

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ ЕКОНОМІЧНИЙ УНІВЕРСИТЕТ  
ІМЕНІ СЕМЕНА КУЗНЕЦЯ

**ЗАТВЕРДЖЕНО**  
на засіданні кафедри  
менеджменту та бізнесу  
Протокол № 1 від 25.08.2023 р.

**ПОГОДЖЕНО**  
Проректор з навчально-методичної роботи



Каріна НЕМАШКАЛО

**МЕТОДОЛОГІЯ ТА ОРГАНІЗАЦІЯ НАУКОВИХ ДОСЛІДЖЕНЬ**  
**робоча програма навчальної дисципліни (РПНД)**

Галузь знань **05 Соціальні та поведінкові науки**  
Спеціальність **051 Економіка**  
Освітній рівень **третій (освітньо-науковий)**  
Освітня програма **Економіка**

Статус дисципліни **обов'язкова**  
Мова викладання, навчання та оцінювання **англійська**

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Тетяна ЛЕПЕЙКО

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Харків  
2023



## INTRODUCTION

In the context of constant renewal of science, new directions, approaches, and technologies are being formed. The rapid increase in the role of science in the modern world requires from the researcher a significant level of theoretical knowledge and practical skills in conducting scientific research and its effective organization. The search for adequate scientific results becomes possible only through the use of large amounts of accumulated knowledge, which can be involved in the process of conducting and implementing scientific research. For a scientist, the ability to organize research activities and effectively use already known scientific developments, as well as perfect knowledge of the methodology of scientific research (MND) become important.

The purpose of teaching this course is the formation and development of the ability to apply methodological principles and methods of scientific activity in a qualified manner.

The objectives of the course are: to form a holistic theoretical idea of the general methodology of scientific creativity among graduate students; to acquaint with the requirements for scientific research, the basics of their planning, organization; to equip graduate students with the tools of scientific methods that can be usefully applied in the process of researching complex systems, economic, pedagogical, informational, etc.; to acquaint with the requirements for the design of various research works; to form postgraduate students' skills of effective work with sources of information; to transfer to graduate students a set of knowledge and skills that will help them in the future to carry out activities of a search and creative nature in the process of performing their professional duties.

The subject of the course is the methods of scientific research, as well as the theoretical and methodological foundations of the organization of research activities.

The object of the course is methodology as a doctrine of the organization and conduct of scientific research.

The learning outcomes and competencies that are formed by the course are given in table 1.

Table 1

### Learning outcomes and competencies that are formed by the course

Learning outcomes	Competencies
LO 01	GC 02, SC 01
LO 02	GC 01, SC 08
LO 03	SC 03
LO 04	SC 03, SC 05
LO 05	SC 01
LO 08	GC 02
LO 09	GC 01, SC 05
LO 10	SC 03

where LO 01. Acquire advanced conceptual and methodological knowledge in economics, management of socio-economic systems and at the interface between subject areas, as well as research

skills sufficient for doing fundamental and applied research at the level of world achievements in the relevant field.

LO 02. Deeply understand basic (fundamental) principles and methods of economic sciences, as well as methodology of scientific research, create new knowledge in the field of economics in order to achieve economic and social development in the context of globalisation.

LO 03. Develop and research fundamental and applied models of socio-economic processes and systems, effectively use them to obtain new knowledge and/or create innovative products in economics and related interdisciplinary areas.

LO 04. Apply modern tools and technologies for searching, processing and analysing information, in particular, statistical methods of analysing large data sets and/or complex structures, specialised software and information systems.

LO 05. Propose new solutions, develop and implement scientific projects that provide an opportunity to rethink existing and create new holistic knowledge and/or professional practice and solve significant and fundamental and applied problems of economic science, taking into account social, economic, environmental and legal aspects; ensure the commercialisation of scientific research results and adhering to intellectual property rights.

LO 08. Plan and carry out empirical and/or theoretical research in the field of economics and related interdisciplinary areas, critically analyse the results of own research and results of other researchers in the context of entire complex of modern knowledge regarding the problem under study.

LO 09. Formulate and test hypotheses; use appropriate evidence to substantiate conclusions, in particular, the results of theoretical analysis, empirical research and mathematical and/or computer modelling, available literature data.

LO 10. Apply creative technologies and mathematical methods and models when doing scientific research and detecting cause-and-effect relationships and trends in the development of economic phenomena and processes.

GC 01. Ability to think abstractly, carry out analysis and synthesis.

GC 02. Ability to search, process and analyse information from various sources.

SC 01. Ability to do original research, achieve scientific results that create new knowledge in economics and related interdisciplinary areas and can be published in leading scientific publications in economics and related fields.

SC 03. Ability to use modern methodologies, methods and tools of empirical and theoretical research in the field of economics, computer modelling methods, modern digital technologies, databases and other electronic resources, specialised software in scientific and scientific-pedagogical activities.

SC 05. Ability to detect, deeply analyse and solve problems of a research nature in the field of economics, taking into account economic risks and possible socioeconomic consequences, assess and ensure the quality of performed research, including studies on issues of European and Euro-Atlantic integration.

