

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

SUMY NATIONAL AGRARIAN UNIVERSITY

Department of Philosophy and Socio-humanities

APPROVED

Head of the Department

Shevel A.O.

" _____ " _____ 2019

WORKING PROGRAM OF EDUCATIONAL DISCIPLINE

PHILOSOPHY OF SCIENCE

Specialty: *all specialities*

073 "Management"; 091 "Biology"; 133 "Sectoral Engineering "; 201 "Agronomy"; 202 "Protection and Plant Quarantine"; 204 "Technology of production and processing of livestock products"; 211 "Veterinary Medicine"

Faculty: *Postgraduate study*

2019-2020 academic year

Work program on " Philosophy of science" for postgraduate students of all specialties.

Developer

Assistant of the Department of Philosophy and Socio-humanities,
_____ (Perelomov A.Y.)

The working program was approved at a meeting of the Department of Philosophy and Socio-humanities.

Date from " ____ " _____ № ____.

Head of Department of
Philosophy and Socio-humanities

(Shevel A.O.)

Agreed:

Dean of the Faculty _____ (_____)

Dean of the faculty _____ (Radchuk O.V.)

Methodist of the training department _____ (_____)

Registered in the electronic database: date _____ 2019.

1. Description of the academic discipline

The name of indicators	Area of knowledge, direction of training, educational and qualification level	Characteristics of the academic discipline	
		Full-time education	Extramural studies
Number of credits - 2	Field of knowledge: <i>all</i>	<i>Normative</i>	
	Specialty: <i>all</i>		
Modules – 2	Educational degree: <i>PhD</i>	Year of preparation:	
Content modules - 6		2019-2020	
The amount of hours - 90		Course	
		1	
		Semester	
		1	
Weekly hours for daytime training: classroom - 2 independent work of the student - 4		Lectures	
		12 hours	
		Seminar	
		12 hours	
	Self work		
	66 hours		
Type of control		credit	

The ratio of hours of classroom hours to independent and individual work is (%):
for the daytime education – 33/ 67 (30/60);

2. Goals and objectives of the academic discipline

The purpose of teaching the discipline "Philosophy of science" is the formation of students' general ideas about the history of the development of a particular branch of science and the philosophy of scientific knowledge in general, the methodology of scientific creativity, the basic provisions that characterize research as a qualified scientific search in a particular field of science.

The objectives of studying the discipline of the "Philosophy of science" are: to provide students with a weekend knowledge on the organization of research work, using general methods of scientific knowledge and applying formal logical laws and

philosophical principles in the processing, comprehension and generalization of scientific research results.

According to the requirements of the educational and professional program, students must:

to know: the main theoretical positions, important key problems of all the topics of the course, the basic concepts and categories of the discipline, to understand the development of scientific knowledge as the result of a creative search for a scientist, and science as one of the most important institutions of human society, to navigate the most important problems of scientific knowledge.

be able to: synthesize the acquired knowledge from professional and humanitarian disciplines into a holistic view of the world, apply the knowledge gained in scientific activity, apply practical skills in analyzing one or another method of scientific search.

3 The program of academic discipline

Approved by the Academic Council of the Sumy NAU (September 30, 2013, the protocol number 2.)

Module 1.

Features of the philosophy of science.

Content module 1. Introduction to the philosophy of science

Theme 1. Introduction to the Philosophy of Science

Scientific worldview. History of formation and structure. Ontological and epistemological problems of the scientific worldview. Epistemology. Philosophical methodology and methodology of science. Interrelation and mutual influence of philosophy, science and culture. Subject matter of the philosophy of science. Scientism and antiscientism. Historical types of outlook. Genesis of science. Features of classical, non-classical and post-non-classical science in its historical formation.

Content module 2. The phenomenon of science. The basic forms of the existence of science

Theme 1. The phenomenon of science. The basic forms of the existence of science

Science as a cognitive activity. Science as a special form of worldview. Science as a specific type of knowledge. Science as a social institution. System nature of science. Scientific and technological progress. The place of science in the culture of modern civilization.

