

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
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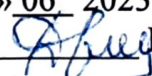


METHOD GUIDE TO SELF-STUDY
on
«Philosophical Problems of Scientific Cognition»

for Educational and Professional programs of Second (Master) Level of
Higher Education of all Specialties

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INTRODUCTION

The subject «Philosophical Problems of Scientific Cognition» is the theoretical and practical basis of a set of knowledge and skills that contribute to the formation of the scientific and worldview foundations of a master's degree student, enriching him with the methodological culture necessary for effective spiritual and practical activity, the ability to conduct scientific research work following the modern science requirements.

Main target to study the subject is to form systemic ideas about science as a system of knowledge, a field of activity, and a social institution, the formation of methodological consciousness, the assimilation of the mechanisms of innovative solutions in modern science, as well as the production of practical skills for applying scientific knowledge in research activities provided by each educational and professional program.

The tasks of the discipline study are:

- mastering the basic provisions of the discipline;
- development of methodological culture;
- development of skills and abilities to analyze scientific texts;
- development of skills and abilities to discuss current scientific problems, to distinguish the subject, object, methods and techniques of scientific research;
- development of skills and abilities to apply philosophical methodology to research;
- development of skills and abilities to highlight the stages of scientific research and determine the innovative component of its results.

Course Training Program is approved by the guarantors of educational and professional programs of second (Master) level of higher education, in particular, regarding the place, objectives, tasks, and content of the academic discipline «Philosophical Problems of Scientific Cognition» to achieve the objectives and program learning outcomes, as well as obtaining the competencies provided for by these educational and professional programs, in the context of the formation of the worldview and civic qualities of students of higher education, their moral values and general cultural training, the formation of their methodological foundations for original thinking and research, critical reflection on problems in the industry and the verge of branches of knowledge.

Learning outcomes and competences the subject makes it possible to achieve:

The academic discipline, together with other educational components of each educational and professional program where it is taught, allows achieving program learning outcomes determined by the educational and professional program, previously correlated with the achievement of general competencies – universal competencies that do not depend on the subject area, but are important for a successful further professional and social activities of the applicant for higher education in various industries and his personal development.

Such general competencies, directly or indirectly related to the general competencies provided for by each educational and professional program, include, in particular, the most relevant general competencies for each specialty from the European Union (European Commission) Project "Tuning Educational Structures in Europe", indicated, in particular, in the order of the Ministry of Education and Science of Ukraine dated June 1, 2017 No. 600 (as amended in the Ministry of Education and Science of Ukraine order dated April 30, 2020 No. 584):

- ability for abstract and analytical thinking, and synthesis of ideas;
- capacity to learn and stay up-to-date with learning;
- ability to be critical and self-critical;
- ability to search for, process and analyse information from a variety of sources;
- ability to identify, pose and resolve problems;
- ability to plan and manage time;
- ability to adapt to and act in new situations;
- capacity to generate new ideas (creativity);
- ability to make reasoned decisions;

- ability to work in a team, to achieve consensus, and make joint decisions;
- ability for interpersonal relationships;
- ability to motivate people and move toward common goals;
- ability to communicate with representatives of different professional groups across varying social levels (with experts from other fields of knowledge/types of economic activity);
- appreciation of diversity and multiculturalism;
- ability to work in an international context;
- ability to work autonomously;
- ability to design and manage projects, in particular in the domain of interdisciplinary scholarship;
- ability to take the initiative and to foster the spirit of entrepreneurship;
- ability to act on the basis of ethical reasoning;
- ability to determine and persist in mastery-approach goals and assigned duties;
- ability to act with social responsibility and civic awareness;
- ability to show awareness of equal opportunities and gender issues;
- ability to apply knowledge in practical situations;
- being able to draw the latest innovative technologies (nanotechnology, biotechnology, information technology, and cognitive science (NBIC)) in particular practical activities;
- ability to undertake research at an appropriate level;
- ability to coordinate philosophical, general scientific and specifically scientific methodological tools to solve problems and tasks.

