

CALENDAR AND THEMATIC PLAN FOR THE COURSE “PHILOSOPHY AND METHODOLOGY OF SCIENCE”

SEMINAR 1. THE STATUS AND PURPOSE OF PHILOSOPHY IN THE LIFE OF MODERN SOCIETY

Questions:

1. The interrelationship of philosophy, worldview, and culture. The nature of philosophical problems. The problem of philosophy's scientific nature.
2. Types of philosophical thinking in the context of Eastern and Western culture. Philosophy and national identity.
3. The main strategies of postclassical philosophical research in Western Europe.
4. The sociocultural status and functions of philosophy in the modern world. The role of philosophy in shaping individual value orientations and the principles of biospheric thinking.

Topics for reports

1. Philosophy in the age of specialization: overcoming “technical barbarism” in modern society.
2. The axiological dimension of 21st-century medicine: bioethics facing the challenges of biotechnological progress.
3. Dialogue of civilizations: a comparative analysis of eastern and western philosophical strategies in modern healthcare.
4. Metamedicine and postclassical strategies: phenomenology and hermeneutics at the patient's bedside.
5. From anthropocentrism to “One Health”: the philosophy of biospheric thinking in the era of ecological crises.

SEMINAR 2. PHILOSOPHY OF NATURE IN THE AGE OF MODERN ENVIRONMENTAL CHALLENGES

Questions:

1. The concept of nature and its polysemantic quality.
2. Nature as the human habitat. The natural-geographical environment as a basic factor in social evolution.
3. The interaction of nature and society at various stages of the historical process.
4. The concept of “sustainable development” and its evolution in the context of the exacerbation of modern global problems. The phenomenon of the greening of science.
5. The concept of the biosphere and modern evolutionary theory. The concept of the noosphere.
6. The idea of the coevolution of man and nature. The coevolutionary imperative and environmental values of modern civilization.

Topics for reports

1. The polysemantic nature of nature: a historical-philosophical analysis from Aristotelian *physis* to the modern mechanistic worldview.
2. Geographical possibilism vs. determinism: methodological tools for interpreting the natural environment in social evolution.
3. The epistemological foundations of the anthropocene: how the new geological epoch blurs the boundary between natural and social history.
4. The greening of science: analyzing the transdisciplinary shift from isolated reductionism to holistic systems thinking.
5. Vladimir Vernadsky's biosphere concept: living matter as a global biogeochemical and cosmic force.

SEMINAR 3. PHILOSOPHY OF GLOBAL EVOLUTIONISM

Questions:

1. Modern science and philosophy on self-organization and development of nature. The systemic-evolutionary paradigm in modern natural science.
2. The heuristic potential of global evolutionism in explaining the dynamics of the world and addressing the development of a modern scientific picture of it.

Topics for reports

1. Ilya Prigogine's synergetics and the new understanding of time in the philosophy of science.
2. The problem of chance and determinism in the modern systemic-evolutionary paradigm.
3. From the big bang to the living cell: the unbroken thread of cosmic evolution.
4. Global evolutionism as a bridge between natural sciences and the humanities.
5. Vladimir Vernadsky's concept of the noosphere in the context of modern global evolutionism.
6. The anthropic cosmological principle and its philosophical significance in the 21st-century worldview.

SEMINAR 4. THE PROBLEM OF A HUMAN AND THE ANTHROPOLOGICAL TURN IN MODERN PHILOSOPHY

Questions:

1. Human as a subject of philosophical and scientific analysis. The multidimensionality of the human phenomenon and the main approaches to its cognition.
2. The main concepts of anthropogenesis. Man as a biosocial being and his fundamental qualities.
3. The corporeality and spirituality of a human, the problem of human's essence and existence. Man, individual, individuality, personality.
4. Consciousness as a subject of philosophical understanding. Existential-phenomenological, sociocultural, and psychoanalytic traditions in the study of consciousness.

5. Philosophy and cognitive sciences on the multidimensionality, polyfunctionality, and structure of consciousness. Consciousness, language, communication. The problem of artificial intelligence.
6. Axiological parameters of human existence in the world. Personal choice and the problem of the meaning of human life.
7. Philosophical understanding of the phenomenon of death and immortality. Freedom and responsibility in human existence.
8. The role and status of a human in the system of social communications. Problems of personality development and activity in the dynamics of mass culture values.
9. Anthropological crisis as a phenomenon of modern technogenic civilization.

