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

EDUCATIONAL AND PROFESSIONAL PROGRAM

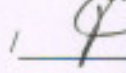Secondary education (Informatics)

THE LEVEL OF HIGHER EDUCATION	The first (bachelor)
THE DEGREE OF HIGHER EDUCATION	bachelor
BRANCH OF KNOWLEDGE	01 Education/Pedagogy
SPECIALTY	014 Secondary education
SUBJECT SPECIALTY	014.09 Secondary education (Informatics)

APPROVED BY THE ACADEMIC COUNCIL

The head of the academic council

/_____ professor, Postolovskyi R. M.

(Protocol No. 4 dated April 24, 2018)

The educational program is put into effect from ___ 2018

Rector _____ professor, Postolovskyi R. M.

(Order No. _____ dated "___" _____ 2018)

Rivne, 2018

APPROVAL SHEET
of educational and professional program

THE LEVEL OF HIGHER EDUCATION   the first (bachelor)
SPECIALTY   014.09 Secondary education (Informatics)
BRANCH OF KNOWLEDGE   01 Education/Pedagogy
QUALIFICATION   bachelor of secondary education, teacher of informatics. Specialist in computer science.

Developers of the program:

1. Hnedko N. M., candidate of pedagogical sciences, Associate Professor
2. Kozlakova H. O., doctor of pedagogical sciences, Professor
3. Pavlova N. S., candidate of pedagogical sciences, Associate Professor

INTRODUCED BY
Department of Information and Communication Technologies and Computes Science Teaching Methods

Protocol No. 1 dated Jan 23, 2018

The head of the department _____ associate professor, Pavlova N. S.

AGREED BY

Academic Council of the Faculty of Mathematics and Informatics

Protocol No. 2 dated Feb 27, 2018

The head of the academic council _____ associate professor, Shahraichuk M. I.

APPROVED BY

Academic Council of the Rivne State University of the Humanities

Protocol No. 4 dated April 24, 2018

The head of the academic council _____ professor, Postolovskyi R. M.

INTRODUCTION

Educational and professional bachelor's program in branch of knowledge 01 Education / Pedagogy in specialty 014 «Secondary education (Informatics)» was developed for the introduction as a Standard of Higher Education at the appropriate level of higher education by the project team of the Rivne State University of Humanities composed of:

Project Team Leader (educational program guarantor):

Natalia M. Hnedko, candidate of pedagogic sciences, Associate Professor of the Department of Informational and Communal Technologies and Computes Science Teaching Methods.

Project Team Members:

Galina O. Kozlakova, doctor of pedagogic sciences, Professor;

Natalia S. Pavlova, candidate of technical sciences, Associate Professor.

1. Educational program profile in the specialty 014 «Secondary Education (Informatics)»

1 –General information	
Full name of higher educational and structural unit	Rivne State University of Humanities, Faculty of Mathematics and Informatics.
The degree of higher education and the name of the qualification in the language of the original	Бакалавр, бакалавр середньої освіти, вчитель інформатики. Фахівець у галузі комп'ютерних наук.
	Bachelor, Bachelor of secondary education, Teacher of informatics. Specialist in computer science.
Official name of the educational program	Secondary Education (Informatics).
Type of diploma and the volume of the educational program	Master's degree, unitary, 240 ECTS credits, term of study 4 years.
Availability of accreditation	National Agency for Quality Assurance in Higher Education.
Cycle / Level	NQF Ukraine – level 6, 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	www.fmi-rshu.org.ua
2 – The purpose of the educational program	
Training of highly skilled specialists for educational institutions capable of organizing the process of studying informatics and information and communication technologies in the conditions of reforming secondary education, effectively and expediently use the latest information and communication technologies in the educational process, develop and improve the program and information provision of educational purposes, ready for further self-development and professional growth.	
3 - Characteristics of the educational program	
Subject area	*Objects of study and activity*: educational process in institutions of secondary education (according to the specialization «Informatics»). *Aims of training*: the formation of professional competences of future teachers of informatics of the basic secondary school. *Theoretical content of the subject area*: *Determinations*: the theoretical foundations of education science, general and age psychology, modern pedagogical technologies and methods of teaching computer science; basic knowledge in physics and mathematics (sufficient for the formation of subject competences in computer science), theoretical foundations of computer science, computer science; *Concept*: paradigms, laws, laws, principles, historical background for the development of education; concepts of systemic, adaptive, innovative, project education, etc.; *Principles*: student-centered, competence-oriented, practical-oriented, interdisciplinary. *Methods, methodology, technologies and tools*: modern methods of teaching, development and upbringing, methods of solving