Content module 3. Structure and methods of scientific knowledge

Theme 1. Structure and methods of scientific knowledge

Levels of scientific knowledge. Structure of empirical knowledge. Methods of empirical research: scientific observation, comparison, measurement, experiment. The relationship of empirics and theory. Methods of theoretical knowledge: idealization, formalization, mathematical modeling. Structure of the scientific theory. Metatheoretical level of scientific knowledge. Abstraction and abstraction in the structure of scientific knowledge. Induction. Falsification. Extrapolation.

Module 2.

Theory and practice of science as a public institution.

Content module 1. Science as a public institution. Ethics of science

Theme 1. Science as a public institution. Ethics of science

Social characteristics of the scientific profession. Structure and functions of the publication array. Types of communication. Science and politics. Scientific community and social movements. Science and business. Moral choice and moral responsibility. Professional responsibility of a scientist. The authority of science: science as the source of good. Values and moral settings of the "great science". Scientific and technological progress and society.

Content module 2. Philosophical problems of biology and medicine

Theme 1. Philosophical problems of biology and medicine

Specificity of philosophical and methodological problems of biology. The essence of the living and the problem of the origin of life. The concept of biochemical origin of life AI Oparin. Transformism, Saltationism, Evolutionism. Anthrosociogenesis and anti-evolutionism. Passionarity and co-evolution - actual problems of philosophy of science XXI century. The problem of death and immortality rights.

Specificity of the subject of bioethics. Ethical and social problems of abortion and euthanasia. Social aspects of the death penalty. The cloning phenomenon and genetic control in the context of a new paradigm. Problems of sex. Transplantation and medical ethics.

Content module 3. Innovative activity and science

Theme 1. Innovative activity and science

The notion of "innovation" and "innovation". Types of innovations in the development of science. Traditional and innovative. The concept of innovative and socio-economic base. International innovation and industrial production. Legal foundations of innovative development. Innovations in modern biology and medicine. Innovative programs in Ukraine.

4. Structure of the academic discipline

Names of content modules and topics	Number of hours											
	Daily form						Extramural					
	Total	including					Total	including				
		l.	s.	lab	ind	i.w.		l	s	lab	ind	i.w.
1	2	3	4	5	6	7	8	9	10	11	12	13
Module 1. Features of the philosophy of science												
Content module 1. Introduction to the philosophy of science.												
Theme 1. Introduction to the philosophy of science.	14	2	2			10						
Content module 2. The phenomenon of science. The basic forms of the existence of												

science													
Theme 1. The phenomenon of science. The basic forms of the existence of science	14	2	2			10							
Content module 3. Structure and methods of scientific knowledge													
Theme 1. Structure and methods of scientific knowledge	16	2	4			10							
Total for module 1	48	8	10			30							
Module 2. Theory and practice of science as a public institution.													
Content module 1. Science as a public institution. Ethics of science													
Theme 1. Science as a public institution. Ethics of science	14	2	2		-	10							
Content module 2. Philosophical problems of biology and medicine													
Theme 1. Philosophical problems of biology and medicine.	14	2	2			10							
Content module 3. Innovative activity and science													
Theme 1. Innovative activity and science	14	2	2			10							
Total for module 2	42	6	6			30							
Total hours.	90	12	12			66							

5. Themes of lecture classes (full-time course)

No i/o	Themes title and plan	Number of hours
1	<p>Theme 1 Philosophy of science as a branch of philosophical knowledge.</p> <p>1. Philosophy of science as a special philosophical discipline.</p> <p>2. Specificity of the philosophical problems of science.</p> <p>3. Historical types of interrelation between philosophy and science.</p>	2
2	<p>Theme 2. Philosophical analysis of the essence of science and its social functions.</p> <p>1. Classical science, its characteristics.</p> <p>2. Non-classical science, its features.</p> <p>3. Post-classical science, its main features.</p>	2