Topics for reports

1. The hard problem of consciousness and the limits of artificial intelligence.
2. Psychoanalysis vs. phenomenology: mapping the unconscious and conscious mind.
3. From biological organism to persona: distinguishing individual, individuality, and personality.
4. The tension between essence and existence in 20th-century anthropological thought.
5. The technogenic civilization and the modern anthropological crisis.
6. Mortality, freedom, and the axiological parameters of the meaning of life.

SEMINAR 5. CURRENT ISSUES IN SOCIAL PHILOSOPHY

Questions:

1. The concept and characteristics of social reality. Society as a system and the specifics of its cognition.
2. The concept of the social structure of society. Types of social structures. Modern trends in social stratification.
3. The main strategies for studying social reality in modern philosophy: Marxist concept of society; Max Weber's concept of social action, the model of society in T. Parsons's structural functionalism, and communicative action in J. Habermas's theory.
4. Society as a developing system. Sources and driving forces of social dynamics. The nature of social contradictions, conflicts, revolutions, and reforms.
5. Variability in social development. Historical alternatives and the choice of development paths for society. The status and functions of the social subject in the processes of transformation and modernization of society.
6. Linear and nonlinear interpretations of the historical process. Formational and civilizational paradigms in the philosophy of history.
7. The main concepts of social progress and their alternatives. Criteria of progress. Humanism as a measure of the spiritual and value-based dimensions of social progress.
8. Formational and civilizational paradigms in the philosophy of history.
9. The concept and types of civilizations in the history of society.

Topics for reports

1. Marx, Weber, Parsons, and Habermas: four views on social action and reality.
2. Modern trends in social stratification and the evolution of social structures.
3. Formational vs. civilizational paradigms: linear and non-linear interpretations of history.
4. Sources and driving forces of social dynamics: conflicts, revolutions, and reforms.
5. The role of the social subject in alternative paths of modernization.
6. Humanism as the ultimate criterion and dimension of social progress.

SEMINAR 6. SCIENCE AS THE MOST IMPORTANT FORM OF KNOWLEDGE IN THE MODERN WORLD**Questions:**

1. The concept of science. Science as an activity, a social institution, and a system of knowledge.
2. Forms of reflexive understanding of scientific knowledge: epistemology, methodology, and the logic of science.
3. The origins of science. Science and types of civilizational development.
4. The ancient ideal of science. Characteristics of medieval science.
5. The formation of disciplinary-organized science in the culture of the Renaissance and Modern Age.
6. The concept of scientific rationality. Classical, non-classical, and post-non-classical stages in the development of science.
7. The main sociocultural and methodological prerequisites for the development of modern science. The functions of science in industrial and post-industrial society.
8. The main problems of the philosophy of science. Scientific and non-scientific knowledge. The specifics of scientific knowledge.
9. The phenomenon of parascience, the conditions for its emergence and development. Esotericism and deviant science.
10. The role of science in the life of modern society and in the formation of personality.

Topics for reports

1. The three eras of science: classical, non-classical, and post-non-classical rationality.
2. Science vs. parascience: demarcation criteria and the rise of deviant knowledge.
3. From antiquity to the modern age: the historical transformation of the scientific ideal.
4. Science as a social institution: its functions in industrial and post-industrial societies.
5. Epistemology, methodology, and logic: three approaches to reflexive understanding of science.
6. The socio-cultural prerequisites of modern science and its role in personality formation.

SEMINAR 7. THE STRUCTURE AND DYNAMICS OF SCIENTIFIC KNOWLEDGE

Questions:

1. The empirical and theoretical levels of scientific knowledge, their unity and difference. The structure of empirical research, the empirical basis of a scientific discipline, scientific fact, and the specific nature of empirical generalizations and patterns.
2. Problem and hypothesis. The concept of scientific theory. Abstract, "ideal" objects and types of theories. Functions of scientific theory.
3. Metatheoretical foundations of science. The scientific picture of the world, ideals and norms of science. The concept of the style of scientific thinking. Philosophical foundations of science.
4. The dialectic of developing science. Cumulative and anticumulative theories of scientific progress and its systemic nature.
5. The nature and types of scientific revolutions. Features of modern strategies for the development of scientific knowledge.
6. Disciplinary, interdisciplinary, and transdisciplinary approaches in the development of modern science. Criteria of interdisciplinarity.