Module 1. SCIENCE AS A PHENOMENON OF CIVILIZATION

THEME 1.1.

INFORMATION SOCIETY AS A KNOWLEDGE SOCIETY

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 6–11.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 1.1.

<i>agrarian society</i>	
<i>industrial society</i>	
<i>information</i>	
<i>information society</i>	
<i>informatization</i>	
<i>knowledge</i>	
<i>knowledge society</i>	
<i>post-industrial society</i>	
<i>wave theory</i>	

Task 2. Review the material

1. Explain the content of the concepts "information society", "post-industrial society", and "knowledge society". Determine the defining criteria of each of the above theoretical models.
2. Name and characterize the information society's distinguishing features and reveal its contradictions.
3. Determine the role played by information, information technologies, and information resources in the modern "knowledge economy" structure.
4. Describe the content of the concepts "knowledge" and "information". Determine the conceptual differences between these concepts.
5. According to UNESCO's definition, what are the four pillars of knowledge societies must build on?

Task 3. Questions and tasks for self-control

1. What special features does science acquire in the information society?
2. What theories of the information society do you know?
3. Comment on F. Webster's conclusions about modern Western theories of the information society.
4. What are the conceptual differences between post-industrial and industrial societies?
5. What are the structural changes of modern society?

List of literature: [5, p. 5–12; 30, p. 47–76; 34, p. 28–120, 163–180, 500–512; 42, p. 27–50; 43, p. 3–13; 72, p. 7–25; 73, p. 18–19, 122–133; 74, p. 263–274].

THEME 1.2.
THEORETICAL PROBLEMS OF SCIENCE

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 11–17.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 1.2.

<i>science</i>	
<i>culture</i>	
<i>social activity</i>	
<i>social institution</i>	
<i>system of knowledge</i>	

Task 2. Review the material

1. Expand the content of "science" and "scientific knowledge" concepts. Define science as a social institution and describe its functioning in this status.
2. Name the backbone elements of science. Determine the features inherent in scientific knowledge.
3. Describe science as a field of public activity. Determine the object and subject of scientific activity, methods, and methods of science.
4. Expand the specifics of the philosophical understanding of the phenomenon of science
5. Describe science in the system of modern culture and reveal the socio-cultural orientation of science.

Task 3. Questions and tasks for self-control

1. Define scientific knowledge.
2. Show why science is a system of knowledge.
3. Describe science as a field of public activity.
4. Justify why science is a social institution.
5. What is the specificity of the philosophical understanding of science?
6. Expand the socio-cultural functions of science in modern society.

List of literature: [5, p. 14–23; 16, p. 7–18; 19, p. 5–26; 23, p. 4–10; 24, p. 18–34; 31, p. 27–60; 36, p. 239–265; 67, p. 13–19; 70, p. 299–313].

THEME 1.3.
WESTERN AND NATIVE TRADITIONS IN METHODOLOGY OF SCIENCE

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 17–25.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 1.3.

<i>empiricism</i>	
<i>methodology</i>	
<i>philosophy of science</i>	
<i>positivism</i>	
<i>post-positivism</i>	
<i>rationalism</i>	
<i>scientism</i>	
<i>synergetics</i>	
<i>theory of knowledge</i>	

Task 2. Review the material of the Theme

1. Expand the content of "rationalism" and "empiricism" concepts and point out their theoretical and ideological effect on classical science development.
2. Describe the philosophical teachings and trends in the methodology of science: positivism, neopositivism, and empirio-criticism.
3. Describe the specifics of critical rationalism, historicism, and scientific realism, as well as the post-non-classical view of science.
4. Describe the features of the national tradition in the modern philosophy of science.

Task 3. Questions and tasks for self-control

1. Define rationalism and empiricism.
2. How did the philosophical and worldview attitudes of "rationalism" and "empiricism" influence the formation of classical science?
3. Why did positivism eliminate philosophical metaphysics from the scientific knowledge system?
4. Did scientific cosmism influence the cultural and historical image of Russian science?

