PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA NAMED AFTER PATRICE LUMUMBA

Institute of Environmental Engineering

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

Psychology of Environmental Consciousness

course title

Recommended by the Didactic Council for the Education Field of:

44.04.02 Psychological and Pedagogical Education

field of studies / speciality code and title

The course instruction is implemented within the professional education programme of higher education:

Computer Technologies in Education

higher education programme profile/specialisation title

2024 г.

1. COURSE GOAL(s)

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 COURSE OUTCOMES

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

The course implementation is aimed at the development of the following competences:

Competence code	Competence descriptor	Competence formation indicators (within this course)
GC-1	Able to carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy	**GC-1.1** Knows how to solve problematic problems and identify their components and relationships between them
		GC-1.2 Able to search for solutions to a problematic task based on available and reliable sources of information
		GC-1.3 Owns a strategy for solving a problem situation based on a systematic and interdisciplinary approach
GC-2	Able to manage a project at all stages of its life cycle	**GC-2.1** Based on the problem posed, formulates a project task and a way to solve it through the implementation of project management
		GC-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
		GC-2.3 Develops a project implementation plan using planning tools; develops and analyzes alternative project options to achieve the intended results

GC-6	Able to determine and implement the priorities of their own activities and ways to improve it based on self-assessment	**GC-6.1** Able to analyze large amounts of information of professional content
		GC-6.2 Able to analyze, synthesize and optimize solutions to the tasks
GC-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	**GC-7.1** Applies statistical methods in scientific and practical research; computer means of data processing and problem solving
		GC-7.2 Formulates a real data processing problem in terms of a real problem
		GC-7.3 Knows the principles and techniques of modern corporate information culture and the basics of the digital economy
GPC-5	Able to develop programs for monitoring the results of students' education, develop and implement	**GPC-5.1** Knows the ways and methods of organizing monitoring studies, the typology of monitoring, methodological monitoring tools; technology for diagnosing educational results, principles of diagnosing, understands the mechanisms for identifying individual characteristics, prospects for

	programs to overcome learning difficulties	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, defectologist, etc.) in working with students who experience difficulties in mastering the program, as well as with students with special educational needs

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

Discipline **Computer Technologies in Education / Компьютерные технологии в образовании** refers to the Compulsory (Disciplines) Module (block 1 of the curriculum).

Within the higher education programme students also master other disciplines (modules) and / or internships that contribute to the achievement of the expected learning outcomes as results of the course.

Table 3.1

The list of the higher education programme components that contribute to the achievement of the expected learning outcomes

Competence code	Competence descriptor	Previous courses/modules, internships*	Subsequent courses/modules, internships*
GC-1	Able to carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy	Undergraduate disciplines	Pedagogical practice degree Diploma
GC-2	Able to manage a project at all stages of its life cycle	IT in ecology and natural resources management	Pedagogical practice degree Diploma
GC-6	Able to determine and implement the priorities of their own activities and	Undergraduate disciplines	Pedagogical practice degree Diploma

	ways to improve it based on self-assessment		
GC-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	Pedagogical practice degree Diploma
GPC-5	Able to develop programs for monitoring the results of students' education, develop and implement programs to overcome learning difficulties	Undergraduate disciplines	Pedagogical practice degree Diploma

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the discipline is **3** credit units.

Table 4.1. Types of academic activities during the period of the HE program(me) mastering

Types of academic activities	Total hours	Semester(s)			
		1	2	3	4
Contact academic hours					

Types of academic activities	Total hours	Semester(s)			
		1	2	3	4
Lectures					
Lab works	10	10			
Seminars (workshops/tutorials)					
Self-study	*86*	*86*			
Evaluation and assessment (exam; pass/fail grading)	*12*	*12*			
The total course workload hours	**108**	**108**			
credits	**3**	**3**			

5. COURSE CONTENT

Table 5.1. Course Modules and Contents

Title of Course Modules		Content	Types of academic activities
1.	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	LW
2	The concept of informatization and information culture	Informatization of society Information potential of society Fundamentals of information culture	LW
3	Information technologies and their evolution	The concept of information technology Information technology classifications Stages of the evolution of information technology	LW
4	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	LW
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.	LW
6	Digital Security	The main components of information security Information security tools Protection of personal information	LW

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

Classroom for Academic Activity Type	Classroom equipment	Specialized educational / laboratory equipment, software and materials for mastering the course (if necessary)
Seminars	Classroom, equipped with a set of specialized furniture; whiteboard; a set of devices includes portable multimedia projector, laptop, projection screen, stable wireless	
Computer Lab	Computer Lab 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 devices of multimedia presentations.	Classroom, equipped with a set of specialized furniture; whiteboard; a set of devices includes portable multimedia projector, laptop, projection screen, stable wireless Internet connection. Software: Microsoft Windows, MS Office / Office 365, MS Teams, Chrome (latest stable release), Skype
For Self-Study	Classroom for self-study (can be used for seminars and consultations), equipped with a set of devices includes laptop, stable wireless.	

7. RECOMMENDED SOURCES FOR COURSE STUDIES

a) **Main reading:**

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/

b) **Additional reading**

8. A CURRICULUM FOR SCHOOLS AND PROGRAMME 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/

Internet-based sources

б) базы данных, информационно-справочные и поисковые системы

Электронно-библиотечная система РУДН – ЭБС РУДН http://lib.rudn.ru/MegaPro/Web
ЭБС «Университетская библиотека онлайн» http://www.biblioclub.ru
ЭБС Юрайтhttp://www.biblio-online.ru
ЭБС «Консультант студента» www.studentlibrary.ru
ЭБС «Лань» 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.narod.ru.

Learning toolkits for self- studies in the RUDN LMS TUIS

8. MID-TERM ASSESSMENT AND EVALUATION TOOLKIT

Evaluation materials and a point- rating system* for assessing the level of competence formation (part of competences) based on the results of mastering the discipline **Basics of the Circular Economy** are presented in the Appendix to this Work Program of the discipline.

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