

CONTENT OF THE EDUCATIONAL PROGRAM

№	Code and name of modules	Total credits by module	№	Name of subject and code	Credits by subjects	Cycle/component
1	ORW – 1 Organization of research work	9	1	ORW 701 Academic writing	4	UC
2			2	ORW 702 Methods of scientific research	5	UC
	APCSNLT Actual problems of computer science and network learning technologies	16	3	APCSNLT 701/1 Organization of pedagogical experiment and data processing	5	OC
				APCSNLT 701/2 Methodology of application software development		OC
			4	APCSNLT 702 Teaching theories and pedagogical technologies	6	UC
			5	APCSNLT 703/1 Theory and practice of distance learning	5	OC
				APCSNLT 703/2 Managing the virtual learning environment		OC
5	PT – 2 Professional training	143	6	PT7(8)02 Research practice	10	UC
			7	PT 801 Pedagogical practice	10	UC
			8	PT7(8,9) 03 Doctoral student research work, including internship and doctoral dissertation DSRW	123	DSRW
				Methods of scientific research	2	
				Intensive courses	2	
6	FE Final certification	12	9	FE 901 Writing and defense a doctoral dissertation	12	FC
TOTAL:		180			180	

2.1. DESCRIPTION MODULES AND DISCIPLINES

ORW – 1 Organization of research work

Module description:

It contains topical issues of research: defines the structure, logical organization, methods and means of research work, as well as the necessary knowledge that contributes to the systematic and understandable scientific text when publishing research results. Preparation for the publication of research results in a publishing house, along with the ability to competently express your own opinion. Considers the possibility of writing a research paper, collecting data related to a research question, conducting a survey, determining the relationship and processing the data obtained. By clarifying the content of academic writing education, analyzing the features, composition of texts, mastering the structure of the text in accordance with the field of science and determining the research methods used, distinguishing the types of texts written in the academic field, it is possible to write an independent creative work with clear meaning, understandable information, understandable language.

№	Name of subject and code	Cycle/component	Credits	Subject discription	Teaching methods	LO by EP	Assesment methods
1	ORW 701 Academic writing	UC	4	The discipline is aimed at developing the skills of writing various scientific texts (scientific article, report, opinions, literary review, empirical article, etc.), comprehensive mastery of their features and structures. It covers all the problems that authors face in the process of work, starting with the choice of a topic and ending with its publication. During the study of this discipline, doctoral students develop their abilities for critical thinking, systematic writing, the construction of scientific discourse, critical reading, analysis, evaluation. They get acquainted with the structure and styles of scientific articles in highly rated international journals	Training workshop Training discussion Round table	LO1, LO2	Written
2	ORW 702 Methods of scientific research	UC	5	The discipline "Methods of scientific research", conducted in order to provide the student with the information necessary for the effective writing of a research paper, includes a comprehensive analysis of various scientific texts, starting with the concept of research. The analysis of research papers is carried out, with an emphasis on writing their methodological department. The doctoral student will be given the opportunity to develop a research	Case study Project Method		Written

				<p>plan that he considers acceptable, combined with the experience and knowledge accumulated up to this period, depending on the field of his research. In addition, comprehensive information is provided on the totality of research contained in the design of the research paper. Thus, the doctoral student will learn how to systematically write a research paper and learn about other methods of scientific research. Knowledge about the application of quantitative, qualitative, mixed research methods, methods of data collection, research ethics, information necessary for the research process, such as data analysis, will be improved.</p>			
<p>Cycle of Core courses Optional components</p>							
<p>APCSNTL– 2 Actual problems of computer science and network learning technologies</p> <p>Brief description of the module: The module contains topical issues of the doctoral student's research work and pedagogical activity. Planning of stages of research work, processing of results, as well as processing of software products. Organization of interaction between components, work with automation tools for solving applied problems, principles of building an applied information system, trends and state of the market for the development of application software, the use of modern software for processing various information. In addition, the module provides for the formation of the management of educational systems, the acquisition of knowledge, skills, skills and ways of thinking acquired in the learning process; the formation of a system of knowledge about the functioning and development; familiarity with educational management technologies; the development of teaching theory and pedagogical technologies, management culture and complex qualities of professional management.</p> <p>Develops skills in the theory of distance learning and management of the virtual learning environment.</p>							
	Organization of pedagogical experiment and data processing	UC	5	<p>The discipline considers methods and techniques for conducting content and methodological analysis, designing and organizing a pedagogical experiment, conducting psychological and experimental research for conducting pedagogical experiments on identification, analysis, formation, developed in order to achieve research results.</p> <p>Subject theoretical and methodological foundations of conducting and organizing a pedagogical experiment, the meaning and features of pedagogical research, organization and evaluation of pedagogical research</p> <p>teaches the use of the qualimetric approach. Measurement theory. Technology of planning and organization of pedagogical experiment. Modeling technology in pedagogical research. Evaluation of</p>	Case study Project Method	LO3	