3	Theme 3. The phenomenon of science. The basic forms of the existence of science. 1. Features of scientific knowledge. 2. Science as an activity. 3. Science as a social institution. 4. Functions of science.	2
4	Theme 4. Structure and methods of scientific knowledge. 1. Empirical and theoretical levels, discrimination criteria. 2. Empirical level, its forms and methods. 3. Theoretical level, its forms and methods. 4. Fundamentals of scientific knowledge (ideals and norms of research, the scientific picture of the world, philosophical foundations)	2
5	Theme 5. Science as a public institution. Ethics of science. 1. Ethical norms and values of science. 2. Main topics of ethical discussion of scientific and technical activities 3. Scientific knowledge: freedom and control.	2
6	Theme 7. Innovative activity and science 1. The concepts of "innovation" and "innovation". 2. Concepts of innovation and socio-economic basis. 3. International innovation and industrial production.	2
	Total	12

6. Seminar topics to take (full-time form of training)

№ i/o	Themes title and plan	Number of hours
1	Theme 1 Philosophy of science as a branch of philosophical knowledge.	2
2	Theme 2. Features of classical, non-classical and post-non-classical science in its historical formation.	2
3	Theme 3. The phenomenon of science. The basic forms of the existence of science	2
4	Theme 4. Form and methods of empirical research.	2
5	Theme 5. Теоретический и метатеоретический уровни науки.	2
6	Theme 6. Ethics of science.	2
	Total	12

7. Independent work

№ i/o	Themes title and plan	Number of hours
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1	<p>Theme 1. Introduction to the philosophy of science The scientific worldview. History of formation and structure. Ontological and epistemological problems of the scientific world outlook. Epistemology. Philosophical Methodology and Methodology of Science. Basic concepts and principles. Interconnection and mutual influence of philosophy, science and culture. Subject field of philosophy of science. Scientist and anti-scientism. Historical types of world outlook. Genesis of science. Features of classical, non-classical and post-classical science in its historical formation.</p>	10
2	<p>Theme 2. The phenomenon of science. Basic forms of being of science. Science as cognitive activity. Science as a special form of outlook. Science as a specific type of knowledge. Science as a social institution. Systemic nature of science. Scientific and scientific and technological progress. Place of science in the culture of modern civilization.</p>	10
3	<p>Theme 3. Structure and methods of scientific knowledge. Levels of scientific knowledge. Structure of empirical knowledge. Methods of empirical research: scientific observation, comparison, measurement, experiment. Value of empiric and theory. Methods of theoretical knowledge: idealization, formalization, mathematical modeling. The structure of scientific theory. Metatheoretical level of scientific knowledge. Abstraction and abstraction in the structure of scientific knowledge. Induction. Falsification. Extrapolation.</p>	10
4	<p>Theme 1. Ethics of science. Social characteristics of the scientific profession. The structure and functions of the array of publications. Types of communication. Science and politics. Scientific community and social movements. Science and business. Moral choice and moral responsibility. Professional responsibility of the scientist. The worldview of science: science as a source of good. Valuable and moral installations of "great science". Scientific and technological progress and its moral problems.</p>	10
5	<p>Theme 5. Philosophical problems of biology and medicine. Specificity of philosophical and methodological problems of biology. The essence of the living and the problem of the origin of life. Concept of biochemical origin of life of AI Oparin. Transformism, Saltonizm, evolutionism. Antroposotogenesis and anti-evolutionism. Passionarity and co-evolution - the actual problems of the philosophy of science of the XXI century. The problem of</p>	10

	death and immortality of man. Specificity of the subject of bioethics. Ethical and social problem of abortion and euthanasia. Social aspects of the death penalty. The phenomenon of cloning and genetic control in the context of a new paradigm. Gender issues. Transplantation and medical ethics.	
	Theme 6. Innovation activities and science. The concept of "innovation" and "innovation". Types of innovations in the development of science. Traditional and innovative. The concept of innovation, socio-economic base. International innovation activity and industrial production. Legal grounds for innovation development. Innovations in modern biology and medicine. Innovative programs in Ukraine.	10
	Total	60

