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Информация о владельце:  
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Должность: Ректор  
Дата подписания: 16.05.2025 10:44:09  
Уникальный программный ключ:  
ca953a0120d891083f939673078ef1a989dae18a

**Federal State Autonomous Educational Institution for Higher Education  
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA NAMED AFTER PATRICE LUMUMBA  
(RUDN University)**

*Institute of World Economy and Business*

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(educational division (faculty/institute/academy) as higher education programme developer)

## **COURSE SYLLABUS**

### **HISTORY AND METHODOLOGY OF SCIENCE**

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(course title)

**Recommended by the Didactic Council for the Education Field of:**

**45.04.02 "LINGUISTICS" (Master's degree)**

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(field of studies / specialty code and title)

**The course instruction is implemented within the professional education programme of higher education:**

**"Foreign language of professional communication and specialized translation"**

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(higher education programme profile/specialisation title)

## 1. COURSE GOAL

The goal of mastering the course "History and Methodology of Science" is to form an idea of the achievements of human thought in various periods of history, about the role and place of science in the development of human society, to equip students with the skills to analyze the main ideological and methodological problems arising in science at the present stage of its development and to get an idea of the trends of the historical development of science. The course pays special attention to the problems of linguistics methodology.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the discipline (module) "History and Methodology of Science" is aimed at the development of the following competencies /competences in part:

*Table 2.1. List of competences that students acquire through the course study*

<b>Competence code</b>	<b>Competence description</b>	<b>Competence development indicators (in the framework of this course)</b>
<b>GC-1</b>	Ability to search, critically analyze problem situations based on a systematic approach, and develop a strategy of actions.	GC-1.1 Ability to analyze the problem situation and decomposes it into separate tasks
		GC-1.2 Develops a strategy for solving the task
		GC-1.3 Ability to form possible solutions to the problem
<b>GC-5</b>	Ability to analyze and take into account the diversity of cultures in the process of intercultural interaction.	GC-5.1. Demonstrates an understanding of the characteristics of different cultures and nations
		GC-5.2 Ability to build social interaction, taking into account things in common and peculiarities of different cultures and religions
<b>GPC-3</b>	Proficiency in the general theory of teaching and the methodology of teaching specialized disciplines of the chosen course of the main educational programme, ability to use modern educational technologies in practical activities	GPC-3.1. Demonstrates proficiency in the theory of teaching and teaching methods of specialized disciplines of the chosen course of the main educational programme
		GPC-3.2. Ability to use modern educational technologies in practice
<b>GPC -6</b>	Ability to use modern technologies for collecting, processing and interpreting experimental data, techniques for	GPC-6.1. Uses modern technologies for collecting, processing and interpreting the experimental data obtained in professional activities

<b>Competence code</b>	<b>Competence description</b>	<b>Competence development indicators (in the framework of this course)</b>
	compiling and processing scientific documentation (dissertation, report, abstract, abstract)	GPC-6.2. Ability to apply various methods of compilation and registration of scientific documentation

### 3.COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The course «History and Methodology of Science» refers to the core component of (Б1.О.01) block of the higher educational programme curriculum.

Within the higher education programme students also master other (modules) and / or internships that contribute to the achievement of the expected learning outcomes as results of the course "History and Methodology of Science" study.

*Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course study results*

<b>Competence code</b>	<b>Competence description</b>	<b>Previous Disciplines/Modules*</b>	<b>Subsequent Disciplines/Modules*</b>
PC-1	Ability to search, critically analyze problem situations based on a systematic approach, and develop a strategy of actions.		Theory and practice of cross-cultural business communication; General linguistics and the history of linguistic studies; Quantitative linguistics and new information technologies
PC-5	Ability to analyze and take into account the diversity of cultures in the process of intercultural interaction.		Theory and practice of cross-cultural business communication; Practicum on the culture of professional communication (second foreign language); Practicum on the culture of professional communication (main foreign language)
GPC -3	Proficiency in the general theory of teaching and the methodology of teaching specialized disciplines of the chosen course of the main educational programme, ability to		Pedagogical internship

Competence code	Competence description	Previous Disciplines/Modules*	Subsequent Disciplines/Modules*
	use modern educational technologies in practical activities		
GPC -6	Ability to use modern technologies for collecting, processing and interpreting experimental data, techniques for compiling and processing scientific documentation (dissertation, report, abstract, abstract)		Educational internship

