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

**Institute of Environmental Engineering**

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**INTERNSHIP SYLLABUS**

**RESEARCH WORK (R&D)**

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internship title

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educational

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internship type

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

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05.04.06 "Ecology and Nature Management"

**The student's internship is implemented within the professional education programme  
of higher education:**

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Climate Project Management

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## 1. INTERNSHIP GOAL(s)

The goal of the Internship "Research Work (R&D)" is to gain the competencies ensuring the ability to organize research work individually as well as to gain the undergraduate skills in the practical application of theoretical knowledge obtained during the training period. In addition, the Internship is designed to help students to collect and analyze the materials with their possible subsequent use in a master's thesis.

A master's student carries out research work under the supervisor guidance in the semester. The scientific research work direction of students is determined by the master's thesis topic.

## 2. REQUIREMENTS FOR LEARNING OUTCOMES

Conducting the "Research Work (R&D)" is aimed at developing the following competencies in students:

*Table 2.1. The list of competencies formed in students during internship (learning outcomes based on the results of internship)*

Code and descriptor of generic competence	Code and competence level indicator
<b>GPC-6.</b> Able to design, represent, protect and disseminate the results of the professional activities, including research	<b>GPC-6.3</b> knows methodological foundations of scientific research, copyright and scientific ethics requirements
<b>PC-4</b> Able to conduct environmental analysis of projects for expansion, reconstruction, modernization of existing production facilities, taking into account the requirements of the greenhouse gas management standards	<b>PC-4.2</b> able to develop the climate projects
<b>PC-5</b> Able to develop measures to minimize possible risks of climate change for conducting various types of economic activities	<b>PC-5.1</b> able to identify direct/indirect sources of greenhouse gas emissions at all stages of the product life cycle

## 3. INTERNSHIP IN HIGHER EDUCATION PROGRAMME STRUCTURE

"Research Work (R&D)" refers to the University Disciplines Module of the higher educational programme curriculum.

Within the Education Programme students also master other disciplines (modules) and / or internships that contribute to the achievement of the expected learning outcomes as results of the internship.

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

<b>Competence code</b>	<b>Competence descriptor</b>	<b>Previous courses/modules, internships*</b>	<b>Subsequent courses/modules, internships*</b>
<b>GPC-6</b>	Able to design, represent, protect and disseminate the results of the professional activities, including research	Methodology of Scientific Creation	Climate Neutrality and Waste Management
<b>PC-4</b>	Able to conduct environmental analysis of projects for expansion, reconstruction, modernization of existing production facilities, taking into account the requirements of the greenhouse gas management standards	Carbon Cycles Climate Project Development Climate Change Models Industrial Internship	Pre-graduate Internship
<b>PC-5</b>	Able to develop measures to minimize possible risks of climate change for conducting various types of economic activities	Environmental Engineering and Climate Change Industrial Internship	Pre-graduate Internship

#### 4. INTERNSHIP WORKLOAD

The total workload of the internship is 18 credit units (648 academic hours).

#### 5. INTERNSHIP CONTENTS

*Table 5.1. Internship contents\**

<b>Modules</b>	<b>Contents (topics, types of practical activities)</b>	<b>Workload, academic hours</b>
<b>Module 1. Organizational and preparatory part</b>	Receiving an assignment for an internship from a supervisor, receiving consultations on internships	2
	Instruction on labor protection and fire safety	2
	Research object and methodology choice	10
	Drawing up a work study roadmap	6
<b>Module 2. Main part</b>	Literature review on the research topic using foreign literature	200
	Research organization and conduction, collecting the empirical data and its subsequent interpretation	260
	Preparing a scientific article on research problem	100
	Report presentation on the implemented research at the scientific event (regional or international conference/forum/scientific seminar)	50
Internship Report Development		9
Internship Report Defense		9
<b>TOTAL:</b>		<b>648</b>

#### 6. INTERNSHIP EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

The infrastructure and technical support necessary for the internship implementation include following:

<b>Audience equipment</b>	<b>Specialized educational / laboratory equipment, software and materials for mastering the discipline (if necessary)</b>
An auditorium for lecture-type classes, equipped with a set of specialized furniture; board (screen) and technical means of multimedia presentations.	A set of specialized furniture; chalkboard; hardware: HP PRO system unit, HP-V2072A monitor, LUMIEN retractable projection screen, Internet access. Microsoft Windows 7 corporate. License No. 5190227, date of issue March 16, 2010 MS Office 2007 Prof , License # 6842818, date of issue 09/07/2009
An auditorium 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.	
An auditorium for independent work of students, equipped with a set of specialized furniture and computers with access to the EIOS.	

## **7. INTERNSHIP LOCATION AND TIMELINE**

The internship can be carried out at the structural divisions of RUDN University (at Moscow-based organisations, as well as those located outside Moscow.

