Federal State Autonomous Educational Institution for Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA (RUDN University)

Environmental Engineering Institute
(name of the main educational unit (OUP) - developer of the EP VO)

WORKING PROGRAM OF THE DISCIPLINE

Computer Technologies in Education
(name of discipline/module)

implemented in the Higher Education Field:
44.04.02 Psychological and pedagogical education
(code and name of the direction of training / specialty)

The study of disciplines is carried out as part of the mastering of the Higher Education Program
Environmental Pedagogy / Environmental Pedagogy (English)
(name (profile/specialization) EP VO)

2022

1. PURPOSE OF MASTERING THE DISCIPLINE:

The purpose of training is to obtain additional knowledge, skills and abilities in the field of teaching features of natural sciences (ecology) , digital technologies used in education.

The objectives of the course are the acquisition by students of key competencies in the main areas of the Program:

1) Deepening the general information education and information culture of future teachers and researchers, eliminating possible gaps in the assimilation of the basic course of informatics;
2) mastering modern methods and means of automated analysis and systematization of scientific data;
3) mastering modern means of preparing traditional ("journal") and electronic scientific publications and presentations;
4) study of the psychological and pedagogical foundations of technological education;
5) development of technologies for the modernization of educational programs based on the introduction of modern information technologies;
6) study of modern electronic means of supporting the educational process and methods of their integration with traditional educational and methodological materials;
7) the formation of practical skills for the use of scientific and educational resources of the Internet in the daily professional activities of a researcher and teacher.

2. REQUIREMENTS FOR THE RESULTS OF MASTERING THE DISCIPLINE

Mastering the discipline Computer Technologies in Education / Computer technologies in education is aimed at developing the following competencies (parts of competencies) in students: UK-1.1; UK-1.2; UK-1.3; UK-2.1; UK-2.2; UK-2.3; UK-2.4; UK-6.1; UK-6.2; UK-7.1; UK-7.2; UK-7.3; GPC-5.1; GPC-5.2; GPC-5.3

Table 2.1. The list of competencies formed by students in the course of mastering the discipline (the results of mastering the discipline)

Cipher	**Competence**	**Competence achievement indicators (within this discipline)**
UK-1	Able to carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy	UK-1.1 Knows how to solve problematic tasks and identify their components and relationships between them
		UK-1.2 Able to search for options for solving a problematic task based on available and reliable sources of information
		UK-1.3 Owns a strategy for solving a problem situation based on a systematic and interdisciplinary approach
UK-2	Able to manage a project at all stages of its life cycle	UK-2.1 Formulates, on the basis of the problem posed, the project task and the way to solve it through the implementation of project management
		UK-2.2 Develops the concept of the project within the framework of the designated problem (in the chosen professional field): formulates the goal, objectives, justifies the

		relevance, significance (scientific, practical, methodological and other depending on the type of project), expected results and possible areas of their application
		UK-2.3 Develops a project implementation plan using planning tools; develops and analyzes alternative project options to achieve the intended results
UK-6	Able to determine and implement the priorities of their own activities and ways to improve it based on self-assessment	UK-6.1 Able to analyze large amounts of information of professional content
		UK-6.2 Able to analyze, synthesize and optimize solutions to the tasks
UK-7	Able to search for the necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data received from various sources in order to effectively use the information received to solve problems; evaluate information, its reliability, build logical conclusions based on incoming information and data. Able to search for the necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data received from various sources in order to effectively use the information received to solve problems; evaluate information, its reliability, build logical conclusions based on incoming information and data.	UK-7.1 Apply the methods of statistics in scientific and practical research; computer means of data processing and problem solving
		UK-7.2 Formulates the problem of processing real data in terms of a real problem
		UK-7.3 Knows the principles and techniques of modern corporate information culture and the basics of the digital economy
OPK-5	Able to develop programs for monitoring the results of students' education, develop and implement programs to overcome learning difficulties	GPC-5.1 Knows the ways and methods of organizing monitoring studies, monitoring typology, methodological monitoring tools; technology for diagnosing educational results, principles of diagnosing, understands the mechanisms for identifying individual characteristics, prospects for the development of the student's personality, ways to overcome learning difficulties
		GPC-5.2 Is able to develop programs for monitoring the results of mastering the educational program by students, is able to develop programs of targeted activities to overcome learning difficulties; select diagnostic tools, analyze the results of a

		diagnostic study, organize pedagogical interaction with specialists in the field of education (psychologist, social pedagogue, etc.)
		GPC-5.3 Able to organize and conduct pedagogical monitoring of the development by students of the educational program of the level of training; use modern methods of diagnostics and monitoring, taking into account the use of information and communication technologies; to adjust educational activities based on the data of monitoring educational results, taking into account the individual capabilities and educational needs of students and design a set of measures to overcome learning difficulties; select diagnostic tools, analyze the educational results of students, implement the pedagogical recommendations of specialists (psychologist, speech pathologist, etc.) in working with students who experience difficulties in mastering the program, as well as with students with special educational needs