\* - to be filled in according to the competency matrix of the higher education programme

#### 4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course "History and methodology of Science" is 4 credits.

*Table 4.1. Types of academic activities during the periods of higher education programme mastering (full-time training)\**

Type of academic activities		TOTAL, academic hours	Semesters/training modules			
			1	2	3	4
<i>Contact, academic hours</i>		34	34			
Lectures (LC)		34	34			
Laboratory work (LW)						
Seminars (workshops/tutorials) (S)						
<i>Self-studies, academic hours</i>		83	83			
<i>Evaluation and assessment (exam/pass/fail grading), academic hours</i>		27	27			
<b>Course workload</b>	academic hours	<b>144</b>	<b>144</b>			
	credits	<b>4</b>	<b>4</b>			

*Table 4.2. Types of academic activities during the periods of higher education programme mastering (part-time training)\**

Type of academic activities		TOTAL, academic hours	Semesters/training modules			
			1	2	3	4
<i>Contact, academic hours</i>						

Type of academic activities		TOTAL, academic hours	Semesters/training modules			
			1	2	3	4
Lectures (LC)						
Laboratory work (LW)						
Seminars (workshops/tutorials) (S)						
<i>Self-studies, academic hours</i>						
<i>Evaluation and assessment (exam/pass/fail grading), academic hours</i>						
<b>Course workload</b>	academic hours					
	credits					

\* - to be filled in in case of the higher education programme part-time training

*Table 4.3. Types of academic activities during the periods of higher education programme mastering (correspondence training)\**

Type of academic activities		TOTAL, academic hours	Semesters/training modules			
			1	2	3	4
<i>Contact, academic hours</i>						
Lectures (LC)						
Laboratory work (LR)						
Seminars (workshops/tutorials) (S)						
<i>Self-studies, academic hours</i>						
<i>Evaluation and assessment (exam/pass/fail grading), academic hours</i>						
<b>Course workload</b>	academic hours					
	credits					

\* - to be filled in in case of the higher education programme correspondence training mode

## 5. COURSE CONTENTS

*Table 5.1. Course contents and academic activities types*

Course module title	Course module contents (topics)	Academic activities types*
Module 1. Philosophy of Science	Topic 1.1. Main Aspects of Science Genesis Features and variety of forms of scientific knowledge	LC
	Topic 1.2. Forms of organization of science. Scientific community.	LC
Module 2. General patterns of the emergence and development of science.	Topic 2.1. The general cultural significance of the history of science and its role in understanding science.	LC
	Topic 2.2. General models of the historiography of science.	LC

Course module title	Course module contents (topics)	Academic activities types*
	Topic 2.3. Traditions and innovations in the development of science. Scientific Schools as Forms of Origin and Reproduction of Traditions	LC
	Topic 2.4. Scientific revolutions as fundamental transformations of basic scientific concepts, concepts, theories.	LC
Module 3. Logical-epistemological and axiological problems of science.	Topic 3.1. The problem of fact and theory. Structure of the fact. Formation of interpretations.	LC
	Topic 3.2. The problem of truth in scientific knowledge. Principle of Verification.	LC
	Topic 3.3. The problem of the unity of science. The diversity of scientific disciplines and the connections between them.	LC
	Topic 3.4. The problem of the axiological sovereignty of science and the unpredictability of the consequences of scientific and technological progress.	LC
	Topic 3.5. Specifics of target settings in natural science, humanities, social cognition, and engineering craft	LC

\* - to be filled in only for full -time training: LC - lectures; LW - lab work; S - seminars.

