**Federal State Autonomous Educational Institution
of Higher Education "Peoples' Friendship University of Russia"**

Agrarian and Technological Institute

(name of the main educational unit-developer of the EP HE)

PROGRAM OF PRACTICE

Research practice

(name of practice)

Research practice

(kind of practice)

Recommended by the ISSN for the direction of training/specialty:

35.04.09 Landscape architecture

Management and design of urban green infrastructure

(code and name of the direction of training/specialty)

The practice is carried out within the framework of the implementation of the main professional educational program of higher education:

Landscape architecture

(name (profile/specialization) of the EP HE)

2022

1. THE AIM OF THE PRACTICE

The aim of the «Research practice» is the consolidation of theoretical and practical knowledge gained by students in the study of the discipline "GIS". Study the basic terms, concepts, and definitions in the field of work with GIS software, gain practical skills in the field of spatial assessment of urban and natural ecosystems and their components.

2. REQUIREMENTS FOR THE RESULTS OF THE PRACTICE

The **«Research practice»** is aimed at the formation of the following competencies among students:

Table 2.1. List of competencies formed by students during the practice (results of the development of the practice)

Code	Competency	Indicators of competence achievement (within the framework of this discipline)
PC-18	The ability to prepare scientific and technical reports, reviews, publications based on the results of research in the field of landscape architecture	PC18.1 Student is able to prepare scientific articles, reports on ongoing research PC18.2 Student is able to prepare scientific and technical reports

3. THE PLACE OF THE PRACTICE IN THE STRUCTURE OF THE EP HE

The **«Research practice»** belongs to the part formed by the participants of educational relations.

Within the framework of the practice, students also master other disciplines and/or practices that contribute to achieve the planned results of mastering the **«Research practice»**

Table 3.1. The list of the components of EP HE that contribute to the achievement of the planned results of the development of the practice

Code	Competency	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
PC-18	The ability to prepare scientific and technical reports, reviews, publications based on the results of research in the field of landscape architecture	Internship in research laboratories, enterprise, public administrations and other organizations	Urban ecology, Scientific writing skills, Introduction in scientific research

* - filled in in accordance with the matrix of competencies and SC EP HE

4. SCOPE OF THE PRACTICE

The total labor intensity of the practice **«Research practice»** is 9 ECTS (324 a.h.).

5. CONTENT OF THE PRACTICE

Table 5.1. The content of the practice

Name of the practice section	Content of the section (topics, types of practical activities)	Labor intensity, ac.h.
Section 1. Preparatory stage, familiarization of students with general information about the objects and methods of research, work plan, safety instructions, organizational issues	Class work	**8**
Section 2. Literature survey and review to support the methodological part of the further work	Analytical studies	**50**
Section 3. Selecting the object of study using the software Google Earth.	Analytical studies	**50**
Section 4. Digitization of the object of study using QGIS software	Analytical studies	**50**
Section 5. Selection of raster images for assessment of climatic characteristics and assessment of relief Assessing these characteristics using QGIS software	Analytical studies	**50**
Section 6. Selection of spatial environmental data for the object of study and their evaluation using QGIS tools:	Analytical studies	**50**

working with the vector, basic statistics, field calculator, interpolation		
Section 7. Data processing, analysis and visualization	Class/Field/ Lab work	**48**
Preparation of a practice report		**9**
Preparation for defense and defense of the practice report		**9**
	TOTAL	**324**

* - the content of the practice by sections and types of practical training is FULLY reflected in the student's report on practice.

6. MATERIAL AND TECHNICAL SUPPORT OF THE PRACTICE

Material and technical support of internship will be provided by usage all the necessary field and lab equipment, computer classes, specialized audience and library funds of RUDN and enterprises the internship is based on QGIS, R, MS Office (Word, Excel, Power Point), access to the web-libraries Scopus and Web of Science and other professional software depending on the practical tasks.

7. PRACTICE METHODS

«Research practice» can be carried out both in the structural divisions of RUDN University or in organizations of Moscow (stationary), and at bases located outside of Moscow.

Conducting an internship on the basis of an external organization (outside the RUDN University) is carried out on the basis of an appropriate agreement, which specifies the terms, place and conditions for conducting an internship in the base organization.

The terms of the practice correspond to the period specified in the calendar training schedule of the EP HE. The terms of the practice can be adjusted upon agreement with the Department of Educational Policy and the Department for the organization of internships and employment of students at RUDN University.