8. Individual tasks

1. Preparation of abstracts:

1. The place and role of epistemology and epistemology in the philosophy of science
2. Science as an object of philosophical reflection.
3. Variety of forms of knowledge. Scientific and scientific knowledge.
4. Philosophical principles and methodological principles of fundamental sciences.
5. Place and role of philosophy in the system of culture: history and modernity.
6. The essence of the philosophical concepts of the XIX-XX centuries in the light of scientism and antisycytism.
7. The concept of science. The problem of the historical age of science.
8. The structure of scientific knowledge.
9. Classical, non-classical stages of the development of science.
10. Science as a specialized form of knowledge.
11. Scientific and unscientific knowledge in the historical aspect.
12. Science as a social institution.
13. Science and scientific and technological progress.
14. The concept of scientific rationality and "common sense".
15. Place and role of empirical knowledge in modern biology.
16. Abstraction and abstraction in the structure of biological science.
17. Theoretical methods of cognition in modern biology
18. Theoretical methods of cognition in engineering.
19. The problem of the origin of science in the philosophy of the Enlightenment (XVIII century.)
20. Ancient science: natural philosophy, archa, cosmology, cosmogony, the origin of life
21. Aristotle as the systematization of modern scientific knowledge: logic, physics, theology

22. Empirical science of modern times in the philosophy of F. Bacon, R. Descartes and T. Hobbes.

23. Scientific discoveries in the beginning of the XIX century and features of positivism by O. Comte and G. Spencer

24. The course of scientific discoveries at the intersection of the nineteenth and twentieth centuries

25. Fundamental and worldview changes in the biological science of the XIX century.

26. Theoretical and methodological aspects of the concept of development of science Thomas Kuhn.

27. Scientific activity as a special profession.

28. History of the emergence and development of scientific organizations and scientific publications.

29. Types of communication in science.

30. Scientific activity and its economical business aspects.

31. Moral choice and moral responsibility of the scientist.

32. Values and ethics of the "great science".

33. The doctrine of Darwin and the development of the idea of evolutionism.

34. Nedarvinivsky the concept of evolution.

35. Scientific and technological progress: ethics, ecology, globalization.

9. Methods of teaching

1. Methods of research on sources of knowledge:

1.1. **Verbal: story, explanatory, conversation (heuristic and reproductive), lecture, work with the book (reviewing, note-taking).**

1.2. **Visual: a demonstration.**

2. Methods of teaching by the nature of the logic of cognition.

2.1. **Analytic**

2.2. **Synthesis methods**

2.3. **Inductive method**

2.4. **Deductive method**

3. Methods of teaching on the nature and level of independent mental activity of students.

3.1. **Problem (problem-information)**

3.2. **Partial-search (heuristic)**

4. Active methods of training) - use of technical means of training, brainstorming, debates, round tables, use of problem situations, use of educational and monitoring tests.

5. Interactive learning technologies - the use of multimedia technologies.

10. Methods of control

1. Rating control on 100-grade scale of estimation of ECTS

2. Intermediate control during the semester (intermediate certification)

3. Policiary evaluation of current work of students:

- the level of knowledge demonstrated at the seminar sessions;

- activity during the discussion of issues that are on the lessons;
- independent processing of the topic as a whole or separate issues;
- writing essays;
- test results;
- Written assignments in the course of control works.

11. Distribution of points received by students

Current testing and independent work							Total for modules and IWS	Certificate	Amount
Module 1 - 35 points			Module 2 - 35 points						
Content module 1	Content module 2	Content module 3	Content module 1	Content module 2	Content module 3	IWS			
T1	T1	T1	T1	T1	T1	15	85 (70+15)	15	100
8-12	8-12	8-12	8-12	8-12	8-12				

Scale of assessment national and ECTS

The sum of points for all types of educational activity	Evaluation ECTS	National scale rating	
		For exam	for credit
90 – 100	A	excellent	credited
82-89	B	good	
75-81	C	satisfactorily	
69-74	D		
60-68	E		
35-59	FX	unsatisfactory with the possibility of retaking	Not reckoned with the possibility of re-surrender
1-34	F	unsatisfactory with the obligatory re-study of the discipline	Not reckoned with the mandatory re-study of the discipline

12. Methodological support

1. Educational-methodical complex for studying discipline "Philosophy of Science" for students of the specialty "Veterinary Medicine " (electronic version).

