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

Agrarian Technological Institute

Recommended ISSC

PRACTICE PROGRAM

Practice subject:
Scientific research and thesis preparation
Рекомендуется для направления подготовки/специальности: 35.04.09 Landscape architecture

Recommended for the direction of training / specialty:
35.04.09 Landscape architecture

Program orientation (profile):
Management and design of urban green infrastructure

Graduate Qualifications: Master

(in accordance with the order of the Ministry of Education and Science of the Russian Federation of 12.09.2013 №1061)

The type of practice of students mastering the main professional educational program of higher education in the direction of training 35.04.09 "Landscape Architecture" is a research work.

Type of practice: - research work.

Method of practice: stationary, visiting.

Research work can be carried out in third-party organizations or at the Department of Landscape Architecture, as well as in the laboratories of the Engineering and Construction Institute, given the presence in the latter of the necessary personnel and scientific and technical potential in accordance with the requirements of the Federal State Educational Standards of Higher Education in the direction of training 35.04.09 ".

The choice of places of practice for people with disabilities is made taking into account the state of health of students and accessibility requirements.

1. **The goal** prepare the student for independent research work, the result of which is writing and successful defense of the final qualifying work, securing existing and acquiring new knowledge and skills that form the competences provided of VO PFUR / GEF VO.
2. **The research tasks are:**
   the acquisition of practical experience in the study of relevant scientific problems mastering the techniques and methods of conducting research;
   - the formation of students' interest in scientific creativity, teaching methods and methods for self-solving research problems, work skills in research teams;
   - the ability to conduct bibliographic work with the involvement of modern information technologies in the selection of materials for the performance of final qualifying work;
   - the ability to formulate and solve problems arising in the course of research work and to choose the necessary research methods, based on the tasks of a specific study;
   - mastering research methods, conducting experimental work, methods of analyzing and processing the results obtained, and presenting them in the form of completed research and development;
   - confirmation of the relevance and practical significance of the chosen research topic;
   -preparation of the article, report (report thesis) based on the results of research work and gaining experience in other ways of testing the results obtained (organization of scientific-practical seminars, round tables, in the formation of applications and participation in competitions, competitions at various levels).

According to the results of the research work the student should:

Know:

- essence and methodology of abstract thinking, analysis, synthesis;
- basic concepts and methodology of fundamental and applied disciplines;
- structure and dynamics of scientific and practical knowledge; the basis for the development of one's own intellectual level through the acquisition of new knowledge and skills, including in new areas of knowledge not directly related to professional activities;
- bases of activity of the research team and ways of generating new ideas;
- concepts of the method and methodology of scientific research, analysis, synthesis, methodical foundations of the development of programs and plans, and conducting scientific research and experiments, tests.

Be able to:

- apply the processes of abstract thinking, set goals and form professional tasks based on the methodology of scientific knowledge;
- apply concepts and methodologies of knowledge that are at the forefront of professional activities;
- independently obtain the necessary information with the help of information technologies from any available sources;
- apply skills in the scientific team; apply modern research methods and theoretical foundations of the organization of experiments, tests in professional activities;
- apply skills in the synthesis and analysis of the results.

Own:

- the ability of logical conclusions drawing based on analysis and synthesis;
- scientific methodology for assessing and resolving problems in professional activities, and skills in the use of theoretical and practical knowledge;
- ways of generating new knowledge and skills with the help of information technologies, and deepening the scientific worldview;
- skills of generating new ideas in professional activity and applying modern methods of research and critical summarizing of information;
-ways of developing research plans and programs and preparing a task for performers.

3. Place of the discipline in the educational program.

According to the basic professional educational program and the curriculum for the preparation of bachelors in the direction of "Landscape Architecture", R & D refers to Block 2 B 2. B 3: (practices, including research work).

The practice has 3 credits in the first seven and 2 credits in the second semester.

The research work is based on the knowledge and skills obtained as a result of studying the disciplines of the basic part of the basic professional educational

program of higher education in the direction of training 35.04.09 "Landscape Architecture" (master's level).

R & D is required for successful development of subsequent disciplines such as: history of landscape gardening art, urban ecology and monitoring, theory of landscape architecture and design methodology, landscape design, construction and maintenance of aircraft objects, tree growing, basics of forest park management, basics of forest science.

