 10. The ability to adapt to the dynamic present and future, to act in a new situation, the willingness to use the experience gained to preserve the health and health of others. **GC 11.** Readiness for self-study and self-improvement for life. **GC 12**. Ability to apply mathematical methods, advanced digital technologies and devices to solve natural science problems, create information products and apply them in school practice.
Professional competence of the specialty (PC)	**PC 1.** Ability to operate with modern terminology, scientific concepts, laws, concepts, teachings and theories of natural sciences, physics, mathematics. **PC 2**. Ability to reveal the general structure of the natural sciences to form a scientific picture of the world. Ability to characterize natural systems of different levels of organization based on the interconnection of fundamental laws of nature and society. **PC 3.** Ability to characterize the achievements of physics and mathematics, to identify their role in society, to ensure the sustainability of the development of natural and social systems, to implement a strategy for the sustainable development of the biosphere and society. **PC 4.** Ability to apply modern methods of research of physics and mathematics to substantiate the integrity and unity of nature, to use and interpret the results of research. **PC 5.** Ability to adhere to the principle of science when translating natural science knowledge into the plane of school subjects: physics, mathematics and natural sciences. **PC 6**. Ability to apply the acquired knowledge from the subject area, modern techniques and educational technologies to the formation of key professional competences in students of general secondary education institutions. **PC 7**. Ability to select methods and tools for teaching physics and mathematics, aimed at developing students' abilities, taking into account their individual and age characteristics, interpersonal relationships of students in the group and class, awareness of equal opportunities and gender issues. **PC 8.** The ability to integrate the content, forms and methods of teaching physics and mathematics to form a comprehensive picture of the world in students. **PC 9.** Ability to plan comprehensively, organize and execute training projects, prepare analytical reporting documents and presentations. **PC 10**. Ability to provide objective control and evaluation of the level of academic achievement of students in physics and mathematics, to diagnose, predict the effectiveness and correction of the educational process based on the study of the psychological and pedagogical features of the formation of key and subject competences. **PC 11**. Ability to apply modern methods and educational technologies, including information and digital, to ensure the high quality of the educational process. **PC 12.** Ability to safely conduct research activities in the natural sciences in laboratory and natural settings.
7 – Program learning outcomes	
Program learning outcomes (PLO)	**PLO 1**. Knowledge of the basics of the philosophy, history and culture of Ukraine, which contribute to the socialization of the individual, the development of his general political culture and activity, the formation of national dignity and patriotism, the perception of ethical values.

	PLO 2. Understanding the importance of culture as a form of human existence, the ability to appreciate the biodiversity and multiculturalism of the world and to be guided in its activities by the modern principles of respect, tolerance, dialogue and cooperation. **PLO 3**. Understanding of cause and effect relations of development of society and ability to use them in professional and social activity, ability to apply modern scientific and technical achievements of world culture and civilization. **PLO 4**. Knowledge and understanding of the basics of natural sciences, physics, mathematics at the level necessary for work in institutions of general secondary education. operation of modern terminology, scientific concepts, laws, concepts, teachings and theories. **PLO 5.** Knowledge of the modern system of organization of nature and methodology of natural science knowledge, structure and basic functional features for maintaining the stability of the composition, structure, functioning and development of natural systems, the human body in connection with its environment. **PLO 6.** Knowledge of the essence of experimental methods and ability to use them both under the guidance of the teacher and independently, to test the hypotheses of the study of the phenomena of nature and their explanation on the basis of physical laws, mathematical theories and patterns. **PLO 7.** Ability to apply the theoretical knowledge and practical methods of related fields (physics, chemistry, biology, etc.) at the operational level to develop an understanding of integrative links between fundamental sciences, to form a holistic natural picture of the world. **PLO 8.** Ability to characterize natural systems of different levels of organization using the methods of modern natural sciences, physics, mathematics, to explain their role for sustainable development of nature and society, to use knowledge for their protection, reproduction and balanced development, forming a healthy way of life. **PLO 9.** Possessing practical methods of studying the natural sciences, physics, mathematics, ability to ask the right questions, use standard equipment, plan, draft projects and conduct experiments, collect and analyze data, carry out a careful analysis of errors and critically evaluate the results. **PLO 10.** Ability to perform computer calculations relevant to the natural sciences, physical, mathematical problems, using appropriate software and at least one programming language. **PLO 11.** Skills to work independently or in a team, the ability to get results within a limited time, taking into account professional integrity and preventing plagiarism. Proficiency in Ukrainian, including special terminology, to search for information **PLO 12.** Ability to analyze state normative documents for planning and designing basic types of educational activities of students, creating an equal and fair educational environment. **PLO 13.** Ability to apply modern educational technologies, it is available to translate the system of scientific natural knowledge in the field of educational subjects (natural sciences, mathematics, physics) taking into account age and individual characteristics of students. **PLO 14.** Possession of information and communication technologies and ability to apply them in the educational process in physics and mathematics for formation in students of key and subject competences. **PLO 15.** Ability to organize student collaboration, monitor and objectively evaluate their educational achievement, work effectively with

