**Syllabus**
Course Program

# Didactic systems and educational technologies in higher institutions

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
Special (professional), Mandatory

Semester
2

Language of instruction
English

## Lecturers and course developers


**First name and surname**

olena.lapuzina @khpi.edu.ua
Candidate of Pedagogical Sciences, Associate Professor, Professor NTU "KhPI"


Work experience - 35 years. The author of more than 140 scientific, educational and educational-methodological works. Leading lecturer in the disciplines: "Monitoring the quality of education in higher education", "Psychological and pedagogical principles of safety in education", "Didactic systems and educational technologies in higher education", "Leadership in teaching activities", "Project management in education", "Fundamentals of higher school pedagogy".
More about the lecturer on the department's website
https://web.kpi.kharkov.ua/ppuss/uk/portfolio-lapuzinoyi-oleny-mykolayivny/

## General information

### Summary


The purpose of teaching the educational discipline "Didactic systems and educational technologies in higher institutions" is to provide students of higher education with systematized knowledge of the theoretical foundations of educational technologies and systems in higher education, the structure of various types of curricula, programs, and the formation of practical skills in their effective use of various types of forms and methods when organizing the educational process and conducting training classes.


### Course objectives and goals

Formation of a knowledge system on project management technology; and features of their application in the educational process. Development of organizational skills and effective implementation of educational projects and pedagogical research. Development of practical skills in forming a management team and organizing its effective activities. Development of practical and procedural skills of approbation of the results of project implementation on the basis of academic integrity.

### Format of classes

Lectures, practical classes, consultations, self-study. Final control in the form of an exam.

### Competencies

General competences:
GC 1. Ability to abstract thinking, analysis and synthesis.
GC 2. Ability to search, process and analyze information from various sources.
GC 3. Ability to apply knowledge in practical situations.
GC 4. The ability to learn and master modern knowledge.
GC 6. The ability to identify, pose and solve problems.
GC 8. The ability to act socially responsibly and consciously.
GC 10. Ability to conduct research at the appropriate level.

Competencies of specialization:
CS 2. The ability to apply and develop new approaches to solving problems of a research and/or innovative nature in the field of education and pedagogy.
CS 9. Ability to use modern information and communication and digital technologies in educational and research activities.

### Learning outcomes

LO 1. To know at the level of the latest achievements the concept of development of education and pedagogy, the methodology of using project management technology.
LO 2. Use modern digital technologies and resources in professional, innovative and research activities.
LO 3. To form a pedagogically expedient partner interpersonal interaction, to carry out business communication, to clearly and unambiguously convey one's own reasoning, conclusions and arguments on issues of education and pedagogy to specialists and the general public, to conduct a problem-thematic discussion.
LO 4. Communicate freely in national and foreign languages orally and in writing to discuss the results of educational and professional activities, presentation of scientific research and innovative projects.
LO 6. Develop and implement innovative and research projects in the field of education/pedagogy and interdisciplinary level in compliance with legal, social, economic, ethical norms.
LO 9. Search for the necessary information on educational/pedagogical sciences in printed, electronic and other sources, analyze, systematize it, assessing reliability and relevance.

### Student workload

The total volume of the course is 164 hours (5 ECTS credits): lectures - 32 hours, workshops - 32 hours, self-study - 100 hours.

### Course prerequisites

To successfully pass the course, you need to have knowledge and practical skills in the discipline: "Fundamentals of higher education pedagogy" and "Monitoring the quality of education in higher education".

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

Lectures are conducted interactively using multimedia technologies. Practical classes use a project approach to learning, game methods, and focus on the application of innovative pedagogical information technologies in educational monitoring. Active learning methods that are used: discussion, brainstorming, problem-based methods, the method of specific practical situations, business and role-playing games. Study materials are available to students through OneDrive of NTU KhPI.

## Program of the course

### Topics of the lectures

Topic 1. Introduction to the discipline. Didactic systems of higher education.
Concept of higher school didactics. Stages of the learning process.
Topic 2. Didactic technologies in higher education.

Technological approach to the implementation of educational activities in higher education. The structure of pedagogical technology. Types of pedagogical technologies. Technologies of modular training. Distance learning technology.

Topic 3. Laws, regularities and principles of education.

System of learning principles. Subjective regularities of the learning process.

Topic 4. Types and styles of learning.

Explanatory and illustrative teaching. Programmed training. Project training. Reproductive learning style. Creative learning style. Emotional and valuable learning style.

Topic 5. Specialist training program and educational plans.

Content of education in institutions of higher education. Normative documents defining the content of education. Functions of the educational discipline program. Different types of educational literature.

Topic 6. Forms and methods of training in higher education.