List of literature: [3, p. 57–89; 5, p. 120–121; 7; 8, p. 23–43, 67–80, 99–122; 10, p. 3–40, 556–642; 14, p. 310–316; 16, p. 52–119; 22, p. 64–86; 64, p. 70–80; 65, p. 290–292; 67, p. 8–13, 21–25].

THEME 1.4.

SPECIFICITY OF SCIENTIFIC KNOWLEDGE**Guidelines**

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 26–31.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 1.4.

<i>mastering (developing)</i>	
<i>scientific knowledge</i>	
<i>subject</i>	
<i>object</i>	

<i>truth</i>	
<i>error</i>	
<i>lies</i>	

Task 2. Review the material of the Theme

1. Define the concepts of "knowledge" and "development".
2. Determine the main forms of world exploration and designate their formation and correlation specifics.
3. Justify how scientific knowledge differs from everyday knowledge. Name and reveal the main characteristics of scientific knowledge.
4. Describe the object of scientific knowledge. Explain what the ideality of the object of scientific knowledge means.
5. Expand the main features of the subject of scientific knowledge.
6. Describe the truth and error in science. Define absolute and relative truth.

Task 3. Questions and tasks for self-control

1. What are the most essential signs of knowledge and development?
2. It is known that the main forms of mastering the world are: spiritually-theoretical, spiritually-practical, and subject-practical. As a result of what types of relations between the objective, subjective, and objective-subjective worlds these forms of mastering the world are formed?
3. Does every educated person act as a subject of scientific knowledge? Justify your answer.
4. Describe the relationship between absolute and relative truth. Do you agree with the thesis that truth is always concrete? What is a fallacy in science?

List of literature: [17, p. 195–204; 13, p. 73–80; 20, p. 169–187; 22, p. 88–115; 45; 54, p. 63–79; 60, p. 295–298].

THEME 1.5.

UNITY OF EMPIRICAL AND THEORETICAL KNOWLEDGE IN SCIENTIFIC COGNITION

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 32–36.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 1.5.

<i>empirical knowledge</i>	
<i>innovation</i>	
<i>intuition</i>	
<i>scientific knowledge</i>	
<i>theoretical knowledge</i>	
<i>tradition</i>	
<i>truth</i>	

Task 2. Review the material of the Theme

1. Expand the content of the concepts "empirical level of scientific knowledge" and "theoretical level of scientific knowledge". Determine how these levels are related.
2. Describe the structure of empirical and theoretical knowledge.
3. Expand the role of tradition and innovation in the empirical and theoretical research process.
4. Designate the role of intuition and creativity in scientific knowledge.

Task 3. Questions and tasks for self-control

1. How are the empirical and theoretical levels of scientific knowledge related?
2. What is the role of the tradition of science in the innovation process?
3. Determine the role of intuition in scientific knowledge.
4. Describe scientific creativity.
5. How do intuition and creativity correlate in scientific knowledge?

List of literature: [1, p. 48–86; 3, p. 115–135; 5, p. 97–104; 21, p. 159–177; 23, p. 39–46, 47–53; 54, p. 161–242; 59, p. 19–21, 207; 70, p. 299–316].

THEME 1.6.

NON-LINEAR MUTUAL INFLUENCE OF PHILOSOPHICAL AND SCIENTIFIC COGNITION IN THEIR HISTORICAL PROGRESS

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 38–44.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 1.6.

<i>natural philosophy</i>	
<i>noosphere</i>	
<i>Philosophy of cosmism</i>	

Task 2. Review the material of the Theme

1. Describe ancient natural philosophy as a prototype of the mutual influence of philosophical and specifically scientific knowledge.
2. Expand the connection between philosophy and science in the Modern age.
3. Outline the mutual influence of philosophical and scientific knowledge in the philosophy of cosmism.

Task 3. Questions and tasks for self-control

1. Describe the mutual influence of science and philosophy in the Greek Antiquity.
2. As a result of what processes does the biosphere grow into the noosphere?
3. How were philosophy and science interrelated in the Modern age?
4. How are the philosophy of cosmism and modern post-non-classical science connected?
5. Describe the view of the Cosmos in the philosophically-cultural direction of cosmism.