The internship at an external organisation (outside RUDN University) is legally arranged on the grounds of an appropriate agreement, which specifies the terms, place and conditions for an internship implementation at the organisation.

The period of the internship, as a rule, corresponds to the period indicated in the training calendar of the higher education programme. However, the period of the internship can be rescheduled upon the agreement with the Department of Educational Policy and the Department for the Organization of Internship and Employment of RUDN students.

## **8. RESOURCES RECOMMENDED FOR INTERNSHIP**

### *Main reading:*

1. Verma R., Verma S., Abhishek K. Research Methodology. – Booksclinic Publishing, 2024. (is available on TUIS)
2. Stehr N., von Storch H. Science in Society: Climate Change and Climate Policies. – World Scientific, 2024. (is available on TUIS)

### *Additional reading:*

1. Kothari C. R. Research methodology: Methods and techniques. – New Age International, 2004. (is available on TUIS)
2. Kapur R. Research methodology: Methods and strategies //Department of Adult Education and Continuing Extension, University of Delhi: New Delhi, India. – 2018. (is available on TUIS)

### *Internet sources*

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

- RUDN Electronic Library System (RUDN ELS) <http://lib.rudn.ru/MegaPro/Web>
- EL "University Library Online" <http://www.biblioclub.ru>
- EL "Yurayt" <http://www.biblio-online.ru>
- EL "Student Consultant" [www.studentlibrary.ru](http://www.studentlibrary.ru)
- EL "Lan" <http://e.lanbook.com/>
- EL "Trinity Bridge"

### *2. Databases and search engines:*

- 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/>
- Scopus abstract database <http://www.elsevierscience.ru/products/scopus/>

*Scientific full-text databases.* The collection of electronic resources UNIBTS (NB) contains:

- universal databases of world famous publishers and suppliers of electronic information for all scientific areas: Cambridge Journals , Oxford Journals , JSTOR , ScienceDirect Freedom \_ Collection , PROQUEST DISSERTATIONS AND THESES GLOBAL, Springer Journals , Taylor & Francis Online, Wiley Online Library, etc.
- specialized databases for specific areas of knowledge: CASC, IEL IEEE, INSPEC, Reaxys / RMC , IOPSCIENCE, MathSciNET, Pathway Studio, Royal Society of Chemistry , Nature , Science online , zbMATH , scientific protocols and scientific materials in physical sciences and engineering Springer Protocols and Springer Materials , Questel patents Orbit , etc.
- full text open access databases rigorously rated by professional experts: ScienceDirect Open, Oxford Open, Palgrave Open, De Gruyter Online Open, Sage Open, Springer Open, Taylor & Francis Online
- archives scientific articles Western Publishers: AGU (Wiley), Annual Reviews, Cambridge University Press, IOP Publishing, Oxford University Press, Nature Publishing Group, Royal Society of Chemistry, SAGE Publications, Taylor and Francis, The American Association for the Advancement of Science
- Mendeley is an international scientific social network that allows you to find like-minded scientists, create scientific associations and study trends in modern research, combine information on the user's personal computer, forming your own collection of full-text scientific papers for distribution and citation, provides an opportunity for communication, facilitates establishing contacts with colleagues who deal with similar topics. Mendeley users are scientists from universities around the world: Stanford, Harvard, Oxford, Michigan, Cambridge, etc.

*Scientometric databases* are recommended to be used when choosing a research topic and for the primary selection of information. Bibliographic and abstract scientometric databases contain tools for tracking the citation of articles published in scientific journals. The citation level of a scientific article is an indicator of relevance, significance and interest

in this topic. The journals presented in the database serve as a guide when choosing publications for their own scientific publications.

*The training toolkit and guidelines for a student to do an internship, keep an internship diary and write an internship report\*:*

1. Safety regulations to do the internship (safety awareness briefing).
2. Machinery and principles of operation of technological production equipment used by students during their internship; process flow charts, regulations, etc. (if necessary).
3. Guidelines for keeping an internship diary and writing an internship report.

## **8. ASSESSMENT TOOLKIT AND GRADING SYSTEM\* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL AS INTERNSHIP RESULTS**

The assessment toolkit and the grading system\* to evaluate the level of competences (competences in part) formation as the internship results are specified in the Appendix to the internship syllabus.

### **DEVELOPER:**

Associate Professor of the ES&PQM Department		<b>Popkova A.V.</b>
Position	Signature	Name, Surname

### **HEAD OF EDUCATIONAL DEPARTMENT:**

Director of ES&PQM Department		<b>Savenkova E.V.</b>
Position	Signature	Name, Surname

### **HEAD OF HIGHER EDUCATION PROGRAMME:**

Director of ES&PQM Department		<b>Savenkova E.V.</b>
Position	Signature	Name, Surname