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**Federal State Autonomous Educational establishment of higher education
RUDN-University**

Engineering Academy

Department of innovation management in industries

Academic course working program

Methodology of Scientific Research

(наименование дисциплины/модуля)

Scientific specialty:

2.3.4 Management in Organizational Systems

(код и наименование научной специальности)

2023 г.

1. The aim and tasks

The purpose of mastering the discipline "Methodology of Scientific Research" is to prepare for the candidate's examinations, as well as gaining knowledge, skills and experience in the research field, characterizing the stages of the formation of competencies and ensuring the achievement of the planned results of mastering the educational program.

The main objectives of the discipline are:

- teaching the basics of scientific research methodology;
- formation of modern ideas about research related to management in organizational systems;
- formation of ideas about the basic concepts, stages, logic of scientific research;
- training in effective monitoring and diagnostics of the most pressing problems in the chosen specialization.
- the formation of skills for the correct presentation and design of scientific papers of a different nature.

2. Requirements to the outcome of the course:

To know:

- methods of critical analysis and evaluation of modern scientific achievements, as well as methods for generating new ideas when solving research and practical problems, including in interdisciplinary areas
- the main concepts of modern philosophy of science, the main stages of the evolution of science,
- functions and foundations of the scientific picture of the world
- features of presenting the results of scientific activity in oral and written form when working in Russian and international research teams
- the main range of problems (tasks) encountered in the chosen field of scientific activity, and the main methods (methods, algorithms) for solving them;
- the main sources and methods of searching for scientific information on the issues under study.
- methodological approaches to conducting theoretical and experimental research;
- principles of organization of theoretical and experimental research.

To be able to:

- analyze alternative options for solving research and practical problems and evaluate the potential gains / losses in the implementation of these options;
- when solving research and practical problems, generate new ideas that lend themselves to operationalisms based on available resources and constraints.
- use the provisions and categories of the philosophy of science for the analysis and evaluation of various facts and phenomena
- follow the norms adopted in scientific communication when working in Russian and international research teams in order to solve scientific and educational problems;
- make a personal choice in the process of working in Russian and international research teams, evaluate the consequences of the decision made and bear responsibility for it to yourself, colleagues and society
- find (choose) the most effective (methods) for solving the main types of problems (tasks) encountered in the chosen field of scientific activity;
- analyze, systematize and assimilate the best practices in scientific research.

To master:

- analysis of methodological problems that arise when solving research and practical problems, including those in interdisciplinary areas;
- critical analysis and evaluation of modern scientific achievements and results of activities to

- solve research and practical problems, including in interdisciplinary areas.
- analysis of the main ideological and methodological problems, incl. interdisciplinary character arising in science at the present stage of its development;
 - ownership of planning technologies in professional activities in the field of scientific research.
 - effective analysis of the main ideological and methodological problems, incl. interdisciplinary nature arising from work on solving scientific and educational problems in Russian or international research teams;
 - technologies for evaluating the results of collective activities to solve scientific and educational problems, including those conducted in a foreign language;
 - technologies for planning activities within the framework of work in Russian and international teams to solve scientific and scientific and educational problems;
 - various types of communications in the implementation of work in Russian and international teams to solve scientific and scientific and educational problems.
 - modern methods, tools and technologies of research activities;
 - skills in preparing and implementing a program of theoretical and experimental research.

3. Workload of the course and forms of study work

General workload of the course 3.

Table 3.1. Form of study work of EP *61*

Form of study work	Total hours	Year			
		1	2	3	4
Class hours (total)	18	18			
including:					
Lectures (Lc)	10	10			
Laboratory classes (LC)					
Seminars (S)	8	8			
Autonomous work (AW), hr	18	18			
<i>Assessment form, ac.h.</i>					
In total	hr	36	36		
	credits	1	1		

4/Content of the course

Table 4.1. Content of the course

Topics	The content of the topic	Forms of study work
Methodological foundations of research work	The structure of scientific knowledge. Forms of organization of scientific knowledge. Sources and conditions of research search. Concepts and functions of the methodology in relation to subsoil use and mining sciences.	Lc, S, AW
Fundamentals of organizing scientific research	Definition of the object, subject, hypothesis, purpose and objectives of the study in relation to subsoil use and mining sciences. Research methodology, research topic and its relevance. Formulation of contradictions and the main problem. Research methods methodology applicable to management in organizational systems. Methods of theoretical research. Statistical methods and means of formalization.	Lc, S, AW

Logic in research work	Stages of designing the logic of research: staging, self-research and design - innovative	Lc, S, AW
Presentation of scientific work	Formulation of research results. Presentation of research work. Scientific text: characteristic. Types, forms of presentation. Formulation of research results. Dissertation as a specific type of scientific text	Lc, S, AW

5. Technical Support Requirements

Table 5.1. Technical Support Requirements

A type of a classroom	Technical Support Requirements	Special equipment, software
For lectures	An auditorium for lecture-type classes, equipped with a set of specialized furniture; board (screen) and technical means of multimedia presentations	-
For seminars	Audience for conducting seminar-type classes, group and individual consultations, current control and intermediate certification, equipped with a set of specialized furniture and technical means for multimedia presentations	-
For autonomous work	An auditorium for independent work of students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to the EIS	-