List of literature: [18, p. 241–257; 22, p. 17–25, 35–39; 24, p. 18–33, 297–306; 25, p. 118–132; 28; 40; 46; 59, p. 21–23; 67, p. 1–13, 22–25, 112–144].

THEME 1.7.
**INTERDEPENDENCE OF PHILOSOPHICAL AND SCIENTIFIC
KNOWLEDGE IN POSTMODERN EPOCH**

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 45–51.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 1.3.

<i>Modern philosophy</i>	
<i>Modernity</i>	
<i>Postmodernity</i>	
<i>modernism</i>	
<i>postmodernism</i>	
<i>postnonclassical science</i>	
<i>relativism</i>	
<i>epistemic relativism</i>	

Task 2. Review the material of the Theme

1. Describe Modern and Postmodern in the civilizational movement of the Western world.
2. Expand the specifics of modernism and postmodernism in the philosophy and science of the XX century.
3. Identify postmodern ideas in philosophy and science in the late XX - early XXI centuries.

Task 3. Questions and tasks for self-control

1. What, in your opinion, are the key differences between the cultural eras of Modern and Postmodern?
2. Name the main features of post-non-classical science.
3. On what principles was science based in the cultural era of Modern?
4. How are postmodern ideas in philosophy and science related?
5. Describe the mutual influence of postmodern culture and post-non-classical science.

List of literature: [3, p. 90–114; 5, p. 25–47; 48; 51, p. 885–889; 56, p. 31–36; 67, p. 170–192; 69, p. 1–16, 173–199].

THEME 1.8.
PHILOSOPHICAL GROUNDS OF SCIENCE

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 52–57.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 1.8.

<i>axiology</i>	
<i>value</i>	
<i>epistemology</i>	
<i>ontology</i>	
<i>praxeology</i>	

Task 2. Review the material of the Theme

1. Describe the ontological foundations of scientific knowledge and identify the problem of determining the object of scientific research.
2. Expand the epistemological foundations of scientific knowledge.
3. Describe the logical procedures of substantiation and proof in science.
4. Determine the praxeological and axiological foundations of scientific knowledge.

Task 3. Questions and tasks for self-control

1. What is the reason for the difference between the ontological foundations of science for specific sciences and its cultural and historical stages?
2. Name the general initial epistemological foundations of scientific knowledge.
3. What are the logical foundations of science, and what are they based on?
4. What caused the interdependence of praxeological and axiological foundations of scientific knowledge

?**List of literature:** [5, p. 107–109; 13, p. 117–132; 19, p. 27–45; 21, p. 178–210; 25, p. 36–43; 32; 41, p. 101–102; 59, p. 754–764].

Module 2. "Philosophical and Scientific Methodological Tools"

THEME 2.1.

LOGICAL FOUNDATIONS OF SCIENTIFIC KNOWLEDGE

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 58–63.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 2.1.

<i>classical rationality</i>	
<i>nonclassical rationality</i>	
<i>postnonclassical rationality</i>	
<i>rationality</i>	
<i>rational and reasonable rationality</i>	
<i>scientific rationality</i>	
<i>logical reasoning</i>	

<i>traditional logic</i>	
<i>classical logic</i>	
<i>nonclassical logics</i>	

Task 2. Review the material of the Theme

1. Describe logic as the basis of rationality and define the concepts and types of rationality.
2. Expand the content of the concepts of "rationality", and "scientific rationality" and characterize the historical types of the latter.
3. Describe the change in scientific rationality in the context of the historical interaction between philosophy and science

Task 3. Questions and tasks for self-control

1. What features are inherent in reasonable rationality?
2. What ideals are characteristic of each type of scientific rationality?
3. Designate features of reasonable rationality.
4. What types of rationality are distinguished in philosophical methodology?
5. What is the difference between rationalism and rationality?

