



Syllabus Course Program



Information technologies in education

Specialty

011 Educational, pedagogical sciences

Institute

Educational and Scientific Institute of Social and Humanitarian Technologies

Educational program

Pedagogy of high school

Department

Pedagogy and Psychology and Social System Control named after I. A. Ziaziun (301)

Level of education

Master's level

Course type

Selective

Semester

2

Language of instruction

English

Lecturers and course developers



Olga Vitalievna Kvasnyk

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Candidate of Pedagogical Sciences, Associate Professor, Associate Professor of the Department of Pedagogy and Psychology of Social Systems Management named after Academician I.A. Ziazyun, NTU "KhPI".

Author of more than 100 scientific and educational works.

Courses: Leading lecturer in the disciplines: "Information Technologies in Education", "Information Technologies in Psychology", "Psychological Aspects of Communication in Professional Activity", "E-Governance and ICT in Management".

More information about the teacher on the department's website

<https://web.kpi.kharkov.ua/ppuss/uk/portfolio-kvasnik-olgi-vitaliyivni/>



Vorobiova Yevheniia Vyacheslavivna

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Candidate of Pedagogical Sciences, Associate Professor, Associate Professor of the Department of Pedagogy and Psychology of Social Systems Management named after Academician I.A. Ziazyun, NTU "KhPI".

She has 18 years of experience. Author of more than 60 scientific and educational works. Leading lecturer in the disciplines: "Psychology of Management, Marketing and Advertising", "Economic Psychology", "Educational Management", "Facilitation Psychology".

More about the teacher on the department's website

<https://web.kpi.kharkov.ua/ppuss/uk/portfolio-vorobjovoj-yevgeniyi-vyacheslavivni/>

General information

Summary

The discipline is aimed at: mastering modern innovative educational technologies and certain software for creating, collecting, processing and presenting information in the educational space, acquiring practical skills in professional communication using network technologies, acquiring skills to apply the

acquired competencies in information technology in professional activities, developing professional skills, improving pedagogical competence and qualifications..

Course objectives and goals

Providing students with systematized knowledge on the use of information technology in research and educational activities and the formation of practical skills and abilities to work with information with the participation of special programs and services in professional activities.

Format of classes

Lectures, practical classes, consultations. Final control – exam.

Competencies of specialization

GC 5 Ability to adapt and act in a new situation.

GC 1 Ability to think abstractly, analyze and synthesize.

GC 2 Ability to search, process and analyze information from various sources.

GC 3 Ability to apply knowledge in practical situations.

GC 4 Ability to learn and master modern knowledge.

GC 7 Ability to interpersonal interaction.

GC 8 Ability to act socially responsibly and consciously.

SC3 Ability to take into account the diversity and individual characteristics of students in the planning and implementation of the educational process in an educational institution

SC1 Ability to design and research educational systems

SC4 Ability to provide expertise and advice on educational policy and innovation in education

SC9 Ability to use modern information, communication and digital technologies in educational and research activities

SC 10 Ability to possess a system of knowledge about the conceptual foundations of modern didactic systems and educational technologies in higher education; ability to clearly define the purpose of the educational process, select appropriate content, methods, technologies; apply variable forms of teaching

Learning outcomes

ELO2. Use modern digital technologies and resources in professional, innovative and research activities.

PLO 3 Form pedagogically appropriate partnership interpersonal interaction, carry out business communication, clearly and unambiguously convey their own thoughts, conclusions and arguments on education and pedagogy to specialists and the general public, conduct problematic and thematic discussion

PLO5 Organize the educational process on the basis of student-centered, competence-based, contextual approaches and modern achievements of educational and pedagogical sciences, manage educational and cognitive activities, objectively evaluate the learning outcomes of students.

PLO7 Create an open educational and scientific environment that is favorable for students and aimed at ensuring learning outcomes.

PLO 8 Develop and teach educational courses in higher education institutions, using the methods, tools and technologies necessary to achieve the goals.

PLO9 Search for the necessary information on educational/pedagogical sciences in print, electronic and other sources, analyze, systematize it, assessing its reliability and relevance.