3. THE PLACE OF DISCIPLINE IN THE STRUCTURE OF OP VO

The discipline Computer Technologies in Education / Computer Technologies in Education refers to the *basic* component of block B1.O.05 EP HE.

As part of the EP VO, students also master other disciplines and / or practices that contribute to the achievement of the planned results of mastering the discipline "Computer Technologies in Education / Computer Technologies in Education".

Table 3.1. The list of components of the EP HE that contribute to the achievement of the planned results of the development of the discipline

No. p / p	Code and name of competence	Previous disciplines	Subsequent disciplines (groups of disciplines)
UK-1	Able to carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy	Undergraduate disciplines	Master's dissertation, pedagogical practice
UK-2	Able to manage a project at all stages of its life cycle	Undergraduate disciplines	Master's dissertation, pedagogical practice
UK-6	Able to determine and implement the priorities of their own activities and ways to improve it based on self-assessment	Undergraduate disciplines	Master's dissertation,

			pedagogical practice
UK-7	Able to search for the necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data received from various sources in order to effectively use the information received to solve problems; evaluate information, its reliability, build logical conclusions based on incoming information and data. Able to search for the necessary sources of information and data, perceive, analyze, memorize and transmit information using digital means, as well as using algorithms when working with data received from various sources in order to effectively use the information received to solve problems; evaluate information, its reliability, build logical conclusions based on incoming information and data.	Undergraduate disciplines	Master's dissertation, pedagogical practice
OPK-5	Able to develop programs for monitoring the results of students' education, develop and implement programs to overcome learning difficulties	Undergraduate disciplines	Master's dissertation, pedagogical practice

4. VOLUME OF DISCIPLINE AND TYPES OF EDUCATIONAL WORK

The total complexity of the discipline is 3 credit units.

*Table 4.1. Types of educational work by periods of mastering EP HE for **full** -time education*

Type of study work		**TOTAL,** acc.	**Semester(s)**			
			1			
Contact work, acc.						
including:						
Lectures (**LK**)						
Laboratory work (**LR**)		10	10			
Practical/seminar sessions (**SZ**)						
Independent work of students, acc.		*86*	*86*			
Control (exam/test with assessment), acc.		*12*	*12*			
The total complexity of the discipline	ac.h.	**108**	**108**			
	credit	**3**	**3**			

5. CONTENT OF THE DISCIPLINE

No. p / p	**Name of the discipline section**	**Contents of the section (topic)**	**Type of study work**
one.	**The role of information in society**	The concept of information. Types of information. Information and its properties Search for information The role of information activity in modern society: economic, social, cultural, educational spheres	LR
2.	**The concept of informatization and information culture**	Informatization of society Information potential of society Fundamentals of information culture	LR

3.	**Information technologies and their evolution**	The concept of information technology Information technology classifications Stages of the evolution of information technology	LR
four.	**The concept of information and educational environment**	Information and educational environment of an educational institution Components of the information and educational environment of an educational institution. Network resources for the formation of an electronic educational environment.	LR
5.	**Multimedia and electronic educational resources**	The concept of multimedia educational resources. Classification of multimedia educational resources. Advantages and disadvantages of using multimedia in education. Requirements for electronic educational resources.	LR
6.	**Digital Security**	The main components of information security Information security tools Protection of personal information	LR