6 Study-methodical and information sources:

Main literature:

1. Рузавин Г.И. Методы научного исследования. — М.: Мысль, 1974 - Режим доступа: http://nashaucheba.ru/v16914/ruзавин_г.и._методология_научного_исследования:
2. Зимняя И.А., Шатенкова Е.А. Исследовательская работа как специфический вид человеческой деятельности.- Москва- Ижевск, 2001 - Режим доступа: <https://циабазу.ru/doc/66553.html>:
3. Новиков А.М. Научно-экспериментальная работа в образовательном учреждении. — М.: Ассоциация “Профессиональное образование”, 1996 - Режим доступа: <http://anovikov.ru/books/nauch.pdf>
4. Дрецинский В. А. Методология научных исследований. Учебник для бакалавриата и магистратуры. — М.: Юрайт. 2019. 274 с — Режим доступа: https://mx3.urait.ru/uploads/pdf_review/28782493-AE21-4C9D-9B1C-B4D369C3C0C0.pdf
5. Дрецинский В. А. Основы научных исследований. Учебник для СПО. — М.: Юрайт. 2019. 274 с. — Режим доступа: <https://static.my-shop.ru/product/pdf/338/3377381.pdf>
6. Комлацкий В. И., Логинов С. В., Комлацкий Г. В. Планирование и организация научных исследований. Учебник. — М.: Феникс. 2014. 208 с. — Режим доступа: <https://www.studentlibrary.ru/book/ISBN9785222218402.html>

Additional literature:

1. Сохор А.М. Логическая структура учебного материала. М., 1974 – Режим доступа: <https://vandex.ru/search/?text=Сохор%20А.М.%20Логическая%20структура%20учеб>
2. Аристер Н.И., Загузов Н.И. Процедура подготовки и защиты диссертаций. М.: АОЗТ “ИКАР”, 1995 – Режим доступа: <http://biblioclub.ru/index.php?page=book&id=469595>:
3. Стрельцова, М.В., Поцелуева О.Н.. Как оформить научную работу. — М.: Выстяткола, 1973- Режим доступа: <https://book.org/book/3021321/c03eab>:
4. Кузин Ф.А. Диссертация: Методика написания. Правила оформления. Порядок защиты. Практическое пособие для докторантов, аспирантов и магистрантов. -2-е изд., доп. — М.: Ось-89, 2001 —Режим доступа: http://nashaucheba.ru/v46189/кузин_ф.а._диссертация_методика

написания. правил а одиормления. порядок защиты.

5. П.К.Петров. МЕТОДИКА ПОДГОТОВКИ И ЗАЩИТЫ ВЫПУСКНЫХ КВАЛИФИКАЦИОННЫХ РАБОТ МАГИСТРАНТОВ. М.: ФГБОУ ВО «Удмуртский государственный университет», 2020 - Режим доступа:
<https://eee-science.ru/wp-content/uploads/2021/11/%D0%9F%D0%B5%D1%82%D1%80%D0%BE%D0%B2-2020-%D1%83%D1%87.-%D0%BF%D0%BE%D1%81%D0%BE%D0%B1%D0%B8%D0%B5.pdf>
6. Цыпин Г. М. Работа над диссертацией. Навигатор по "трассе" научного исследования. — М.: Юрайн. 2019. 36 с — Режим доступа:
<https://avidreaders.ru/book/rabota-nad-dissertaciey-navigator-po-trasse.html>

Internet resources:

1. ЭБС РУДИ и сторонние ЭБС, к которым студенты университета имеют доступ на основании заключенных договоров:

- Электронно-библиотечная система РУДИ — ЭБС РУДИ
<http://lib.rudn.ru/МеяаPro/Web>

- ЭБС «Университетская библиотека онлайн» <http://www.biblioclub.ru>

- ЭБС Юрайт <http://www.biblio-online.ru>

- ЭБС «Консультант студента» www.studentlibrary.ru

- ЭБС «Лань» <http://e.lanbook.com/>

-ЭБС «Троицкий мост»

2. Data bases and browsers:

- электронный фонд правовой и нормативно-технической документации
<http://docs.cntd.ru/>

- поисковая система Яндекс <https://www.yandex.ru/>

- поисковая система Google <https://www.yoodle.ru/>

- реферативная база данных SCOPUS
<http://www.elsevierscience.ru/products/scopus/>

7. Assessment system

Materials for assessing the level of mastering the educational material of the discipline (assessment materials), including a list of competencies indicating the stages of their formation, a description of indicators and criteria for assessing competencies at various stages of their formation, a description of assessment scales, standard control tasks or other materials necessary for assessment knowledge, abilities, skills and (or) experience of activity, characterizing the stages of the formation of competencies in the process of mastering the educational program, the methodological materials defining the procedures for assessing knowledge, skills, skills and (or) experience of the activity, characterizing the stages of the formation of competencies, are developed in full and are available for students on the discipline page in the TUIS RUDN University.

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