ELO 10 Make effective, responsible decisions on management issues in the field of education/pedagogy, including in new or unfamiliar environments, in the presence of multiple criteria and incomplete or limited information.

UN 14 Possess a system of knowledge about the conceptual foundations of technology and teaching methods in higher education; ability to determine the purpose of the educational process, select appropriate content, methods, technologies; apply variable and innovative forms of teaching

Student workload

The total volume of the discipline is 120 hours: lectures - 16 hours, practical classes - 32 hours, independent work - 72 hours.

Course prerequisites

To successfully complete the course, you must have knowledge and practical skills in the following disciplines: "Psychology, Pedagogy, Foreign Language, Didactic Systems and Technologies in Education.

Features of the course, teaching and learning methods, and technologies

During the study of the discipline, it is expected to work with tests to check the level of knowledge, surveys, presentations at practical classes, and practical tasks.

Teaching methods in teaching the discipline "Information Technology in Pedagogical and Scientific Activities" are

- verbal (conversation, discussion, lecture, work with literary and information sources)
- visual (illustration with practical examples)
- practical (practical exercises).

Active learning methods used: discussion, brainstorming, problem-based methods, research method, active dialogue, problem-based learning method, graphic facilitation, conversation, practical exercises, teamwork, pair work, team project.

Training materials are available to students in the Google Disk cloud environment.

Program of the course

Topics of the lectures

Topic 1. Theoretical aspects of the emergence and functioning of the information space

Theoretical and practical aspects of information technology in modern scientific thought. Historical aspects of the development and formation of IT. The concept of information and its types. Information space. Ways of working with information. Technologies and tools for processing text, digital, graphic and sound information. MS Office software package. Principles and programs for building algorithms. Opportunities and features of Google services. Google academy. Search for information to process the results of your own research.

Topic 2. The main aspects of effective interaction in the information space

Special scientific services and social networks. The main means of presenting one's own image through special methods of posting information. Author's authority. The etiquette of communication between a researcher and a teacher on the Internet. Regulatory and legal principles of interaction taking into account the specifics of information networks. Technologies for working in databases and information networks. Features of the development of training course materials using basic information technologies. Packages for the development of multimedia training courses. Grants and their search.

Topic 3. Preparation and creation for publication of major professional achievements in the scientific and educational fields

The main sources on the requirements and principles of publication. Specifics of publication in the information space. Copyright protection and academic integrity. Scientific content blog. Creating a preprint and poster presentation. Services for creating and publishing a publication. Leading services in publishing the results of activities.

Topic 4. Presentation of the results of scientific research and pedagogical activity by means of ICT

Requirements for presentations. Types of programs for presenting the results of professional activities. Data visualization and impact on "consumers" of educational and scientific products by means of IT. Special multi-program tools for presenting the course and results of research. Advantages and disadvantages of presentation through ICT. Graphical representation of data. Types of presentation. Types of visualization.

Topic 5. Information environment of an educational institution

Creating an information and educational resource using the DREAMWEAER Html page editor program. Psychology of management in the content and design of educational resources (web page design). Educational services of the Internet. Model of an electronic training course. The possibilities of hypertext technology for the development and creation of an electronic training course. Forms of implementation of an e-learning course and its place in the educational process. Distance learning.

Topic 6. Educational information space, features of its creation.

Educational technologies that ensure the quality of the learning process and the realization of the goals of modern education with the help of information tools. Active position and ability to self-manage a scientist.

Topics of the workshops

Topic 1: Work on improving information retrieval skills, search engines and services

With the help of gadgets and the Internet, show the basic search techniques, through the Google system, search databases of scientific direction. Find relevant research on the topic of the dissertation (3-5) through a special Google service scholar not older than 5 years. Create a notification system, use Google services. Programs for processing and systematizing sources.

Topic 2. The main aspects of interaction in the educational space

Explore the virtual image of a scientist and teacher, its gradation using special Internet tools. Using special-purpose social networks, find scientists working on a similar problem and characterize them. The result of the joint discussion: recommendations for working out the research problem. Work out the structure of the portfolio (on the example of sites, orsid, etc.).