6. LOGISTICS AND TECHNICAL SUPPORT OF THE DISCIPLINE

Table 6.1. Logistics of discipline

Audience type	**Audience equipment**	**Specialized educational / laboratory equipment, software and materials for mastering the discipline** (if necessary)
Lecture	An auditorium for lecture-type classes, equipped with a set of specialized furniture; board (screen) and technical means of multimedia presentations.	
Seminar	An auditorium for conducting seminar-type classes, group and individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and technical means for multimedia presentations.	
computer class	Computer class for conducting classes, group and individual consultations, current control and intermediate certification, equipped with personal computers (in the amount of 12), a board (screen) and technical means of multimedia presentations.	A set of specialized furniture; chalk board; hardware: HP PRO system unit, HP-V2072A monitor, LUMIEN retractable projection screen, Internet access. Microsoft Windows 7 corporate. License No. 5190227, date of issue March 16, 2010 MS Office 2007 Prof, License No. 6842818, date of issue 09/07/2009
For independent work of students	An auditorium for independent work of students (can be used for seminars and consultations), equipped with a set of	

Audience type	Audience equipment	Specialized educational / laboratory equipment, software and materials for mastering the discipline (if necessary)
	specialized furniture and computers with access to the EIOS.	

7. EDUCATIONAL-METHODOLOGICAL AND INFORMATION SUPPORT OF THE DISCIPLINE

Main literature

1. Neetu Dabas Role of Computer and Information Technology in Education System International Journal of Engineering and Techniques - Volume 4 Issue 1, Jan – Feb 2018
2. Zachary J. McDowell, Matthew A. Vetter Wikipedia and the Representation of Reality Routledge 2021 p.140 https://doi.org/10.4324/9781003094081
3. R. Trebor Scholz (ed.) Learning Through Digital Media Institute for Distributed Creativity 2011 p. 340 https://archive.org/details/LearningThroughDigitalMedia/
4. Maria Uther (ed.) Mobile Learning MDPI AG 2019, p. 88 https://www.mdpi.com/books/pdfview/book/1182
5. Diana Perez Marin Information and Communications Technology in the 21st Century Classroom De Gruyter Open 2015, p. 195 https://doi.org/10.2478/9783110401455
6. Seann Dikkers TeacherCraft: How Teachers Learn to Use MineCraft in Their Classrooms unglue.it 2015 p. 165 https://unglue.it/work/146455/
7. J. Herrington, at al. New technologies, new pedagogies: Mobile learning in higher education University of Wollongong 2009 p. 138 http://ro.uow.edu.au/edupapers/91/

additional literature

8. A CURRICULUM FOR SCHOOLS AND PROGRAM OF TEACHER DEVELOPMENT INFORMATION AND COMMUNICATION TECHNOLOGY IN EDUCATION UNESCO 2002, p. 150
9. Richard Fox Information Technology Chapman and Hall/CRC https://learning.oreilly.com/p/register/

Resources of the information and telecommunications network "Internet":

b) databases, information and reference and search systems

RUDN Electronic Library System - RUDN EBS http://lib.rudn.ru/MegaPro/Web
ELS "University Library Online" http://www.biblioclub.ru
EBS Urayt http://www.biblio-online.ru
ELS "Student Consultant" www.studentlibrary.ru
EBS "Lan" http://e.lanbook.com/
http://www.nbmgu.ru/
http://www.priroda.su
http://www.ecosystema.ru
http://www.google.ru
www.elibrary.ru
http://www.maik.ru
http://www.ecoportal.ru
nature.worldstreasure.com, geografia.ru_
"RGO.ru" http://www.rgo.ru/ www.geo2000.nm.ru
http://www.aud itorium.ru, http://www.geog.msu.ru, http://www.rgo2000.nm.ru,

http :// koapp . people . ru .

Educational and methodological materials for independent work of students in the development of the discipline/module:*

1. A course of lectures on the discipline " Computer Technologies in Education / Computer Technologies in Education".
2. Guidelines for students on mastering the discipline "Resource science and the basics of nature management."

* - all educational and methodological materials for independent work of students are placed in accordance with the current procedure on the page of the discipline **in TUIS** !

8. EVALUATION MATERIALS AND SCORE-RATING SYSTEM FOR ASSESSING THE LEVEL OF FORMATION OF COMPETENCES IN THE DISCIPLINE

Evaluation materials for the intermediate certification of students in the discipline "Landscape Science" are presented in Appendix 1 to this work program of the discipline/module.

Evaluation materials for the discipline/module include a list of competencies indicating the stages of their formation; description of indicators and criteria for assessing competencies at various stages of their formation, description of assessment scales; standard control tasks or other materials necessary to assess knowledge, skills and (or) experience of activity that characterize the stages of formation of competencies in the process of mastering the educational program; methodological materials that determine the procedures for assessing knowledge, skills and (or) experience of activity that characterize the stages of the formation of competencies

Developers:

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