Topics for reports

1. The dialectic of empirical and theoretical levels in constructing scientific theories.
2. Metatheoretical foundations: the scientific picture of the world and ideals of science.
3. Cumulative vs. anti-cumulative models of scientific progress.
4. The nature, types, and anatomy of scientific revolutions.
5. Beyond disciplines: interdisciplinary and transdisciplinary approaches in modern science.
6. The role of hypotheses and 'ideal objects' in modern scientific inquiry.

SEMINAR 8. METHODOLOGICAL TOOLS OF MODERN SCIENCE

Questions:

1. The concept of method and methodology. The specifics of the philosophical and methodological analysis of science, general and specific scientific methodology of cognition. Methodology and techniques of scientific research.
2. The systems approach and its general scientific methodological essence. The development of a nonlinear methodology of cognition.
3. The main elements of scientific research methodology: object, subject, goal, objectives, hypotheses, means, and methods. The structure, mechanisms of substantiation, and criteria of the scientific method. Methods of empirical and theoretical research.
4. Justification of research results and its types (proof, confirmation, interpretation, explanation, etc.). Methods of systematizing scientific knowledge (classification, typology, etc.).

5. The language of science. The role of definitions in the formation of scientific terminology. Object language and metalanguage.
6. Information technology in modern scientific knowledge. The plurality of methodological strategies and methodological innovations.
7. The methodological significance of the fundamental laws of dialectics. Contradiction as the source of the development of scientific knowledge.
8. The methodological role of the categories of general and particular, whole and part, essence and phenomenon, abstract and concrete, necessity and chance, historical and logical

Topics for reports

1. The systems approach and nonlinear methodology in modern scientific cognition.
2. The language of science: definitions, object language, and metalanguage.
3. Methods of justification: proof, confirmation, explanation, and interpretation in research.
4. The methodological role of dialectical categories: whole and part, necessity and chance.
5. Information technology and methodological innovations in 21st-century science.
6. The architecture of scientific research: from object and subject to methods and hypotheses.

SEMINAR 9. LOGIC, RHETORIC AND DIALECTICS OF SCIENCE

Questions:

1. Formal and informal logic in science. Rules of classical formal logic (identity, non-contradiction, excluded middle). The principle of sufficient reason. Definition of a concept and its logical rules. Modern formal logic, mathematics, logical programming, artificial intelligence.
2. Dialectical logic of Hegel and Marxism. Principles of Marxist dialectical logic: objectivity of consideration, comprehensiveness of analysis, historicism, concreteness of truth.
3. Categories of dialectical logic: singular and general, content and form, possibility, probability, virtuality, structure, element, system, phenomenon and essence, cause and effect, law and their use in science.
4. Modern versions of dialectics.

Topics for reports

1. Classical laws of formal logic and their role in artificial intelligence.
2. Hegelian and Marxist dialectical logic: key principles and scientific use.
3. The principle of sufficient reason vs. probability in modern science.
4. Categories of dialectical logic: connecting cause, effect, and virtuality.
5. Formal vs. informal logic: how scientists argue and define concepts.
6. Modern versions of dialectics in 21st-century philosophy of science.

SEMINAR 10. LOGIC, RHETORIC AND DIALECTICS OF SCIENCE

Questions:

1. The rhetoric of science. Scientific discourse and text. Dissertation, abstract, and dissertation summary as scientific texts. Dissertation writing methods.
2. Argumentation, its structure and functions. The specifics of argumentation in the natural, social, humanitarian, and technical sciences.
3. The problem of truth and criteria of reliability of scientific knowledge. Justification of research results. Types of justification (proof, confirmation, interpretation, explanation).
4. Methods of systematizing scientific knowledge. Definition and its role in the formation of scientific terminology.

Topics for reports

1. The rhetoric of science: how scientific discourse and text style shape knowledge.
2. Dissertation and abstract writing: key methodological approaches and structure.
3. The diversity of scientific argumentation: natural vs. social and humanitarian sciences.
4. The problem of truth and epistemic criteria for the reliability of scientific knowledge.
5. Methods of justification in research: proof, confirmation, explanation, and interpretation.
6. The power of definition: building scientific terminology and systematizing knowledge.