Topic 3. Preparation and creation of major professional achievements in the scientific and educational fields for publication

Involvement of the Microsoft Office suite and other services in the creation of publications. Analyze 5 key services for publishing research results.

Investigate the features of scientometric databases, repositories, register and post publication materials.

Topic 4. Presentation of research and teaching results using ICT tools

Study of ICT presentation of results. Research of the possibilities of modern information technologies for creating presentations. Research of data visualization technologies, graphical representation. Services for collective presentation of the results of collective problem solving in a group (infographics, scribing, etc.). Study of advantages and disadvantages. Creating different types of representations.

Topic 5. Information environment of an educational institution

Research of services and tools for organizing the learning process, ensuring interactivity and dynamism of this process. Analysis of services and tools for organizing the learning process. Test services for interactivity and dynamism of the learning process. Create a fragment of a training session using interactive services.

Topic 6: Educational technologies that ensure the quality of the learning process and the realization of the goals of modern education with the help of information tools

Skills of working with educational platforms. Mastering the main components of the course using modern educational platforms, including Microsoft Office 365 and Moodle.

Self-study

Topic 1: Work on improving information retrieval skills, search engines and services

An annotated list of publications on the research topic presented online using specialized search engines and social networks. Select your research topic for analysis. Analyze the most relevant services, create a query, and analyze the data. Analyze the results in terms of quality, relevance, and effectiveness of the information in accordance with the specified search, which correspond to the specifics of your dissertation research.

Topic 2. The main aspects of interaction in the educational space

Create a portfolio in a special form, post it online. Choose a portfolio form, fill it out according to the requirements. Identify advantages and possible prospects. Create a self-presentation. Create an image of a scientist-teacher with the help of information technologies and networks (for example, scholars)).

Topic 3. Preparation and creation of the main professional achievements in the scientific and educational spheres for publication

Creating a publication based on the results of the dissertation in accordance with the approved standards. Create a publication (e.g., abstract, article) based on the annotated various sources found on the topic of your research; Choose a service for publishing a publication, analyze the feasibility of publishing a publication, check the protection of information, use experience in academic integrity. Check the publication for plagiarism before publishing.

Topic 4. Presentation of research and teaching results using ICT tools

Prepare a presentation of the speech in accordance with the research topic in accordance with the approved requirements in one of the modern services. Choose a service for presenting research results and justify the choice. Create a presentation program and materials, present the development.

Topic 5. Information environment of an educational institution

Research of services and tools for organizing the learning process, ensuring interactivity and dynamism of this process. Analyze services and tools for organizing the educational process and test services for interactivity and dynamism of the educational process. Create a fragment of a training session using interactive services Completion of an individual task. Develop a fragment of learning outcomes monitoring. Create a fragment of a lesson using modern educational services and programs

Topic 6: Educational technologies that ensure the quality of the learning process and the realization of the goals of modern education with the help of information tools

Creating a fragment of the discipline using tools used for distance learning.

Course materials and recommended reading

Basic literature

1. Kukhareno V.M., Bondarenko V.V. External distance learning in Ukraine: Monograph / edited by V.M. Kukhareno, V.V. Bondarenko - Kharkiv: Municipal Printing House, 2020. 409 c.

2. Shakhova G.A., Demydova Y.E., Kvasnyk O.V. Fundamentals of computer science, information technology and computer ergonomics for the humanities: a textbook. Kharkiv: Panov A.M., 2019. 118c.

3. Sereda N.V., Kvasnyk O.V. Fundamentals of public speaking: a textbook. Kharkiv: NTU "KHPI", 2020. 304 c.

4. Information technologies and technical means of teaching: a textbook for university students: Borys Grinchenko Kyiv University. K. : Center for Educational Literature, 2018. 240 c.

5. Buynytska O. P. Information technologies and technical means of teaching: a textbook - K.: Center for Educational Literature, 2012. 240 c.