List of literature: [5, p. 49–55; 21, p. 51–75; 23, p. 28–39; 29, p. 3–23; 37; 60, p. 291–294; 70, p. 393–396; 71].

THEME 2.2.

SPECIFICITY OF SCIENTIFIC LANGUAGE

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 64–69.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 2.2.

<i>word</i>	
<i>term</i>	
<i>concept</i>	
<i>speech</i>	
<i>language</i>	
<i>natural language</i>	
<i>artificial language</i>	
<i>scientific language</i>	
<i>everyday language</i>	

2. Review the material of the Theme

1. Describe everyday speech as a source of the formation of the language of science.
2. Expand the relationship between natural and artificial language in the development of science.
3. Describe the phenomenon of "migration" of scientific concepts and terms in the science functioning process.
4. Expand the transformation of the language of science under the influence of the application of information and communication technologies.

Task 3. Questions and tasks for self-control

1. What logical procedures underlie the formation of scientific concepts?
2. Why is it impossible to identify the concepts and terms of science?
3. What is the intersubjectivity of scientific concepts and terms?
4. Explain how the computerization of science affects the formation of terms and concepts.

List of literature: [5, p. 55–74, 75–96; 6, p. 57–76; 9, p. 51–92; 17, p. 144–178, 248–261; 20, p. 221–244; 67, p. 84–96; 76, p. 67–80].

THEME 2.3.

PHILOSOPHICAL METHODOLOGY AS BASICS OF SCIENTIFIC COGNITION

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 69–74.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 2.3.

method

methodology

philosophical methodology

scientific methodology

Task 2. Review the material of the Theme

1. Expand the relationship between philosophical and scientific methodology.
2. Describe the methodological foundations of the empirical and theoretical levels of organization of scientific knowledge.
3. Expand the concept of method in philosophy.
4. Describe the method and methodology in the structure of the philosophy of science.

Task 3. Questions and tasks for self-control

1. Outline the relationship between philosophical and scientific methodology.
2. Determine the methodological foundations of theoretical knowledge.
3. How is the concept of method revealed in philosophy?
4. What is a methodology?
5. Determine the methodological foundations of empirical knowledge.

List of literature: [3, p. 184–208; 5, p. 97–133; 44, p. 15–135; 56, p. 31–36; 60, p. 23–25, 299–308].

THEME 2.4.

CORRESPONDENCE OF PHILOSOPHICAL AND SCIENTIFIC METHODOLOGY

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 75–81.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 1.3.

<i>philosophical level of methodology</i>	
<i>general scientific level of methodology</i>	
<i>specific scientific level of methodology</i>	
<i>methodological approach</i>	
<i>methodological principle</i>	
<i>methodological tool</i>	

2. Review the material of the Theme

1. Expand the levels of methodology: philosophical, general scientific, and specific scientific.
2. Name and describe the criteria for the classification of scientific methods.
3. Expand the concepts of methodological approach, methodological principle, and methodological means of science.

Task 3. Questions and tasks for self-control

1. What levels of methodology do you know?
2. Name the criteria for the classification of scientific methods.
3. What are the differences between the scientific approach and the scientific method?
4. What role does the methodological principle play in the scientific knowledge system?

List of literature: [3, p. 131–152; 5, p. 134–180; 13, p. 139–140, 148–151; 33, p. 13–56; 57, p. 403–412; 62, p. 9–10; 63, p. 163–169; 67, p. 112–169].

THEME 2.5.

PECULIARITIES OF METHODOLOGY OF NATURAL, SOCIAL, HUMANITIES, AND TECHNICAL SCIENCES

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 82–86.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 1.3.

<i>hermeneutics</i>	
<i>methodology of scientific research</i>	
<i>scientific method</i>	

2. Review the material of the Theme

1. Reveal the dependence of the choice of research methodology on the object.

2. Describe the specifics of the relationship between historical and logical in the natural, technical, social, and human sciences.
3. Determine the application of hermeneutic procedures in the natural, technical, and social sciences.