	pedagogical tasks, innovative technologies and means of teaching and gaining experience in applying them in practice. *Instruments and equipment:* psychological and pedagogical tools; equipment and equipment necessary for laboratory work, printed and electronic teaching aids; information and communication technologies; bases for conducting educational and industrial practices in other educational institutions (under cooperation agreements).
Orientation of the educational program	Educational and professional
The main focus of educational program and specialization	The emphasis is on theoretical and practical training of pedagogical staff for performing professional activities that possess modern methods and technologies of organization of educational process, special (professional) and integral competencies, ready for scientifically grounded innovations in education.
Features of the program	The educational program contains pedagogical, assistant and pre-diploma practice; has a wide range of selective academic disciplines.
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 3121 Specialist in information technology
Further training	Ability to continue studying under the program of the second (educational-scientific) 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. - organizational forms of education: collective, group and integrative education; lectures, seminars, practical, laboratory, individual lessons, consultations, passing of practice, colloquiums, preparation of bachelor's work; - learning technologies: information and communication, distance learning, student-centered, modular, simulation, discussion, problem technology learning, technology research training, collaborative learning technology, projective education, self-learning.
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	Ability to solve complex specialized tasks and practical problems in a certain area of professional activity or in the process of study, which involves the application of certain theories and methods, the latest technology of the relevant science, is characterized by complexity and uncertainty of pedagogical conditions of organization of educational process in institutions of general secondary and vocational education.

General competencies (GC)	1. Ability to exercise their rights and obligations as a member of society, to understand the values of civil society and the need for its development.
	2. Ability to preserve and increase the moral, cultural, scientific values and achievements of society on the basis of understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technology, use different types and forms of motor activity for active rest and healthy lifestyle.
	3. Ability to abstract and critical thinking, the use of methods of mental activity.
	4. Ability to apply knowledge in practical standard and new situations.
	5. Knowledge of lexical, grammatical, stylistic features of state and foreign vocabulary, terminology in the field of information technologies, grammatical structures for the understanding and production of oral and written foreign texts of professional direction.
	6. Ability to use information and communication technologies.
	7. Ability to learn and master new modern knowledge, motivate people and move towards a common goal.
	8. Ability to generate new ideas (creativity), make informed decisions, be proactive.
	9. Knowledge of the subject area, ability to identify and shape problems in professional activities and solve them at a professional level.
	10. Ability to communicate with representatives of other professional groups of different levels (with experts from other fields of knowledge / types of economic activity).
	11. Ability to conduct research at the appropriate level, develop and manage pedagogical projects; evaluate and ensure the quality of work performed.
	12. Ability to understand the importance of information in modern society, to carry out information processes, to deal with information security issues with responsibility.
	13. Possession of general norms of moral behavior of a person and a group of people, principles of command and autonomous work, readiness to interact with the participants of the educational process and social partners, work in an international context, tolerant perception of social, ethnoconfessional, gender and cultural differences.
	14. Possession of the basics of philosophy, national history, economics and law, ecology, contributing to the development of a common culture and socialization of personality, propensity to aesthetic values.