13. Recommended literature

1. Philosophy of science as a branch of philosophical knowledge.

Basic

1. Berdyayev N.N. *Filosofiya svobody. Smysl tvorchestva.* – M., 1989.
2. Bashlyar G. *Novyy ratsionalizm.* – M, 1987.
3. Vandishev V.M. *Filosofiya: yekskurs v istoriyu vchen' í ponyat'.* – Kiřv, 2006.
4. Gusserl' E. *Filosofiya kak strogaya nauka.* – Novocherkassk, 1994.
5. Zelenov L.A., Vladimirov A.A., Shchurov V.A. *Istoriya i filosofiya nauki.* – M., 2008.
6. Ivin A.A. *Sovremennaya filosofiya nauki.* – M., 2005.
7. Illarionov S.V. *Teoriya poznaniya i filosofiya nauki.* – M., 2007.
8. *Istoriya i filosofiya nauki / Pod red. A.S. Mamzina.* – SPb., 2008.
9. *Istoriya i filosofiya nauki: Vvedeniye v spetsial'nost' / Pod red. A. Ursula.* – M., 2005.

Additional

1. *Istoriya i filosofiya nauki (Filosofiya nauki) / Pod red. YU. Kryaneva, L. Motorinoy.* – M., 2007.
2. Karamova O.V. *Filosofiya, metodologiya i istoriya ekonomicheskoy nauki.* – M., 2007.
3. Kotenko V.P. *Istoriya i filosofiya klassicheskoy nauki.* – M., 2005.
4. Kokhanovskiy V.P. *Osnovy filosofii nauki: Uchebnoye posobiye dlya aspirantov.* – Rostov-na-Donu, 2006.
5. Kokhanovskiy V.P. *Filosofiya nauki v voprosakh i otvetakh.* – Rostov-na-Donu, 2007.
6. Lektorskiy V.A. *Epistemologiya klassicheskaya i neklassicheskaya. 2-ye izd.* – M., 2006.
7. Lipkin A.I. *Filosofiya nauki.* – M., 2007.
8. Naydysh V.M. *Kontseptsii sovremennogo yestestvoznaniya / Izd. 2-ye, pererab. i dop.* – M., 2004.
9. Nikitich L.A. *Istoriya i filosofiya nauki.* – M., 2008.
10. Nikiforov A. *Filosofiya nauki. Istoriya i teoriya.* – M., 2006.
11. Popper K.R. *Znaniye i psikhofizicheskaya problema.* – M., 2008.
12. Porus YA.P. *Epistemologiya: nekotoryye tendentsii // Voprosy filosofii.* – 1997. – №2.
13. Reale Dzh., Antiseri TS. *Zapadnaya filosofiya ot istokov do nashikh dney.* – SPb., 1997. CH. 2.
14. Rozin V.M. *Metodologiya: Stanovleniye i sovremennoye sostoyaniye.* – M., 2006.