				the results of the pedagogical experiment. Basic concepts of mathematical statistics. Pearson-Fisher statistics. Chi-square			
	Methods of applied software development	UC		The discipline examines the basic concepts of algorithmic languages, the principles of algorithmization of tasks, as well as the structure and principles of the development of application programs in a high-level language, the basics of programming technology, programming styles. The discipline forms the skills to use application software packages, development environment, debugging, installation, documentation of programs using instrumental software. Owns the basic principles used in the processing of embedded software products		LO4, LO5	
Cycle of Major courses <i>University components</i>							
3	Learning theories and new technologies	OC	6	Basic concepts of theory, method, and teaching. 20th-century learning theories: Behavioral theory. 20th-century learning theories: cognitive theory. 20th-century learning theories: Constructivism. 21st century learning theories: connectivism. 21st century Learning Theories: Formative learning. 21st century learning theories: development theory. 21st century learning theories: a theory of structural learning. Macro and micromodels. How the learning environment changes. The role of the teacher, the student, and the technology. The role of the teacher, the student, and the technology. New technologies and their impact on education. Integration of new technologies in education	Training workshop Training discussion Round table	LO4, LO5	Written
4	Cycle of Major courses <i>Optional components</i>						
6	Theory and practice of distance learning	OC	5	The discipline examines the information and educational environment and its effective use in distance learning, taking into account the features and principles of its implementation. The discipline	Problem-module training	LO4, LO5	Written

				forms distance learning in a specific subject area, the skills of applying modern technologies for creating distance courses, digital educational resources, the purpose and features of the content, the main methods of work, and today the need for distance learning is being considered.			
7	Virtual Learning Environment Management	OC		The discipline considers didactic methods and technological tools of educational and educational-methodical work in virtual educational environments, classification of virtual teaching aids, taxonomy of indicators of didactic design, illustrative and cognitive multimedia functions, controls in scripts of educational programs, didactic analysis of application software packages. Discipline builds the skills to have ideas about the possibilities and advantages of virtual learning in the activities of a modern university.		LO4, LO5	
<p>PT Professional training</p> <p><i>Brief description of the module:</i> This module is designed to provide doctoral students with the necessary knowledge and practical experience in the field of research and teaching activities, as well as preparing doctoral students to perform research work.</p> <p>Research practice includes the study of various research methods, the analysis of scientific articles and publications, data processing and statistical research. The expected result of this module is the formation of students' skills of independent work with information, knowledge of research methods, the ability to make reasoned conclusions based on data.</p> <p>Pedagogical practice includes conducting pedagogical classes with students, preparing teaching materials for classes, analyzing learning outcomes and improving working methods. The expected result of this module is the acquisition of pedagogical experience by doctoral students and the ability to apply theoretical knowledge in practice.</p> <p>The research work of a doctoral student includes internships and publications of scientific articles, as well as the execution of a doctoral dissertation. The expected result of this module is the formation of doctoral students' deep knowledge in the field of science, the ability to conduct scientific research, the ability to plan experiments, analyze results and draw conclusions. Also, the successful completion of a doctoral dissertation opens up opportunities for obtaining scientific degrees and career development in the scientific field.</p>							
1	Doctoral student research work, including internship and doctoral dissertation DSRW	UC	16	Forms the doctoral student's ability and practical skills to independently carry out scientific research related to solving complex scientific and technological problems in the field of training in innovative conditions. The publication of the results obtained in the course of research work provides for methodological aspects of research work, the basics of scientific ethics, writing and execution of instructions for the preparation and research work in accordance with the requirements, exchange of experience with an internship.	Experimental and practical work		Report
2	Intensive courses	UC		Methods of scientific research (intensive course) – in the course of studying the discipline, a doctoral student,			

				<p>using the experience and knowledge accumulated up to this period, depending on his field of research, will be able to develop and draw up a research plan that he considers acceptable, as well as the possibility of choosing a dissertation topic, how to approach the choice of domestic and foreign scientific supervisors. In addition, sufficient information will be given about the types of research contained in the design of the research paper. Thus, the doctoral student will be given the opportunity to systematize the writing of a research paper and get acquainted with other methods of scientific research. Knowledge about the use of quantitative, qualitative, mixed research methods, methods of data collection, research ethics, information necessary for the research process, such as data analysis, will be improved.</p>			
1	Doctoral student research work, including internship and doctoral dissertation DSRW	UC	14	<p>Forms the doctoral student's ability and practical skills to independently carry out scientific research related to solving complex scientific and technological problems in the field of training in innovative conditions. The publication of the results obtained in the course of research work provides for methodological aspects of research work, the basics of scientific ethics, writing and execution of instructions for the preparation and research work in accordance with the requirements, exchange of experience with an internship.</p>	Experimental and practical work		Report
	Intensive course			<p>Academic writing The discipline considers principles and techniques of creating a scientific text, rules creating scientific texts of various genres (scientific, scientific-educational, etc.), creating and editing a scientific text for publication, and features of the academic tradition in a particular field of scientific activity. The discipline forms the skills of structured presentation of their own ideas, the ability to create scientific and scientific-informational texts of various types, taking into account the specifics of academic</p>			