**SEMINAR 11. SCIENCE AS A SOCIAL INSTITUTION AND A
DOMINANT VALUE IN MODERN CULTURE****Questions:**

1. The evolution of organizational forms in science. Science as a system of fundamental and applied research. Social mandate and strategy for research and development.
2. The specifics, unity, and prospects of academic, industrial, and university science. Science and education. Schools in science. Science in the culture of Belarus.
3. The concept of the scientific community, its stratification structure, and the problem of “scientific democracy.” Scientific hierarchy and the phenomenon of the elite in science. The changing status of scientists in modern society.
4. The specifics and forms of scientific communication. The problem of dialogue, controversy, and debate in the scientific community. The culture of scientific discussion, argumentation, its structure, types, and role in scientific debate. Competition and conflicts in science and ways to resolve them.
5. The problem of social regulation of scientific research. The praxeological function of science and the main types of social technologies: economic, political, managerial, and educational.
6. Science as a value in modern culture. The instrumental and ideological value of science. Scientism and anti-scientism in assessing the present and future of science.
7. Social values and norms of scientific ethos. The ambivalence of scientific consciousness. Problems of motivation and recognition in science.

8. The possibilities and limits of science. Creative freedom and social responsibility of the scientist. The ethics of science and social control over it.
9. Development prospects and new value guidelines for modern science.

Topics for reports

1. Scientism vs. anti-scientism: assessing the present and future value of science.
2. The scientific ethos: social values, motivation, and recognition in the scientific community.
3. Academic, industrial, and university science: synergy and development in Belarus.
4. The evolution of scientific communication: dialogue, debate, and conflict resolution.
5. Hierarchy and democracy in science: the elite vs. social equality among researchers.
6. The responsibility of a scientist: creative freedom, ethics, and social control.

SEMINAR 12. THE MAIN PARADIGMS IN THE DEVELOPMENT OF NATURAL SCIENCE

Questions:

1. The specifics of natural science knowledge. Typology of systemic objects of natural science. Features of the object, method, cognitive tools, language of natural science knowledge and technology.
2. The emergence of classical natural science and the role of physics in the structure of scientific knowledge. The general scientific status of the mechanistic picture of the world.
3. The emergence of disciplinary natural science. The relationship between physics, chemistry, and biology and the problem of the unity of scientific knowledge. The interaction of natural and technical sciences.
4. Revolutionary changes in physics in the late XIX – first half of the XX century and the formation of non-classical natural science. The philosophical significance of special and general relativity, quantum mechanics, cosmology, the genetic revolution, the synthetic theory of evolution, cybernetics, and general systems theory. The methodological role of the activity-based approach.
5. Post-non-classical natural science, its objects, subject matter, and methodological features. The interdisciplinary status of synergetics.
6. The phenomenon of the greening of science. Humanitarian and ethical assessment of research projects. The axiological orientation of modern natural science knowledge.

Topics for reports

1. The rise and fall of the mechanistic picture of the world in classical natural science.
2. The quantum and relativistic revolution: philosophical foundations of non-classical physics.

3. Post-non-classical natural science: self-organizing systems and the role of synergetics.
4. The greening of science: eco-centric paradigms and ethical limits of technological research.
5. The synthetic theory of evolution and the genetic revolution as pillars of modern biology.
6. The unity of scientific knowledge: bridging the gap between natural and technical sciences.

SEMINAR 13. PHILOSOPHY OF TECHNOLOGY. TECHNOLOGY AND A HUMAN

Questions:

1. Technology as an object of philosophical reflection. The historical evolution of the concept of technology and its modern interpretations.
2. The subject and structure of the philosophy of technology. The problem of technical reality. The functions of technology, its role, and status in the history of civilization. The genesis and sociodynamics of the technosphere.
3. The formation of the technostructure of the XXI century. The globalization of technical systems. The concept of technopolises and technopopulations. Nanotechnology and biotechnology.
4. Criteria for assessing the economic, sociocultural, and socioecological consequences of technological development. The information and computer revolution and artificial intelligence: philosophical and methodological aspects of analysis.
5. Engineering thinking and the formation of technocratic concepts of social development. The main parameters of scientific and engineering activity: scientific discovery, invention, innovation, design, and engineering. The problem of designing anthropotechnical complexes.
6. Virtual reality as a sociocultural phenomenon of the information society. Computerization, mediatization of modern society, and social control over individuals.
7. Epistemological problems of computer representation of knowledge.

Topics for reports

1. The evolution of the technosphere: from historical artifacts to global technical systems.
2. The rise of the 21st century technostructure: nanotechnology, biotechnology, and technopolises.
3. Artificial intelligence and the computer revolution: philosophical and methodological dimensions.
4. Virtual reality and mediatization: new frontiers of social control over the individual.
5. Engineering thinking and the challenges of designing anthropotechnical complexes.
6. The epistemological problems of computer representation of knowledge.