Organizational forms of training in higher education institutions. Methods and technologies of education.

Topic 7. Problem-oriented training as an effective technology in the formation of leadership qualities of a future specialist.

Methodology for the development of Problem-oriented training.

Topic 8. Self-guided students' work as an effective technology in the formation of leadership qualities of the future specialist.

Methodology for the development of Self-guided students' work.

### Topics of the workshops

Topic 1. The essence of students' educational activities.

Topic 2. Concepts of learning theory. Interactive, innovative and information technologies of learning and various didactic systems of learning in higher education.

Topic 3. External criteria for the effectiveness of the learning process. Tasks of higher school didactics.

Topic 4. Basic issues of distance learning technology. Characteristics of different types and styles of learning.

Topic 5. Laws of learning. Patterns of learning. External and internal patterns of learning.

Topic 6. The structure and types of pedagogical technology. System of learning principles. Distance learning technology. The principle of modularity.

Topic 7. Dogmatic teaching. Explanatory and illustrative teaching. Types of lectures and seminars in higher education institutions.

Topic 8. Problem-based learning. Distance learning. Reproductive learning style. Creative learning style.

### Topics of the laboratory classes

Laboratory work within the discipline is not provided.

### Self-study

The course involves the completion of a term paper in the form of an essay and a computer presentation in the Power Point program. The result of such work is the student's report in class and readiness to answer questions according to the chosen topic. calculations and modeling is drawn up in a written report. Students are recommended a list of topics and additional materials (videos, articles) for independent study and analysis.

## Course materials and recommended reading

Basic literature

1. Library of Congress Cataloging in Publication Data Ahandbook for teaching and learning in higher education : enhancing academic practice / [edited by] Heather Fry, Steve Ketteridge, Stephanie Marshall.– 3rd ed.

2. J. Keengwe, M. Bhargava, Mobile learning and integration of mobile technologies in education. – Education and Information Technologies, 19 (4) (2014), pp. 737-746

3. S. Dreimane, R. Upenieks, Intersection of serious games and learning motivation for medical education: A literature review. – Research Anthology on Developments in Gamification and Game-Based Learning (2022), pp. 1938-1947

4. P.L. Rogers, Barriers to adopting emerging technologies in education. – Journal of educational computing research, 22 (4) (2000), pp. 455-472

5. Haddad, W. D., & Draxler, A. (2002). The dynamics of technologies for education. Technologies for education potentials, parameters, and prospects, 1, 2-17.
6. C.I. Büyükbaykal. Communication technologies and education in the information age. – Procedia-Social and Behavioral Sciences, 174 (2015), pp. 636-640
7. A. Vakaliuk, O.M. Spirin, N.M. Lobanchykova, L.A. Martseva, I.V. Novitska, V.V. Kontsedailo Features of distance learning of cloud technologies for the quarantine organisation's educational process. – J. Phys. Conf. Ser., 1840 (1) (2021, March), Article 012051.

Supplementary literature

1. M.A. Camilleri, A.C. Camilleri. Digital learning resources and ubiquitous technologies in education. – Technology, Knowledge and Learning, 22 (1) (2017), pp. 65-82
2. M. Beardsley, L. Albó, P. Aragón, D. Hernández-Leo. Emergency education effects on teacher abilities and motivation to use digital technologies. – British Journal of Educational Technology (2021)
3. A.J. Cañas, J.W. Coffey, M.J. Carnot, P. Feltovich, R.R. Hoffman, J. Feltovich, J.D. Novak. A summary of literature pertaining to the use of concept mapping techniques and technologies for education and performance support. – Report to the Chief of Naval Education and Training (2003), pp. 1-108
4. M.I. Qureshi, N. Khan, H. Raza, A. Imran, F. Ismail. Digital Technologies in Education 4.0. Does it Enhance the Effectiveness of Learning? – A Systematic Literature Review. International Journal of Interactive Mobile Technologies, 15 (4) (2021)
5. K. Yordanova, Mobile learning and integration of advanced technologies in education. – Proceedings of the 2007 international conference on Computer systems and technologies (2007, June), pp. 1-6.

## Assessment and grading

### Criteria for assessment of student performance, and the final score structure

100% of the final grade consists of assessment results in the form of an exam (40%) and ongoing assessment (60%).
Exam: written assignment (3 questions on theory) and oral presentation.
Current assessment: 1 online module test and individual assignment (20% each).
A rating system is also provided.

### Grading scale

| Total points | National | ECTS |
|---|---|---|
| 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<br>Oleksandr ROMANOVSKY |
|---|---|---|
| | Date, signature | Guarantor of the educational program<br>Tetyana SOLODOVNIK |