				discourse.			
1	Doctoral student research work, including internship and doctoral dissertation DSRW	UC	20	Forms the doctoral student's ability and practical skills to independently carry out scientific research related to solving complex scientific and technological problems in the field of training in innovative conditions. The publication of the results obtained in the course of research work provides for methodological aspects of research work, the basics of scientific ethics, writing and execution of instructions for the preparation and research work in accordance with the requirements, exchange of experience with an internship.	Experimental and practical work		Report
2	Intensive courses	UC		Methods of scientific research (intensive course) – in the course of studying the discipline, a doctoral student, using the experience and knowledge accumulated up to this period, depending on his field of research, will be able to develop and draw up a research plan that he considers acceptable, as well as the possibility of choosing a dissertation topic, how to approach the choice of domestic and foreign scientific supervisors. In addition, sufficient information will be given about the types of research contained in the design of the research paper. Thus, the doctoral student will be given the opportunity to systematize the writing of a research paper and get acquainted with other methods of scientific research. Knowledge about the use of quantitative, qualitative, mixed research methods, methods of data collection, research ethics, information necessary for the research process, such as data analysis, will be improved.			
14	Doctoral student research work, including internship and doctoral	UC	25	Forms the doctoral student's ability and practical skills to independently carry out scientific research related to solving complex scientific and technological problems in the field of training in innovative conditions. The	Experimental and practical work		Report

	dissertation DSRW			publication of the results obtained in the course of research work provides for methodological aspects of research work, the basics of scientific ethics, writing and execution of instructions for the preparation and research work in accordance with the requirements, exchange of experience with an internship.			
15	Intensive course			Academic writing The discipline considers principles and techniques of creating a scientific text, rules creating scientific texts of various genres (scientific, scientific-educational, etc.), creating and editing a scientific text for publication, and features of the academic tradition in a particular field of scientific activity. The discipline forms the skills of structured presentation of their own ideas, the ability to create scientific and scientific-informational texts of various types, taking into account the specifics of academic discourse.			
16	Doctoral student research work, including internship and doctoral dissertation DSRW	UC	30	Forms the doctoral student's ability and practical skills to independently carry out scientific research related to solving complex scientific and technological problems in the field of training in innovative conditions. The publication of the results obtained in the course of research work provides for methodological aspects of research work, the basics of scientific ethics, writing and execution of instructions for the preparation and research work in accordance with the requirements, exchange of experience with an internship.	Experimental and practical work		
17	Doctoral student research work, including internship and doctoral dissertation DSRW	UC	18	Forms the doctoral student's ability and practical skills to independently carry out scientific research related to solving complex scientific and technological problems in the field of training in innovative conditions. The publication of the results obtained in the course of research work provides for methodological aspects of research work, the basics of scientific ethics, writing and execution of instructions for the preparation and research work in accordance with the requirements,	Experimental and practical work		

				exchange of experience with an internship.			
18	Research practice	OC	5	Formation and development of professional knowledge in the field of the chosen specialty, consolidation of the theoretical knowledge obtained in the areas and special disciplines of the master's program, mastering the necessary professional competencies in the chosen field of specialized training, gaining experience in the study of an urgent scientific problem, formation of skills in the selection of materials necessary for the performance of a doctoral dissertation. In the course of research practice, the methodological culture of the researcher is formalized.	Experimental and practical work		
19	Research practice	OC	5	Formation and development of professional knowledge in the field of the chosen specialty, consolidation of the theoretical knowledge obtained in the areas and special disciplines of the master's program, mastering the necessary professional competencies in the chosen field of specialized training, gaining experience in the study of an urgent scientific problem, formation of skills in the selection of materials necessary for the performance of a doctoral dissertation. In the course of research practice, the methodological culture of the researcher is formalized.	Experimental and practical work		
20	Pedagogical practice	OC	5	Pedagogical practice is designed to ensure a close connection between the scientific-theoretical and practical training of doctoral students, to transfer the initial experience of pedagogical activity and skills of scientific-psychological and pedagogical research. Forms the skills of doctoral students to deepen, improve and consolidate their theoretical knowledge, the ability to apply them in teaching activities. The skills of conducting classes using traditional and innovative forms are being formed. Pedagogical practice is an important part of the main elements of the educational process.	Educational process		report
21	Pedagogical practice	OC	5	Pedagogical practice is designed to ensure a close connection between the scientific-theoretical and practical training of doctoral students, to transfer the	Educational process		report

				initial experience of pedagogical activity and skills of scientific-psychological and pedagogical research. Forms the skills of doctoral students to deepen, improve and consolidate their theoretical knowledge, the ability to apply them in teaching activities. The skills of conducting classes using traditional and innovative forms are being formed. Pedagogical practice is an important part of the main elements of the educational process.			
22	Writing and Defending a Doctoral Dissertation	FE	12	In the process of writing a research paper, it is aimed at demonstrating the ability to independently conduct research, structure and analyze information and apply it in practice. A wide range of issues related to the process of preparing a dissertation is considered: from the choice of the topic of scientific work to its defense; the choice of research methods, the structure and content of the stages of the research process, the sequence of search and processing of information sources is revealed. Special attention is paid to the method of writing a dissertation and the rules for preparing manuscripts	Preparation and defense of a doctoral thesis		Defense
	Total		180				