	the teaching staff of educational institutions, other professional associations, and critically evaluate the professional skills of fellow educators. **PLO 16.** The need and ability to learn throughout life and to improve the professional competences acquired during training. **PLO 17.** Knowledge and skills in safe working conditions and environmental protection. **PLO 18.** Ability to use mathematical methods, to create mathematical models of natural phenomena and processes. Awareness of the variability of mathematical methods in solving natural problems.
8 – Resource support for the implementation of the program	
Personnel support	Undertake lectures on educational disciplines by scientific and pedagogical workers of the corresponding specialty having a degree and / or academic rank and working at their main place of work is more than 50% of the number of hours determined by the curriculum.
Material and technical support	Material and technical support complies with licensing requirements for providing educational services in the field of higher education and is sufficient to ensure the quality of the educational process. Provision of training facilities, computer workstations, multimedia equipment meets the needs. Specialized computer classes of the faculty with the necessary software and unrestricted open access to the Internet are available for practical and laboratory work, information search and processing of results. All the necessary social and household infrastructure is available and the number of dormitory places meets the requirements.
Information and teaching and methodological support	The educational process is provided with educational-methodical complexes of disciplines, didactic materials for independent and individual work of students in the disciplines, programs and methodical recommendations for practice, methodical recommendations for writing course and qualification papers. Study buildings, a scientific library, reading rooms, dormitories are provided with unrestricted access to the Internet. The training courses are posted on the Moodle distance learning platform.
9 – Academic mobility	
National Credit Mobility	It is regulated by the Resolution of the Cabinet of Ministers of Ukraine No. 579 “On Approval of the Regulations on the Implementation of the Right to Academic Mobility” of August 12, 2015.
International Credit Mobility	On the basis of bilateral agreements between the Rivne State University for the Humanities and foreign educational establishments.
Teaching foreign applicants	Possible.

2. List of components of educational and professional program

Code	Components of the educational program (disciplines, course projects (jobs), practices, qualifications)	Number of credits	Form of final control
1	2	3	4
Required EP components			
RC 01.	Ukrainian (as a foreign language)	6,0	Exam.
RC 02.	History of Ukraine	3,0	Exam.
RC 03.	Ukrainian (professional)	3,0	Exam.
RC 04	Principles of Ecology	3,0	Credit
RC 05	Philosophy	3,0	Exam.
RC 06	History of Ukrainian Culture	3,0	Exam.
RC07	Analytical geometry and linear algebra	5,5	Exam.
RC08	Mathematical analysis	11,0	Exam.
RC09	Basics of vector and tensor analysis	3,5	Credit
RC10	Differential and integral equations	5,0	Exam.
RC11	Probability Theory and Mathematical Statistics	3,0	Credit
RC12	Physics	43,0	Exam.
RC13	Theoretical physics	29	Exam.
RC14	Psychology	7,5	Exam., Credit
RC15	Pedagogy	9,0	Exam., Credit
RC16	Age physiology and valeology	3,0	Credit
RC17	Методика навчання фізики	15,0	Exam., Credit
RC18	Occupational safety and health	3,0	Exam., Credit
RC19	Astronomy	4,0	Exam.
RC20	General electrical engineering	3,0	Exam.
RC21	Pedagogical practice (propaedeutic)	2,0	Credit
RC22	Pedagogical practice (pedagogically)	9,0	Credit
RC23	Coursework in Physics	1,5	Credit
RC24	Course work on the methodology of teaching physics	1,5	Credit
The full number of required components: 180,5			
Selective components of the EP			
SC01 / SC02	Economics / Religious Studies	3,0	Credit
SC03 / SC04	Jurisprudence / Political Science	3,0	Credit
SC05 / SC06	Philosophy of Education / History of World Civilizations	3,0	Credit
SC07	Introduction to the specialty	6,0	Exam.
SC08	Information and communication technologies	3,0	Credit
SC09	Informatics	3,0	Credit
SC10	Chemistry	3,0	Exam.
SC11	Mathematical methods of physics	4,0	Exam.
SC12	Astrophysics	3,0	Credit
SC13	Basics of the scientific research	3,0	Credit
SC14	Basics of modern electronics	3,5	Exam.
SC15	School mathematics course with a practical work for solving mathematical problems	10,0	Exam., Credit
SC16	Elementary Mathematics	6,0	Credit
SC17	Methods of teaching mathematics	6,0	Exam., Credit
The full number of selective components: 59,5			
THE FULL NUMBER OF PROFESSIONAL PROGRAM 240			
Total: credits - 28, examination - 30.			

4. Matrix of correspondence of program competences to the components of educational program

	RC01.	RC02.	RC03.	RC04	RC05	RC06	RC07	RC08	RC09	RC10	RC11	RC12	RC13	RC14	RC15	RC16	RC17	RC18	RC19	RC20	RC21	RC22	RC23	RC24	SC01	SC02	SC03	SC04	SC05	SC06	SC07	SC08	SC10	SC11	SC12	SC13	SC14	SC15	SC16	SC17
GC 1		+	+	+								+																												
GC 2							+	+	+	+	+	+	+																											
GC 3	+			+	+							+	+																	+							+		
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GC 8																															+					+		+		
GC 9		+	+	+								+	+																											
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GC 11																												+										+		
GC 12			+	+								+	+											+							+								+	
PC 1			+	+								+	+			+	+	+	+												+							+	+
PC 2							+	+	+	+	+																	+												
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PC 12																							+	+	+				+		+						+	+		

5. Matrix for providing software learning outcomes to relevant educational program components

	RC 01.	RC 02.	RC 03.	RC 04	RC 05	RC 06	RC07	RC08	RC09	RC10	RC11	RC12	RC13	RC14	RC15	RC16	RC17	RC18	RC19	RC20	RC21	RC22	RC23	RC24	SC01	SC02	SC03	SC04	SC05	SC06	SC07	SC08	SC10	SC11	SC12	SC13	SC14	SC15	SC16	SC17
PLO 1	+						+	+	+	+	+		+		+														+	+										+	
PLO 2	+	+	+											+							+	+				+	+	+		+			+	+	+				+	
PLO 3		+											+								+									+		+						+			
PLO 4				+												+												+	+					+						+
PLO 5					+	+							+																+											
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