Task 3. Questions and tasks for self-control

1. How does the object of study influence the choice of methodology?
2. Why is history logical, but logic is characterized by historicity?
3. Determine the role of the hermeneutic procedure in scientific research.
4. What is the specificity of hermeneutic procedures application in the natural, technical, social, and human sciences?

List of literature: [13, p. 96–100; 16, p. 149–156; 22, p. 82–86; 59, p. 780–784; 66, p. 3–27].

THEME 2.6.

INFORMATION AND COMMUNICATIONS TECHNOLOGIES IN THE STRUCTURE OF CONTEMPORARY SCIENTIFIC KNOWLEDGE

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 87–92.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 2.6.

<i>human-machine system</i>	
<i>information modeling</i>	
<i>computer interpretation</i>	
<i>technics</i>	
<i>technical sciences</i>	

Task 2. Review the material of the Theme

1. Reveal the dependence of the choice of research methodology on the object.
2. Determine the essence of information modeling in modern science.
3. Expand the specifics of modeling complex non-linear actions in the natural, technical, social, and human sciences.

Task 3. Questions and tasks for self-control

1. Describe information modeling in science.
2. What is machine experience?
3. What role do human-machine systems play in interdisciplinary scientific formation?
4. What is a mental experience?

List of literature: [3, p. 106–116; 14, p. 205–222, 223–226; 15, p. 55–63; 19, p. 279–308; 47; 53; 59, p. 29–130, 275; 68].

THEME 2.7.
CLASSIFICATION OF SCIENTIFIC KNOWLEDGE

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 93–100.
2. Preparation for practical classes.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 2.7.

<i>applied sciences</i>	
<i>fundamental sciences</i>	
<i>humanities</i>	
<i>natural sciences</i>	
<i>sciences classification</i>	
<i>social sciences</i>	
<i>technical sciences</i>	
<i>interdisciplinary sciences</i>	

2. Review the material of the Theme

1. Describe the concept and essence of classification in science. Expand the basic principles of the classification of sciences.
2. Determine the historical periodization of science: classics - non-classics - post-non-classics.
3. Describe interdisciplinary sciences in the structure of modern scientific knowledge.

Task 3. Questions and tasks for self-control

1. Determine the basic principles for the classification of sciences.
2. Expand the ontological foundations of classical science.
3. What is the reason for the diversification of modern science?
4. Expand the epistemological foundations of post-non-classical science.
5. Give the methodological foundations of non-classical science.
6. What processes in the structure of scientific knowledge are associated with the diversification of modern science?

List of literature: [5, p. 180–209; 21, p. 75–117; 37; 54, p. 226–243; 59, p. 778–779, 848–849; 77, p. 35–117].

THEME 2.8.
SCIENTIFIC COMMUNITY. ETHICS FOR SCIENTISTS

Guidelines

1. Processing the theoretical material from *Philosophical Problems of Scientific Cognition. Manual* / M. Abysova, T. Shorina, T. Poda. Kyiv: NAU, 2023. P. 101–105.
2. Preparation for practicals.
3. Performing self-study Tasks 1-3.
4. Literature processing.

Task 1. Fill in the table of Vocabulary of Theme 1.3.

<i>ethics</i>	
<i>ethos of science</i>	
<i>scientific community</i>	
<i>scientific communication</i>	

2. Review the material of the Theme

1. Reveal the problems of the formation of the scientific community. Define the ethos of science.
2. Describe the concept and essence of the moral responsibility of a scientist.
3. Determine the features of scientific communication through social networks and digital platforms.

Task 3. Questions and tasks for self-control

1. Designate the ethos of science.
2. Does scientific knowledge have a moral dimension?
3. What is the essence of the moral responsibility of a scientist?
4. Outline the features of scientific Internet communication.

List of literature: [13, p. 44–52; 15, p. 72–91, 103–112, 126–142; 16, p. 457–480, 596–599; 17, p. 223–269; 19, p. 329–352; 22, p. 128–143; 25, p. 164–174; 50, p. 6–12; 55, p. 607–616; 70, p. 719–733; 78, p. 1813–1814].

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