



## Syllabus of the educational discipline «Systems and systems thinking»

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|--|---|
| <b>Specialty</b>   | <i>All specialties</i>  |
| <b>Educational programs</b>                                  | <i>All programs</i>   |
| <b>Education level</b>                                       | <i>Doctor of philosophy</i>   |
| <b>Discipline status</b>                                     | <i>Selective</i>  |
| <b>Language of teaching, studying and assessment</b>         | <i>English, Ukrainian</i>   |
| <b>Course / semester</b>                                     | <i>1-2 course</i>   |
| <b>Number of credits ECTS</b>                                | <i>5</i>  |
| <b>Distribution by types of trainings and hours of study</b> | <i>Lectures – 20 hours.<br/>Practical training – 20 hours.<br/>Independent training – 110 hours.</i>  |
| <b>Form of final assessment</b>                              | <i>Pass</i>   |
| <b>Кафедра</b>   | <i>Accounting and Business Consulting Department<br/>Kharkiv, 61166, 9a Nauki Ave.,<br/>main building of S. Kuznets KhNUE, r. 229<br/>+38(057) 702-18-30, (additional 3-37)<br/>department website: <a href="http://kafacco.hneu.edu.ua">http://kafacco.hneu.edu.ua</a></i> |
| <b>Teacher (-s)</b>  | <i>Andriy Pylypenko, Dr.Sc(Econ), prof</i>  |
| <b>Teacher's contacts</b>                                    | <i>e-mail: <a href="mailto:andriy.pylypenko@hneu.net">andriy.pylypenko@hneu.net</a></i>   |
| <b>Days of the classes</b>                                   | <i><u>according to the current class schedule</u></i>   |
| <b>Consultations</b>   | <i>At the Accounting and Business Consulting Department:<br/>full-time (according to the schedule of consultations) and<br/>individual (chat in PNS)</i>  |

**The academic discipline aims** to develop the capability to address complex problems of the vital activities of complex socio-economic systems, as well as to provide practical tools for synthesizing such systems and supporting their progression through the life cycle stages

### Structural and logical scheme of studying the discipline

| <b>Prerequisites</b>                                | <b>Postrequisites</b>                                  |
|---|--|
| A philosophy of science                             | Thesis   |
| Methodology and organization of scientific research | Mathematical methods and models in scientific research |

### Content of the educational discipline

**Content module 1.** *Fundamental principles of system modeling and development of system thinking*

**Topic 1.** The systems theory evolution and the genesis of system thinking

**Topic 2.** Ontology and communication in system thinking

**Topic 3.** Identification of system levels and the target system for research

**Topic 4.** Architecture and contexts of system description

**Topic 5.** Modeling the lifecycle of a system

**Content Module 2.** *Practical Application of System Thinking Tools*

**Topic 6.** Formulation of a system development project

**Topic 7.** System dynamics and causal loop diagram



**Topic 8. Theory of constraints and system approach to continuous improvement**

**Topic 9. System management and entrepreneurship**

**Topic 10. Applying system thinking in the strategic process**

**Material and technical support (software) of the discipline**

Software: *Coda.io; KhNEU personal training system, ZOOM*

**Assessment system of learning outcomes**

The University employs a 100-point accumulative grading system to evaluate the educational outcomes of higher education students.

Current control is conducted during lectures, practical sessions, laboratory work, and seminars. Its primary aim is to verify the readiness level of the higher education applicant for undertaking specific tasks, and it is quantified by the total points accrued. For the «Accounting and control design in enterprise management», the form of semester control is a test: the maximum amount is 100 points; the minimum amount is 60 points.

The final control includes semester control and certification of the student.

Semester control is conducted in the form of a test.

The final grade in the discipline is determined by summing all the points obtained during the current control.

During the teaching of the discipline, the following control measures are used: evaluation of tasks in practical classes, laboratory work presentation, written tests, essays.

*More detailed information on the evaluation system is provided in the discipline's curriculum (technological map).*

**Discipline policies**

Teaching discipline is based on the principles of academic integrity - a set of ethical principles and statutory rules that should guide participants in the educational process during training, teaching and conducting scientific (creative) activities to ensure confidence in learning outcomes and / or scientific (creative) achievements. Violations of academic integrity are: academic plagiarism, self-plagiarism, fabrication, falsification, write-off, deception, bribery, biased evaluation. For violation of academic integrity, students may be re-assessed. If the task is completed later than the deadline without good reason, it is not accepted for assessment.

*More detailed information about competencies, learning outcomes, teaching methods, assessment forms, independent training is given in the Syllabus (working plan )of the educational discipline*