Professional competence of the specialty (PC)	1. Ability to provide the appropriate level of teaching the subject «Informatics» in accordance with the existing curricula, adhering to the requirements of the State standard of basic and complete secondary education.
	2. Ability to form competently, technically, informationally educated person, prepared for active labor activity in the conditions of modern high-tech information society.
	3. Ability to use basic knowledge of the fundamental sections of mathematics, to the extent necessary for the possession of the mathematical apparatus of the corresponding field of knowledge, the ability to use mathematical methods in the chosen profession.
	4. Ability is integrated to use knowledge of psychological and pedagogical theories, methods of teaching individual subjects and informatics, to analyze and compare pedagogical technologies, to experiment in their own professional activities, taking into account interdisciplinary connections.
	5. Ability to mathematical and logical thinking, formulation and research of mathematical and physical models, in particular discrete mathematical models, justification of the choice of methods and approaches for solving theoretical and applied problems in the field of computer sciences, interpretation of the obtained results.
	6. Ability to model and organize the process of computer science education; the ability to choose the necessary means, forms and methods of organizing the activities of students in the learning process, to introduce modern educational technologies, innovative approaches, advanced pedagogical experience.
	7. Ability to provide the organization of computing processes in information systems for different purposes, taking into account architecture, configuration, performance indicators operating systems, selection and use of software of general and initial purpose.
	8. Ability to exercise objective control and evaluation of the level of educational achievements of students in Computer Science, to implement test control of students' knowledge using appropriate software.
	9. Ability to use technologies and tools of search engines, methods of intellectual analysis of data and texts, to process, interpret and summarize the results.
	10. Ability to process text, tabular, graphical and multimedia data in appropriate environments; create educational control multimedia programs.
	11. Readiness to perform a full cycle of algorithmic analysis and synthesis of problem solving, analyze the complexity and effectiveness of algorithms, implement algorithms in programming languages, select and apply software for solving applied problems.
	12. Ability to organize educational and cognitive activity of students in compliance with legal norms and laws, normative legal acts, sanitary-hygienic rules as well as rules and recommendations on healthcare for schoolchildren, and, in particular, when working in a computer class.
	13. Readiness to implement innovative information technologies in the educational process, including models of distance and mixed learning.
	14. Ability to project and develop modern software products

	15. Readiness to plan, develop and implement specialized and advanced courses in Computer Sciences taking into account the latest learning technologies.
	16. Readiness to analyze social networks as an information resource; to perform effective search and dissemination of information through social networks; use the opportunities of social networks to create and demonstrate their own projects, training and professional development, participate in Internet conferences, seminars, webinars.
	17. Ability to reasonably pick and use software and information resources to create an educational information system of an educational institution.

1. – Program learning outcomes	
Knowledge	1. Knowledge of the main components of the concept of teaching Computer Science, programs, textbooks and other teaching materials; principles and concepts which are the basis of specific information and communication technologies, their purpose, functional characteristics and directions of use.
	2. Knowledge of the requirements for the technical and software of the general and educational appointment of the computer science study-room.
	3. Knowledge of the features of the use of educational Web resources for the development of teaching materials; educational digital resources to find professional information of different types.
	4. Knowledge of the possibilities of modern Internet technologies and the ability to use them in professional activities.
	5. Knowledge of principles, tools, web programming languages, database creation technologies, educational information environments.
	6. Knowledge of computer architecture, functions of operating systems, software interfaces, programming languages and methods of developing programs which interact with components of computer systems.
	7. Knowledge of numerical methods of linear and nonlinear algebra, solutions of ordinary differential and integral equations, solution of equations in partial derivatives.
Skills	8. Ability to use modern methods and technologies of scientific communication in Ukrainian and foreign languages.
	9. Ability to provide an adequate level of teaching in the subject Computer Science in accordance with existing curricula, adhering to the requirements of the State standard of basic and secondary education, introducing modern educational technologies, innovative approaches.
	10. Ability to form competently, technically, informatively educated person, which is prepared for professional self-determination in the conditions of modern high-tech information society.
	11. Ability to use modern ICTs, information databases, web resources, the Internet services to develop their own teaching materials, professional development and implementation of the principles of continuous education.
	12. Mastering of techniques and methods of forming logical, operational, algorithmic thinking; methods and approaches for solving theoretical and applied problems in the field of computer science and computer sciences, designing and developing modern