4. The format of the Scientific research and thesis preparation– field, lab and in-class

5. Practice duration and venue.

The Scientific research and thesis preparation duration is one week. The research work takes place on the basis of the laboratory «Smart technologies for sustainable urban development under global changes» and Center of modelling and projecting of sustainable ecosystems of Agrarian-technological institute, RUDN University, other laboratories or enterprises working in the sphere of environmental analysis, landscape design, urban planning and sustainable development

6. Competencies formed in result of the internship:

- the ability to assess the effectiveness of the use of materials, equipment, technological processes on the objects of landscape architecture (PC-2);
- the ability to assess the impact of measures for the rational use and management of landscapes regarding improving the quality and safety of the human environment (PC-3);
- the ability to implement measures for the external improvement and greening of the territories to create favorable sanitary and hygienic conditions, increase the level of human comfort in the urban environment, its overall aesthetic enrichment (PC-4);
- ability to develop and implement a system of measures for the plant protection to ensure the right of every citizen to a favorable environment (PC-5);
- readiness to organize of urban environmental monitoring and inventory on the objects of landscape architecture, the compilation of the inventory of green space (PC-6);
- the ability to develop scientifically-based technologies for growing planting material: ornamental trees and shrubs, flower crops, lawns, and to carry out the economic efficiency back and innovative technological risks in the management of new technologies (PC-7);
- readiness to participate in the project activities of organizations, to work in a team of specialists related to the sustainable development of territories at the stage of territorial planning and preparation of master plans for settlements and urban agglomerations (PC-22);

- the ability to carry out technical calculations for projects, a feasibility study and functional cost analysis of the effectiveness of projected measures, prediction of consequences, finding compromise solutions in planning and implementing projects (PC-23);

7. Structure

Research work 1 semester makes 3 hours (108 ECTS)

№	Sections (stages) of practice	Kinds of educational work in practice, including independent work of students and labor input (hours)	Forms of current control
1	Preparatory stage, familiarization of students with general information about the objects and methods of research, work plan, safety instructions, organizational issues	Class work (7 hours)	Report
2	Literature survey and review to support the methodological part of the further work	Field/ Lab work (42 hours)	Report, practice diary
3	Data collection in field (lab) conditions following the methodology	Field/ Lab work (42 hours)	Report, practice diary
4	Preparation and defense of the research work report	Class work, preparation of the report and report defense (17 hours)	Report

Research work 2 semester makes 2 hours (72 ECTS)

№	Sections (stages) of practice	Kinds of educational work in practice, including independent work of students and labor input (hours)	Forms of current control
1	Preparatory stage, familiarization of students with general information about the objects and methods of research, work plan, safety instructions, organizational issues	Class work (7 hours)	Report
2	Data processing, analysis and visualization	Field/ Lab work (49 hours)	Report
3	Preparation and defense of the research work report	Class work, preparation of the report and report defense (16 hours)	Report

8. **Educational and research technologies used for the internship:** 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

9. Software: 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.

10. Teaching and methodological support of students' independent work in educational practice.

The program of educational practice, developed by the Department of Landscape Design and Sustainable Ecosystems of the Agrarian-Technological Institute of the RUDN University, methodical recommendations on the organization and conducting practices for graduate students of the Landscape Architecture direction, Teodoronsky VS, Fatiyev MM Construction and operation of urban landscaping // study guide. Publishing house: M. Forum.-2011. 237s

11. Educational and methodical and informational support of research practice

a) Basic literature**:**

1) Vasenev V.I., Epikhina A.S. Urban ecology. RUDN University. 2017

2) Alberti M. Advances in Urban Ecology: Integrating Humans and Ecological Processes in Urban Ecosystems Springer; 2008 366 p.

3) R.T.T. Forman. Urban Ecology: Science of Cities Cambridge University Press 2014. 474 p.

4) J. Niemela,J. H. Breuste, G.Guntenspergen. Urban Ecology: Patterns, Processes, and Applications. Oxford University Press; Reprint edition. 2012. 392 p.