15. Shvyrev B.C. Teoreticheskoye i empiricheskoye v nauchnom poznanii. – M., 1978.

2. The phenomenon of science. The basic forms of the existence of science

Basic

1. Vernadskiy V.I. Razmyshleniya naturalista. Nauchnaya mysl' kak planetarnoye yavleniye. – M., 1978.
2. Gaydenko P.P. Evolyutsiya ponyatiya nauki (XVII-XVIII vv.). – M., 1987.
3. Diskursy ezoteriki (filosofskiy analiz) / Otv. red. L.V. Fesenkova. – M., 2001.
4. Il'in V.V. Kriterii nauchnosti znaniya. – M., 1989.
5. Karpinskaya R. S., Liseyev I. K., Ogurtsov A. P. Filosofiya prirody: koevolyutsionnaya strategiya. – M., 1995.
6. Kasavin I.T., Sokuler Z.A. Ratsional'nost' v poznanii i praktike. – M., 1996.
7. Kezin A. V Nauchnost': etalony, idealy, kriterii. – M., 1985,
8. Kosareva A.M. Predmet nauki. – M., 1977.
9. Lebedev S.A. Filosofiya nauki: slovar' osnovnykh terminov. – M., 2006.
10. Lektorskiy V.A. Sub'yekt, ob'yekt, poznaniye. – M., 1980.

Additional

1. Nauka v kul'ture. – M., 1998.
2. Nenashev M.I. Vvedeniye v logiku. – M., 2004.
3. Sovremennyye filosofskie problemy yestestvennykh, tekhnicheskikh i sotsial'no-gumanitarnykh nauk / Pod red. V.V. Mironova. – M., 2006.
4. Sotsial'naya dinamika sovremennoy nauki / Pod red. V.ZH. Kelle. – M., 1995.
5. Sotsiokul'turnyy kontekst nauki. – M., 1998.
6. Stepin B.C. Teoreticheskoye znaniye. Struktura, istoricheskaya evolyutsiya. – M., 2000.
7. Stepin B.C. Filosofiya nauki. Obshchiye problemy. – M., 2006.
8. Stepin V. S. Filosofskaya antropologiya i filosofiya nauki. – M., 1992.
9. Stepin B.C., Gorokhov V.T., Rozov M.A. Filosofiya nauki i tekhniki. – M., 1996.
10. Filatov V.P. Nauchnoye poznaniye i mir cheloveka. – M., 1989.
11. Filosofiya: problemnyy kurs: Uchebnik / Pod red. S.A. Lebedeva. – M., 2002.

3. Structure and methods of scientific knowledge

Basic

1. Bazhenov L.B. Stroyeniye i funktsii yestestvennonauchnoy teorii. – M., 1978.
2. Vandishev V.M. Filosofiya: yekskurs v istoriyu vchen' í ponyat'. – Kiïv, 2006.
3. Idealy i normy nauchnogo issledovaniya. – Minsk, 1981.
4. Karnap R. Filosofskie osnovaniya fiziki. Vvedeniye v filosofiyu nauki. – M., 1971,
5. Kontseptsii sovremennogo yestestvoznaniya / Pod red. S.A. Lebedeva. – M., 2007.
6. Kun T. Struktura nauchnykh revolyutsiy. – M., 1985.

7. Lebedev S.L. Induktsiya kak metod nauchnogo poznaniya. – M., 1980.
8. Lebedev S.A. Sovremennaya filosofiya nauki. – M., 2007.
9. Manchur Ye.L. Problemy sotsiokul'turnoy determinatsii nauchnogo znaniya. – M., 1987.
10. Merkulov I.P. Metod gipotez v istorii nauchnogo poznaniya. – M., 1984.

Additional

1. Nikitin Ye.P. Otkrytiye i obosnovaniye. – M., 1988.
2. Polani M. Lichnostnoye znaniye. – M., 1985.
3. Popper K. Logika i rost nauchnogo znaniya. – M., 1983.
4. Sovremennaya filosofiya nauki: Khrestomatiya / Sost. A.A. Pechenkin. – M., 1991.
5. Stepin B.C. Osnovaniya nauki i ikh sotsiokul'turnaya razmernost' // Nauka v kul'ture. – M., 1998.
6. Stepin B.C. Teoreticheskoye znaniye. – M., 2000.
7. Struktura i razvitiye nauki. – M., 1978,
8. Tulmin St. Chelovecheskoye ponimaniye. – M., 1984,
9. Feyyeraabend P. Izbrannyye trudy po metodologii nauki. – M., 1990.
10. Filosofiya yestestvennykh nauk / Pod red. S.A. Lebedeva. – M., 2006.
11. Filosofiya matematiki i tekhnicheskikh nauk / Pod red. S.A. Lebedeva. – M., 2006.