8. EDUCATIONAL, METHODOLOGICAL AND INFORMATIONAL SUPPORT OF THE PRACTICE

Basic literature:

1. Working with the ARCINFO Open Development Environment.
2. Vasenev I.I., Meshalkina Yu.L., Grachev D.A. Geoinformation systems in soil science and ecology Interactive course / Ed. I.I. Vaseneva - Moscow: RGAU-MSHA, 2010. 212
3. Geoinformatics. Prince one; by ed. Vs Tikunova. - M .: Publishing Center "Academy", 2008. -384 p.

4.   De Mears M. Geographic information systems. Basics .: Trans. from English - M: Date +, 1999, 384 p.
5.   Zhurkin IG, Shaitura S.V. Geoinformation systems. - M .: Kudits-Press, 2008. – 272p.

Additional literature:

1.   ActiveX Controls and Automation Servers for Windows NT Developers
2.   ARCINFO Data Management. Concepts, data models, database design, and storage.
3. Koldoba A.V., Poveschenko Yu.A., Samarskaya E.A., Tishkin V.F. Methods of mathematical modeling of the environment. - M .: Nauka, 2000.
4. Lurie I.K. Geoinformation mapping: methods of geoinformatics and digital processing of satellite images. - M .: KDU, 2008. - 423 p.
5. Lychak A.I., Beaver T.V. New computer technologies in ecology. - Textbook. - Simferopol: Tavriya Plus, 2004. - 156 p.
6. Trifonova T.A., Mishchenko N.V., Krasnoshchekov A.N. Geoinformation systems and remote sensing in environmental studies. - M .: Akademichesky Project, 2005. - 352 p.

Resources of the Internet information and telecommunication network:

1. RUDN University e-library and other e-libraries, to which university students have access on the basis of concluded agreements:
    – RUDN electronic library system - http://lib.rudn.ru/MegaPro/Web
    – University Library Online http://www.biblioclub.ru
    – Yurite electronic library system http://www.biblio-online.ru
    – Student's Consultant electronic library system www.studentlibrary.ru
    – Lan e-library http://e.lanbook.com/
    – Trinity Bridge e-library

2. Databases and search engines:
    – electronic fund of legal and normative-technical documentation http://docs.cntd.ru/
    – Yandex https://www.yandex.ru/
    – Google https://www.google.ru/
    – NCBI: https://p.360pubmed.com/pubmed/
    – Abstract database SCOPUS http://www.elsevierscience.ru/products/scopus/
    – RUDN Bulletin: access mode from the RUDN territory and remotely http://journals.rudn.ru/
    – Elibrary.ru scientific library: access via RUDN IP-addresses at: http://www.elibrary.ru/defaultx.asp
    – ScienceDirect (ESD), FreedomCollection, Cell Press of Elsevier Publishing House. There is remote access to the database, access via RUDN IP-addresses (or remotely via individual login and password).
    – Google Scholar is a free search engine for full-text scientific publications of all formats and disciplines. Indexes the full texts of scientific publications. Access mode: https://scholar.google.ru/

Educational and methodological materials for the practice, filling out a diary and preparing a report on practice *:

1. Safety rules for the passage of **«Research practice»** (initial briefing).
2. The general arrangement and principle of operation of technological production equipment used by students during their internship; flow charts and regulations, etc. (if necessary).
3. Guidelines for filling in the diary by students and preparing a practice report.

* - all teaching materials for the practice are placed in accordance with the current procedure on the practice page in the **TUIS System**!

8. EVALUATION MATERIALS AND A POINT-RATING SYSTEM FOR ASSESSING THE LEVEL OF COMPETENCE FORMATION IN THE PRACTICE

Evaluation materials and a point-rating system* for assessing the level of competence formation (part of competencies) based on the results of mastering the **«Research practice»»** are presented in the Appendix to this Work Program of the practice

* - EM and PRS are formed on the basis of the requirements of the relevant local regulatory act of the RUDN.

DEVELOPERS:

Associate Professor of the Department of Landscape Design and Sustainable Ecosystems		V.I. Vasenev
Position, BTU	Signature	Name

HEAD OF THE DEPARTMENT

Director of the Department of Landscape Design and Sustainable Ecosystems		E.A. Dovletyarova
Position, BTU	Signature	Name

HEAD OF THE EDUCATIONAL PROGRAM

Associate Professor of the Department of Landscape Design and Sustainable Ecosystems		V.I. Vasenev
Position, BTU	Signature	Name