5) Denisov V.V.., Kurbatova A.S., Denisova I.A.., Bondarenko V.L., Gracheva V.A., Gutenev V.V., Nagnibeda B.A. «Ecology of a city». M.: Rostov on Don: 2008-832 p.(in Russia).

b) Supplementary literature:

1. Dolgikh, A.V., Aleksandrovskii, A.L., 2010. Soils and cultural layers in velikii Novgorod. Eurasian Soil Science, 43, 477–48.

2. Ilina, I.N. (Eds.), 2000. Environmental atlas of the Moscow city. ABF. Moscow (in Russian)

3. Kaye, J.P., McCulley, R.L., Burkez, I.C., 2005. Carbon fluxes, nitrogen cycling, and soil microbial communities in adjacent urban, native and agricultural ecosystems. Global Change Biology 11, 575-587.

4. Lorenz, K., Lal, R., 2009. Biogeochemical C and N cycles in urban soils. Environment International 35, 1–8.

5. Pickett, S.T.A., Cadenasso, M.L., Grove, J.M., Boone, C.G., Groffman, P.M., Irwin, E., Kaushal, S.S., Marshall, V., McGrath, B.P., Nilon, C.H., Pouyat, R.V., Szlavecz, K., Troy, A., Warren, P., 2011. Urban ecological systems: scientific foundations and a decade of progress. Journal of Environmental Management 92, 331–362

6. Scalenghe, R., Marsan, F.A. The anthropogenic sealing of soil in urban areas, 2009. Landscape and urban planning 90, 1-10. .

7. Vrscaj, B., Poggio, L., Marsan, F., 2008. A method for soil environmental quality evaluation for management and planning in urban areas. Landscape and Urban Planning 88, 81-94

c) Software and web-resources:

http://www.mvarchicad.comhttp://artlantis.ru/ http://www.autodesk.ru. http://www.adobe.com. **http ://**www.archibase.net. http://www.artshare.ru. http://archicad.ru/. http://www.archicad-edu.info. http://www.archi-tec.ru/. http://www.arhitekto.ru/. http://arkhitektura.ru/. http://www.archibase.net. htt**p://**www.gardener.ru/. http://www,landshaft.ru/

12. Forms of intermediate certification (practice results)

Certification of the internship is carried out in the form of a differentiated test based on the practice diary, the student's report on the internship and the implementation of the practice plan.

13. Evaluation criteria for the intermediate certification of students in internship

Certification of educational practice is carried out for students in the credit-modular system according to the ECTS grading system.

Educational practice is given 3 ECTS.

In accordance with the ECTS system, a student can get 100 points maximum for the practice.

The evaluation criteria are the following:

Points	Russian marks	ESTC Marks
95-100	5	A
86-94		B

69-85	4	C
61-68	3	D
51-60		E
31-50	2	Fx
0-30		F
51-100	Test	Passed

- Diary preparation - 20 points;
- Literature review - 20 points;
- Report content - 20 points;
- Report formatting - 10 points;
- Report presentation - 20 points;
- Report defense - 10 points;

Attestation of a student on educational practice is conducted by a commission of four teachers, chaired by the head of the department. The protection of the practice report is in the short report (5-10 minutes) of the student and in the answers to the questions on the substance of the report.

According to the results of protection of the report, the student is given an assessment of educational practice. In evaluating the report, the content and correctness of the student's diary on educational practice, the report on educational practice, the characteristics of the practice managers from the organization and the department, the quality of answers to questions during the report protection are taken into account.

A student who has not completed the practice program for a disrespectful reason, has received a negative feedback from the supervisor on the work or has an unsatisfactory rating in defending the report, by agreement with the graduating department, may be sent to the practice again during his free time or presented to the dismissal as having academic debt in the order stipulated by the University Charter. Students-trainees who violate the rules of internal order, leaders of enterprises, institutions and organizations may be subject to penalties, which is informed by the leadership of the University. The rector decides on the possibility of further student stay at the University. A student who has not completed the practice for a good reason, passes it in her free time. In some cases, the practice can be organized on the basis of the laboratories of the graduating department.

The results of the students' practice are discussed at the meeting of the graduating

department.

The program is compiled in accordance with the requirements of OS VO RUDNF / FROS VO.

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