4. Ethics of science

Basic

1. Avdulov A.N., Kul'kin A.M. Vlast', nauka, obshchestvo. Sistema gosudarstvennoy podderzhki nauchno-tekhnicheskoy deyatel'nosti: opyt SSHA. – M., 1994.
2. Bioetika: printsipy, pravila, problemy / Pod red. B.G. Yudina. – M., 1998.
3. Kommunikatsiya v sovremennoy nauke / Sb. perev. s angl. pod red. E.M. Mirskogo i V.N. Sadovskogo. – M., 1976.
4. Lyubutin K.N. Chelovek v filosofskom izmerenii (iz istorii problemy). – Sverdlovsk, 1991.
5. Naydysh V.M. Kontseptsii sovremennogo yestestvoznaniya / Izd. 2-ye, pererab. i dop. – M., 2004.
6. Nauka Rossii na poroge XXI veka: problemy organizatsii i upravleniya / Pod obshch. red. S.A. Lebedeva. M., 2000.
7. Nauchnaya deyatel'nost': struktura i instituty / Sb. pe-rev. s angl. i nem. pod red. E.M. Mirskogo i B.G. Yudina. – M., 1980.

Additional

1. 1. Pel'ts D., Endryus F. Uchenyye v organizatsiyakh / Per. s angl. – M., 1973.
2. Perminov V.YA. Problema prichinnosti v filosofii i yestestvoznanii. – M., 1979.
3. Popper K.R. Znaniye i psikhofizicheskaya problema. – M., 2008.
4. Problemy deyatel'nosti uchenogo i nauchnykh kollektivov: Mezhdunarodnyy yezhegodnik. – SPb., 1969–2002. – Vyp. 1–13.

5. Teyyar de Sharden P. Fenomen cheloveka. – M., 1987.
6. Sen-Mark F. Sotsializatsiya prirody. – M., 1977.
7. Sovremennaya zapadnaya sotsiologiya nauki. Kriticheskiy analiz / Otv. red. V.ZH. Kelle, Ye.Z. Mirskaya, A.A. Ignat'yev. – M., 1988.
8. Sovremennyye filosofskiye problemy yestestvennykh, tekhnicheskikh i sotsial'no-gumanitarnykh nauk / Pod red. V.V. Mironova. – M., 2006.
9. Sotsial'naya dinamika sovremennoy nauki / Otv. red. V.ZH. Kelle. – M., 1995.
10. Filosofiya yestestvennykh nauk / pod red. S.A. Lebedeva. – M., 2006.
11. Filosofiya nauki: nauka kak deyatel'nost' / Pod red. S.A. Lebedeva. – M., 2007.
12. Filosofiya sovremennogo yestestvoznaniya: Uchebnoye posobiye dlya vuzov. – M., 2004.
13. Frolov I.T., Yudin B.G. Etika nauki. Problemy i diskussii. – M., 1986.

5. Philosophical problems of biology

Basic

1. Azimov A. Kratkaya istoriya biologii. – M., 2002.
2. Aristotel'. O chastyakh zhivotnykh. – M., 1937.
3. Baltika N.M., Kuramshina N.G., Gilyazetdinov SH.YA. Elementarnaya yedinita zhivogo i filosofskiye aspekty biologii: Uchebnoye posobiye po biologii. Bashkirskiy institut povysheniya kvalifikatsii rabotnikov obrazovaniya. – Ufa, 1994.
4. Berg P.JI. Iz vospominaniy genetika // Voprosy filosofii. – 1993. – №7. – S.93-124.
5. Berg L. S. Nomogenez, ili evolyutsiya na osnove zakonomernostey. – L., 1977.
6. Biologiya v sisteme nauk o cheloveke. – M., 1986.
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