SC 08. Ability to determine new trends and tendencies in the development of socio-economic phenomena and processes, detect cause-and-effect relationships using creative technologies in the implementation of scientific research.

## **COURSE CONTENT**

### **Content module 1. Methodological bases of scientific research**

#### **Topic 1. Science and scientific research.**

Science as a way of learning about the world. Functions of science. Classification of Sciences. A problem, a hypothesis. The concept of a scientific theory. The Standard Model of Scientific Theory. Structure of scientific theories.

Methodological and heuristic principles of theory construction. Main functions of a scientific theory. Scientific paradigm. Knowledge and science as a way of cognition of the world. Notions of scientific knowledge. Science and scientific research (exploratory, fundamental and applied). (empirical, theoretical, industrial), theory,. Concept. Operations with concepts. The concept of a scientific school, normal science, scientific revolution.

### **Topic 2. Scientific method. Research Methodology**

2.1. Scientific method. The subject of the methodology of science. Stages of research work. Correlation of the purpose and objectives of the study. Basic elements of research methodology. Statement of the research topic, problem, purpose and objectives of the research. Relevance of the topic. Functions of the hypothesis. . Originality. Practical significance of the work, analysis of interested organizations and individuals. Structural model of the subject area. . General characteristics of the methods of science. Classification of scientific research methods. Technology of scientific research. Research methods. Research results.

### **Topic 3. Empirical Research Methods and Empirical Research Data Processing Tools**

Basic Concepts of Measurement Theory. Observation as a method of cognition. Experiment as a special form of scientific knowledge. Empirical research methods. General and special methods of scientific research. Characteristics and functions of research methods. Methods of expert evaluation. Tools for processing empirical research data.

### **Topic 4. Theoretical research methods**

Principles are tools of knowledge. Abstraction and idealization. Methods of analysis, classification and construction of theories. Theoretical research methods. Scientific Laws, Regularity, and Randomness.

### **Topic 5. Systematic research method. Methodology for Studying Complex Systems**

System method. System approach and system analysis. Self-organization of systems and synergetics. Synergetic analysis of complex systems. Methodology for the study of complex systems. Formation of a systematic research method. Specifics of the system method and classification of systems. Modern methods of mathematical description of complex systems (phase space, chaos theory, attractors, fractals).

### **Topic 6. Models and Modeling Method in Scientific Research**

The concept of a model. Classification of models. Quality of models and its evaluation. Adequacy of models. Truth and Models. Dynamics of models. Modeling method. Computer modeling.

## **Content module 2**

### **Technology and organization of scientific research**

#### **Topic 7. Organization of scientific activities and scientific research**

Scientific activity, its varieties. Subjects of scientific activity. Forms of organization of scientific activity. Contract for scientific activities. Technology of scientific research. Preparation of applications for the state budget topic of scientific research. Planning a scientific study. Examination of scientific achievements.

#### **Topic 8. Information support of scientific research**

Scientist's information space. National System of Scientific and Technical Information. Technology of working with information sources. Electronic resources. Theory and Practice of Dynamic Reading and Rational Work with Scientific Literature. Publication of research results. Scientometric databases of publications. Impact factor. Principles and rules of scientific integrity in scientific research.

#### **Topic 9. Project forms of scientific research**

Forms of financing research activities. Methods of project management in the management of scientific research. Preparation of grant applications.

#### **Topic 10. Technology of work on the dissertation. Presentation, protection and implementation of research results**

Organization of work on the dissertation. The system of attestation of scientific personnel. Choosing a research topic. Drawing up a dissertation plan. Basic requirements for the design of dissertations. Development of a presentation of scientific research. Content and structure of the report. Implementation of the results of completed scientific research. Efficiency of research results: criteria, calculation. Dissertation defense. Implementation of the results of scientific research in the programs of academic disciplines.

#### **Topic 11. Technology and Psychology of Scientific Creativity. Development of abilities for scientific activity**

Principles of Systems Thinking in Scientific Creativity. . Methods of activating scientific creativity. Self-organization of scientific work. Abilities for scientific activity and their development. Factors that determine the solution of a scientific problem. Obstacles to creative thinking. Discussion as a form of scientific communication. Strategy and tactics of polemics. Ways of Argumentation in Scientific Discussion.

The list of practical (seminar) studies in the course is given in table 2.

Table 2

### List of practical (seminar) studies

Name of the topic and / or task	Content
Practical study 1. Topic 1.	Methodological and heuristic principles of building theories. Concept. Operations with concepts.
Practical study 2 Topic 2.	Statement of the research topic, problem, goal and tasks of the research. Actuality of theme. Hypothesis functions. Scientific novelty.
Practical study 3 Topic 3.	Experiment as a special form of scientific knowledge. Empirical research methods.
Practical study 4 Topic 4.	Principles of science. Methods of analysis, classification and construction of theories. Theoretical research methods. scientific laws,
Practical study 5 Topic 5.	Presentations of own research.
Practical study 6. Topic 6.	System method. System approach and system analysis. Self-organization of systems and synergy. Presentations of own research.
Practical study 7. Topic 7.	Quality of models and its assessment. Adequacy of models. Presentations of own research.
Practical study 8. Topic 8.	Contract for scientific activity. Drafting applications on the state budget topic of scientific research. Planning of scientific research. Examination of scientific works.
Practical study 9. Topic 9.	Presentations of own research.
Practical study 10. Topics 10.	Practice of dynamic reading and rational work with scientific literature. Publication of the results of scientific research. Scientometric databases of publications.
Practical study 11. Topic 11.	Forms of funding scientific research activities. Methods of project management in the management of scientific research. Drawing up applications for grants. Presentations of own research.

