Federal State Autonomous Educational Institution of Higher Education
PEOPLES' FRIENDSHIP UNIVERSITY OF RUSSIA
NAMED AFTER PATRICE LUMUMBA

Agrarian and Technological Institute
educational division (faculty/institute/academy) as higher education programme developer

INTERNSHIP SYLLABUS

Research practice
internship title

Research practice
internship type

Recommended by the Didactic Council for the Education Field of:

35.03.09 Landscape architecture
Management and design of urban green infrastructure
field of studies / speciality code and title

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

Landscape architecture
higher education programme profile/specialisation title

1. RESEARCH PRACTICE GOAL(s)

The Research practice aims at the consolidation of theoretical and practical knowledge gained by students received in the first year of study. 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 LEARNING OUTCOMES

The **«Research practice»** implementation is aimed at the development of the following competences (competences in part):

Table 2.1. List of competences that students acquire during the internship

Competence code	**Competence descriptor**	**Competence formation indicators** (within this course)
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 RESEARCH PRACTICE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The Research practice refers to the core component of (B2) block of the higher educational programme curriculum.

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.

Competence code	**Competence descriptor**	**Previous courses/modules, internships***	**Subsequent courses/modules, internships***
PC-18	The ability to prepare scientific andtechnical reports, reviews, publicationsbased on the results of research in the field of landscape architecture	-	Urban ecology Scientific writing skills Itroduction in scientific research

4 THE RESEARCH PRACTICE WORKLOAD

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

5. THE RESEARCH PRACTICE CONTENTS

Table 5.1. The content of the practice

Modules	**Contents (topics, types of practical activities)**	**Workloa d, academi c hours**
Module 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**
Module 1**.** Literature survey and review to support the methodological part of the further work	Analytical studies	**50**
Module 1**.** Selecting the object of study using the software Google Earth.	Analytical studies	**50**
Module 1**.** Digitization of the object of study using QGIS software	Analytical studies	**50**
Module 1**.** Selection of raster images for assessment of climatic characteristics and assessment of relief Assessing these characteristics using QGIS software	Analytical studies	**50**
Module 1**.** 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		
Module 1**.** 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. THE RESEARCH PRACTICE EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Material and technical support of internship will be provided by usage all the necessary fieldand 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. THE RESEARCH PRACTICE LOCATION AND TIMELINE

«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. RESOURCES RECOMMENDED FOR INTERNSHIP

Main readings:

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 readings:

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.

Internet sources:

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://eJanbook.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. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL AS INTERNSHIP RESULTS

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

* 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:

Associate Professor, department of landscape planning and sustainable ecosystems		**V. I. Vasenev**
position, educational department	signature	name and surname.

HEAD OF EDUCATIONAL DEPARTMENT:

Director, department of landscape planning and sustainable ecosystems		**E. A. Dovletyarova**
educational department	signature	name and surname.

HEAD OF HIGHER EDUCATION PROGRAMME:

Associate Professor, department of landscape planning and sustainable ecosystems		**V. I. Vasenev**
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