## 6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

Classroom type	Classroom equipment	Specialized educational/laboratory equipment, software and materials for course study (if necessary)
Seminary	A classrom for conducting seminar-type classes, group and individual consultations, ongoing monitoring and interim certification, equipped with a set of specialized furniture and multimedia presentation equipment.	323 Multimedia projector Casio XJ-M250 Wall-mounted screen Digis Dsob-1106 340 Casio XJ-F100W Multimedia projector Wall-mounted screen Digis Dsem-1105 330 Multimedia projector Casio XJ-M250 Wall-mounted screen Digis Dsob-1106

Classroom type	Classroom equipment	Specialized educational/laboratory equipment, software and materials for course study (if necessary)
Computer class	An auditorium for conducting classes, group and individual consultations, current and mid-term assessment, equipped with personal computers (in the amount of ____ pcs), a board (screen) and technical means of multimedia presentations.	472 Laptop Asus X751L Intel I5 1700 MHz/8 GB/1000 GB/DVD/audio (15) Multimedia projector Benq MW526 Screen 220*220 MS Windows 8.1 64bit Microsoft Office 2013 SDL Trados Studio 2015 Adobe Reader FastStone Image Viewer
Self-studies	An auditorium for independent work of students (can be used for seminars and consultations), equipped with a set of specialised furniture and computers with access to the electronic information and educational environment	324 Multimedia projector Casio XJ-M250 Wall-mounted screen Digis Dsob-1106

\* The premises for students' self-studies are subject to MANDATORY mention

## 7. RESOURCES RECOMMENDED FOR COURSE STUDY

### *Main reading*

- Stepin Vyacheslav Semenovich. *Filosofiya i metodologiya nauki. Izbrannoe [Tekst/e`lektronny`j resurs] / V.S. Stepin. - E`lektronny`e tekstovy`e dannyy`e. - M. : Akademicheskij proekt : Al`ma Mater, 2019. - 716 s. - (Filosofskie tekhnologii: Izbranny`e filosofskie trudy`).* URL: <http://lib.rudn.ru/ProtectedView/Book/ViewBook/6753>
- Istoriya i metodologiya nauki [Tekst] : Uchebno-metodicheskij kompleks / N.L. Sokolova. - M. : Izd-vo RUDN, 2018. - 56 s.

### *Additional reading:*

- Vvedenie v logiku i metodologiyu nauki: [Ucheb. posobie] / S. C. Goncharov, Yu. L. Ershov, K. F. Samoxvalov. — M., Novosibirsk: Interpraks In-t matematiki SO RAN, 2014 (Programma “Obnovlenie gumanitarnogo obrazovaniya v Rossii”). Jazap M. E`tika nauki. – JL, 2023
- Puankare A. O nauke. – M.: Nauka, 2019
- Sinergeticheskaya paradigma / Pod red. V .S. Stepina i dr. – M., 2019
- Struktura i razvitie nauki: Iz Bostonskix issledovanij po filosofii nauki. – M.: Progress, 2020 (Logika i metodologiya nauki)
- Tarskij A. Vvedenie v logiku i metodologiyu deduktivny`x nauk. – M.: Trivium, 2019.
- Bernal Dzh. Nauka v istorii obshhestva. – M., 2018;

### *Internet sources*

1. Electronic libraries (EL) of RUDN University and other institutions, to which university students have access on the basis of concluded agreements

<http://lib.rudn.ru/MegaPro/Web> - RUDN Electronic Library System (RUDN ELS)  
<http://lib.rudn.ru/MegaPro/Web>

<http://www.biblioclub.ru/> EL "University Library Online" <http://www.biblioclub.ru>

<http://www.biblio-online.ru> EL "Yurayt" <http://www.biblio-online.ru>

<http://www.studentlibrary.ru/> EL "Student Consultant" [www.studentlibrary.ru](http://www.studentlibrary.ru)

<http://e.lanbook.com/> EL "Lan" <http://e.lanbook.com/>

- EL "Trinity Bridge"

2. Databases and search engines:

<http://docs.cntd.ru/> electronic foundation of legal and normative-technical documentation <http://docs.cntd.ru/>

- Yandex search engine [https://www.yandex.ru /](https://www.yandex.ru/)

- Google search engine [https://www.google.ru /](https://www.google.ru/)

- SCOPUS abstract database [http://www.elsevierscience.ru/products/scopus /](http://www.elsevierscience.ru/products/scopus/)

*Training toolkit for self- studies to master the course \*:*

1. A course of lectures on the discipline "History and methodology of science".

Section I.

PHILOSOPHY OF SCIENCE

Topic 1. Main Aspects of Science Genesis Science as a system of knowledge, as a process of obtaining new knowledge, as a social institution and as a special field of culture. Prospects of civilization and the development of scientific knowledge.

Features and variety of forms of scientific knowledge Empirical and theoretical knowledge in various sciences. Features of the language of science. The interaction of science with other forms of cognition. Individual cognition and personal knowledge.