The list of self-studies in the course is given in table 3.

Table 3

### List of self-studies

Name of the topic and / or task	Content
Self-study 1. Topic 1.	Scientific paradigms of economic science.
Self-study 2. Topic 2	Conceptual apparatus of economic science. Classification of economic phenomena and processes
Self-study 3. Topic 3	Development of a structural model of the area of own research. Development of INDZ sections
Self-study 4. Topic 4	Development of working research hypotheses
Self-study 5. Topic 5	Review of information sources in accordance with the INDZ plan
Self-study 6. Topic 6	Development of a presentation of a fragment of one's own research

Self-study 7. Topic 7	Work with databases of PhD dissertations. Development of INDZ sections
Self-study 8. Topic 8	Tools for working with information on the Internet
Self-study 9. Topic 9	Issuance of INDZ
Self-study 10. Topic 10	Principles and rules of scientific integrity in scientific research.
Self-study 11. Topic 11	Analysis of the strengths and weaknesses of one's own creative thinking. Development of own methods of activation of scientific creativity.

The number of hours of lectures, practical (seminar) and hours of self-study is given in the technological card of the course.

## **TEACHING METHODS**

In the process of teaching the course, in order to acquire certain learning outcomes, to activate the educational process, it is envisaged to use such teaching methods as:

Verbal (lecture Topics 1-4, 6-7, problem lecture (Topics 5,11).

Visual demonstrations (Topics 3-11).

Practical studies: reports with presentations based on the results of own research (discussion and brainstorming – topics 1-11).

## **FORMS AND METHODS OF ASSESSMENT**

The University uses a 100-point cumulative system for assessing the learning outcomes of students.

Current control is carried out during lectures, practical, laboratory and seminar classes and is aimed at checking the level of readiness of the student to perform a specific job and is evaluated by the amount of points scored:

– for courses with a form of semester control as grading: maximum amount is 100 points; minimum amount required is 60 points.

The final control includes current control and assessment of the student.

Semester control is carried out in the form of grading.

The final grade in the course is determined:

– for disciplines with a form of grading, the final grade is the amount of all points received during the current control.

During the teaching of the course, the following control measures are used:

Current control: current written tests (maximum score – 15 points); competency oriented task on topics (maximum score 45 points) ; individual scientific and research task (maximum score – 40 points).

Semester control: Grading.

More detailed information on the assessment system is provided in technological card of the course.



## RECOMMENDED LITERATURE

### Main

1. Пушкар О. І. Методологія та організація наукових досліджень : навчальний посібник [Електронний ресурс] / О. І. Пушкар. – Харків : ХНЕУ ім. С. Кузнеця, 2020 – 886 с. [Електронний ресурс]. – Режим доступу: <http://www.repository.hneu.edu.ua/handle/123456789/23346>
2. Методичні рекомендації до підготовки Індивідуального науково-дослідного завдання здобувачів ступеня доктора філософії 1 року підготовки. — Режим доступу : <https://pns.hneu.edu.ua/mod/folder/view.php?id=99531>
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4. ПОРЯДОК присудження ступеня доктора філософії та скасування рішення разової спеціалізованої вченої ради закладу вищої освіти, наукової установи про присудження ступеня доктора філософії. Затверджено постановою КМ України від 12 січня 2022 р. № 44 – [Електронний ресурс]. – Режим доступу: <https://zakon.rada.gov.ua/laws/show/44-2022-%D0%BF#Text>
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### Additional

6. Грузіна І. Розвиток наукових підходів до дослідження організації / І. Грузіна // Бізнес Інформ. – 2022. – № 2. – С. 132-139. - Режим доступу: <http://www.repository.hneu.edu.ua/handle/123456789/27651>
7. Каламбет С.В. Методологія наукових досліджень: Навч. посіб. / С.В. Каламбет, С.І. Іванов, Ю.В. Півняк Ю.В. – Дн-вськ: Вид-во Маковецький, 2018. – 191 с. [Електронний ресурс]. – Режим доступу: <https://pgasa.dp.ua/wp-content/uploads/2017/10/3-1.pdf>.
8. Вимоги до журналів, що рецензуються, розроблені видавництвом «Ельзевір» (Elsevier) відповідно до міжнародних етичних правил наукових публікацій. [Електронний ресурс]. – Режим доступу : <http://www.elsevier.com/about/publishing-guidelines/publishing-ethics>.
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12. Thomas George C. Research methodology and scientific writing. 2nd Edition Publisher: Ane Books, New Delhi – 2022. – 628 p. [Electronic resource] – Access mode: <https://www.researchgate.net/publication/335701346>.

### **Information resources**

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