SEMINAR 14. THE MAIN TRENDS IN THE DEVELOPMENT OF SOCIAL AND HUMANITARIAN KNOWLEDGE

Questions:

1. Society as a subject of social and humanitarian knowledge. Specific features of social and humanitarian knowledge.
2. Research programs in social science. The naturalistic program and its main versions: methodological reductionism, ethnocentrism, organicism. Cultural-historical research program. Psychological and sociopsychological programs. Sociologism in social science. Materialistic understanding of history. The problem of synthesis of research programs in social and humanitarian knowledge and possible solutions.
3. The problem of truth in social and humanitarian knowledge: essence and specificity. Truth and value structures. The problem of objectivity of social and humanitarian knowledge. The methodological status of interpretation procedures in the structure of social and humanitarian knowledge. Truth and interpretation. Specific features of interpretive procedures in the humanities.
4. The concept of scientific discipline in social and humanitarian knowledge. The problem of classification of social and humanitarian sciences. Historical sciences as a subject of philosophical and methodological reflection. Political science and legal sciences in terms of methodological understanding. Philosophy and economics: methodological regulations of modern economic knowledge. Problems and prospects for mastering interdisciplinary methodologies of thinking in the social sciences and humanities.

Topics for reports

1. The specifics of social and humanitarian knowledge: how it differs from natural sciences.
2. Naturalism vs. sociologism: major research programs in the history of social thought.
3. The problem of truth and objectivity in the social sciences and humanities.
4. Truth and interpretation: the methodological status of hermeneutics in human sciences.
5. The classification of social disciplines: methodology of history, law, and economics.
6. The challenge of synthesis: interdisciplinary methodologies in modern social knowledge.

SEMINAR 15. PHILOSOPHY AT THE BEGINNING OF THE XXI CENTURY: PROBLEMS AND PROSPECTS

Questions:

1. The “Modern Project” as a subject of critical discussion. The problem of the “End of Philosophy” in the past and present. The philosophy of postmodernism: spiritual and theoretical origins and main stages of development. Values and goals of

philosophy in the Postmodern Era. Modernity as an era of shifting paradigms of thinking and activity. Prospects for a value revolution in xxi century culture.

2. Philosophy and futurology. Social forecasting and its specifics. The methodology of global modeling and the limits of technogenic civilization. Global studies, its potential and development prospects. The reports of the club of Rome and environmental alarmism.

3. The variability of methodological paradigms for human studies in modern science and philosophy. Artificial intelligence and the prospects of a “posthuman” civilization. Humanity in the modern media space and the world of virtual communications.

Topics for reports

1. The ‘end of philosophy’ and the changing paradigms of thinking in the postmodern era.
2. Philosophy and futurology: the methodology of global modeling and social forecasting.
3. The limits of technogenic civilization: the club of Rome and environmental alarmism.
4. Artificial intelligence and the transhumanist prospects of a ‘posthuman’ civilization.
5. Humanity reframed: existence in modern media space and virtual communications.
6. The digital value revolution: shifting cultural and philosophical goals in the 21st century.

SEMINAR 16. GLOBALIZATION AS A CIVILIZATIONAL PHENOMENON AND A SUBJECT OF SOCIO-PHILOSOPHICAL UNDERSTANDING

Questions:

1. The concept and systemic nature of globalization.
2. The main stages in the development of a global world.
3. Paradoxes of the sociodynamics of modern societies and global problems of humanity.
4. Globalization processes in the economic, political, and spiritual life of the world community.
5. The formation of a global information space and the sociocultural nature of globalism.
6. Globalization as a process of establishing a new world order and the prospects for nation states.
7. The era of globalism and the problem of developing Belarusian national culture and statehood.
8. Alternatives to globalization. Contemporary anti-globalism as a theoretical doctrine and the practice of social movements. Contemporary globalization challenges and risks. The phenomenon of glocalization: essence and trends. National

identity and cultural security. Regionalization trends in the modern social process. Glocalization and the network community.

9. The network nature of the modern organization of science. Network structures in the modern civilization of scientific and technological innovation. The computer revolution and global research projects.

Topics for reports

1. The sociocultural nature of globalism and the formation of a global information space.
2. The dilemma of the nation-state: establishing a new world order vs. national sovereignty.
3. Belarusian national culture and statehood in the era of globalization challenges.
4. The paradox of glocalization: balancing national identity, cultural security, and regionalization.
5. Anti-globalism as a theoretical doctrine and social practice: risks and alternatives.
6. The network organization of modern science: computer revolution and global research projects.

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