6. Computer technologies in education: a textbook / Y. S. Zharkikh, S. V. Lysochenko, B. B. Sus, O. V. Tretiak. Kyiv: Kyiv University Publishing and Printing Center, 2012. 239 c.

6. Organization of pedagogical interaction of participants in the educational process in the computer-oriented learning environment of a higher education institution. Information Technologies and Learning Tools, 2018, Vol. 67, No. 5. Kyiv, pp. 199-212.

7. Poyasok TB, Bespartochna OI, Kostenko OV. Modern technologies of the educational process: an interactive textbook. Kremenchuk: PE Shcherbatykh O.V., 2020. 228 c.

8. Sysoieva S.O. Interactive technologies for adult learning: a study guide. KYIV: EKMO PUBLISHING HOUSE, 2011. 324 c..

Supplementary literature

1. Kalinina L.M., Noskova M.V. Google services for teachers. First steps of a beginner / L.M. Kalinina, M.V. Noskova: Study guide - Lviv, ZUKC, 2013. 182 c.

2. Phenomenon of innovations: education, society, culture: monograph; edited by V. Kremen. K.: Pedagogical thought, 2008. 472 c.

3. Gurevych R.S. Information technologies of education: innovative approach: a textbook / edited by R.S. Gurevych Vinnytsia: LLC firm "Planer", 2012. 348 c.

4. Hamburg Declaration on Adult Learning. The Fifth International Conference, on Adult Education. - Hamburg. - Access mode: <http://www.unesco.org/education/uie/confintea/declaeng.htm>.

5. Loginov S.P. Foreign experience in the use of information and communication technologies in distance learning. History and 10 prospects - [Electronic resource]. - Access mode: <http://ito.edu.ru/2008/Kursk/II/II-0-25.html>.

6. Zabolotnyi V.F. Didactic principles of multimedia application in the formation of methodological competence of future physics teachers: PhD thesis for the degree of Doctor of Pedagogical Sciences: specialty 13.00.02 "Theory and methods of teaching (physics)" / V.F. Zabolotnyi. Kyiv, 2010. 38 c.

7. Law of Ukraine "On the National Program of Informatization" No. 554-IX of 13.04.2020, VVR, 2020, No. 37, p. 277 - comes into force on January 1, 2021

8. Free Tools for Teachers - Free Educational Technology - [Electronic resource]. - Access mode: <http://www.elearningindustry.com/321-free-tools-for-teachers-free-educational-technology>
9. Using Technology to Enhance Teaching & Learning - SMU - [Electronic resource]. - Access mode: <https://www.smu.edu/Provost/CTE/Resources/Technology>.
10. <https://tech.ed.gov/files/2017/01/NETP17.pdf> - [Electronic resource]. - Access mode: Reimagining the Role of Technology in Education: 2017 National Education Technology Plan Update.

Criteria for evaluating student performance and distribution of points	Rating scale		
	Total points	National	ECTS
100% of the final grade consists of the results of the assessment in the form of a test (20%) and current assessment (80%). Credit: written assignment (2 questions on theory + practical assignment with analytical conclusion) and an oral report. Current assessment: 4 online tests (60%) and a practical assignment (20%).	90–100	Excellent	A
	82–89	Good	B
	75–81	Good	C
	64–74	Satisfactory	D
	60–63	Satisfactory	E
	35–59	Unsatisfactory (requires additional learning)	FX
	1–34	Unsatisfactory (requires repetition of the course)	F

Norms of academic integrity and course policy

The student must adhere to the Code of Ethics of Academic Relations and Integrity of NTU "KhPI": to demonstrate discipline, good manners, kindness, honesty, and responsibility. Conflict situations should be openly discussed in academic groups with a lecturer, and if it is impossible to resolve the conflict, they should be brought to the attention of the Institute's management. Regulatory and legal documents related to the implementation of the principles of academic integrity at NTU "KhPI" are available on the website: <http://blogs.kpi.kharkov.ua/v2/nv/akademichna-dobrochesnist/>

Approval

Approved by

Date, signature

Head of the department
Nina PIDBUTSKA

Date, signature

Guarantor of the educational program
Natalia SEREDA