	software products, interpreting the obtained results
	13. Ability to develop algorithms for solving problems in Computer Science, analyze the complexity and efficiency of algorithms; implement algorithms in programming languages; to select and apply software for solving applied problems.
	14. Ability to access and use software and information resources to create and maintain an educational information system of an educational institution.
	15. Ability to use the knowledge of psychological and pedagogical theories, teaching methods and Computer Science in a complex way, to experiment in their own professional activities, taking into account interdisciplinary connections.
	16. Mastering of methods and techniques of organization, unification of teams (educational, methodological, etc.) and the ways of coordinating their activities.
Communication	17. Ability to adapt and communicate, to build communication with the subjects of the educational process on the principles of humanization and trust.
	18. Mastering of the basics of professional speech culture.
	19. Ability to adequately behave in the media-information environment.
	20. Ability to form value orientations of students, to provide pedagogical support to the processes of socialization and professional self-determination of students, preparing them for conscious choice of life style.
Autonomy and responsibility	21. Ability to study throughout life and improve with a high level of autonomy qualification of a teacher.
	22. Ability to clearly and competently express their thoughts and feelings, to have verbal and non-verbal means of informational influence on students.
	23. Ability to find and analyze from a scientific and methodological point of view different technologies, methods, educational resources in various sources of information, to adapt them to the author's methodical system of training.
	24. Ability to analyze socially and personally significant worldview problems, to make decisions based on the established value orientations.
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.
	Department rooms with the appropriate equipment and inventory: six computing laboratories equipped with computer equipment, integrated into the local network, which is connected to the Internet$ there is a multimedia class and four multimedia projectors, screens.
	According to the agreement on participation of the University in the Microsoft Developer Network Academic Alliance, the following training software is provided by Microsoft on licensed software:

	• operating systems of the MS Windows family (Windows 98 SE, Windows 2000 Professional Edition, Windows XP Professional Edition, Windows 2003 Advanced Server Standard Edition) and SlackWare Linux 14; • database servers Microsoft SQL Server 2012 Std database servers. R2; • visual programming environments Microsoft Visual Studio 2012; • RDBMS Microsoft Visual FoxPro 9; • visual design tools MS Office Visio; • package of office applications LibreOffice; Microsoft Office 2013 Pro Plus Other software is used freely and does not require licensing
Information and teaching and methodological support	Use of the virtual learning environment of the Rivne State University of the Humanities and the author's scientific works of the teaching staff.
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 for higher education	Possible.

3. Form for an attestation of higher education applicants

Attestation of graduates of the educational program of the specialty 014.09 "Secondary education (Computer Science)" takes place in the form of defense of qualifying baccalaureate or taking of a complex examination on specialty and ends with the issuance of the document of the established sample on awarding a bachelor's degree with qualification: bachelor of secondary education, Computer Science teacher and specialist in Computer Science.

The attestation is open and public.

6. System of internal quality assurance of higher education

The Rivne State University of the Humanities has a system for providing higher education establishment with quality education and higher education quality (internal quality assurance system), which provides for the following procedures and activities:

1) definition of principles and procedures for ensuring the quality of higher education;

2) monitoring and periodic review of educational programs;

3) annual evaluation of higher education graduates, scientific and pedagogical and teaching staff of a higher educational establishment, and regular publications of the results of such evaluations on the official website of the higher educational establishment, on information billboards and in any other way;

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

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

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

7) providing publicity of information about educational programs, degrees of higher education and qualifications;

8) providing an effective system of preventing and detecting academic plagiarism in scientific works of higher education and higher education graduates;

9) other procedures and activities.

The system of providing by the higher education establishment with the quality of educational activity and the quality of higher education (the system of internal quality assurance) may, upon submission by the Rivne State University of the Humanities, be assessed by the National Agency for the Quality Assurance of Higher Education or independent establishments accredited by it, for the assessment and quality assurance of higher education on the subject of its compliance with the requirements systems of quality assurance in higher education, approved by the National Agency for the Quality Assurance of Higher Education, and international standards and guidelines for quality assurance.

Guarantor of the educational program,
head of the project group   Hnedko N. M.

In addition, there is a list of EP components and their structural logic, as well as an explanatory note to the EP.