General characteristics of the main methods of scientific cognition. Means and methods of empirical cognition. Means and methods of theoretical knowledge. Analysis and synthesis, induction and deduction. Formalization. The problem of scientism and anti-scientism. Thought experiment and theoretical modeling.

Topic 2. Forms of organization of science. Scientific community. Scientific schools and collectives. Science in the system of culture. Science and production. The relationship of philosophy and science. The main historical types of relations between philosophy and science. The functions of philosophy in scientific knowledge. Science studies. Philosophy and worldview of a scientist. Ethics of scientific activity.

Section II.

GENERAL PATTERNS OF THE EMERGENCE AND DEVELOPMENT OF SCIENCE.

Topic 3. The general cultural significance of the history of science and its role in understanding science. Empirical and theoretical explanation of the history of science. Criticism of Eurocentrism and anti-Historicism in understanding the essence and origin of science.

General models of the historiography of science. A neo-positivist model of the development of science. The concept of the development of scientific knowledge K. Popper. The concept



of paradigm shift T . Kun. Methodology of research programs I. Lakatos. Reconstruction of the history of science by P. Feyerabend. The evolutionist model.

Topic 4. Traditions and innovations in the development of science. Scientific Schools as Forms of Origin and Reproduction of Traditions Traditions, style of thinking, creativity. New methodological ideas and a change of thinking styles.

Scientific revolutions as fundamental transformations of basic scientific ideas, concepts, and theories The diversity and versatility of scientific revolutions. Continuity in the development of knowledge and the problem of correlations of scientific theories with each other. The interrelation of scientific and technical revolutions.

Differentiation and integration in science. Uneven development of various scientific fields and disciplines. The problem of classification of sciences. Interaction of sciences as a factor of their development. Theoretical knowledge as an integrating factor in the development of science

Section III.

LOGICAL-EPISTEMOLOGICAL AND AXIOLOGICAL PROBLEMS OF SCIENCE.

Topic 5. The problem of fact and theory. Structure of the fact. Formation of interpretations. Reduction of interpretations in the structure of scientific research. Hypothesis, experimental data and theory. Descriptive and theoretical disciplines. Features of historical disciplines. Qualitative and quantitative, mathematized and non-mathematized theories. Genetic and systematic theories. The structure of the theory. The variety of functions of theories.

Understanding, explanation, description and prediction (forecasting). Empirical and theoretical descriptions. Description and reconstruction. Features of forecasting social phenomena. Forecasting and global problems of modern civilization.

Topic 6. The problem of truth in scientific knowledge. Principle of Verification. Falsificationism. Scientific knowledge and human psychology. Aesthetic criteria for choosing theories.

Topic 7. The problem of the unity of science. The diversity of scientific disciplines and the connections between them. General and special in the development of science. Scientific pictures of the world and their significance. The problem of reductionism. Independence of sciences. The effectiveness and limitations of reductionist programs and the history of science.

Topic 8. The problem of the axiological sovereignty of science and the unpredictability of the consequences of scientific and technological progress. Civil responsibility of scientists. Scientific ideals and targets in the field of fundamental and applied research. The problem of the ideal is in technology. The specificity of target settings in natural science, humanities, social cognition and engineering craft.

\* The training toolkit for self- studies to master the course is placed on the course page in the university telecommunication training and information system under the set procedure.

**8. ASSESSMENT TOOLKIT AND GRADING SYSTEM\* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL UPON COURSE COMPLETION**

The assessment toolkit and the grading system\* to evaluate the competences formation level (competences in part) upon the course study completion are specified in the Appendix to the course syllabus.  
<https://esystem.rudn.ru/course/view.php?id=8438&notifyeditingon=1> .

\*The assessment toolkit and the grading system are formed on the basis of the requirements of the relevant local normative act of RUDN University (regulations / order).

**DEVELOPERS:**

**Teaching assistant of SPHD**

**Faculty of Humanities and**

**Social Sciences**

**Ganin A.V.**

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Position, Educational Department

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Signature

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Name and surname

**HEAD OF THE HIGHER EDUCATION PROGRAMME:**

**FLD EF**

**Malyuga E.N.**

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Educational Department

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Signature

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Name and surname