

Федеральное государственное автономное образовательное учреждение высшего образования «Российский университет дружбы народов»  
Экологический факультет

Принято Ученым советом  
экологического факультета  
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Утверждаю  
Проректор по учебной работе  
А.П.Ефремов

2020 г.

**Основная профессиональная образовательная программа  
высшего образования**

Направление подготовки (специальность):

**05.04.06 Экология и природопользование**

в соответствии с перечнем, утвержденным приказом Минобрнауки России от 12.09.2013 г. № 1061.

Программа разработана в соответствии с требованиями ОС ВО РУДН, утвержденного приказом ректора от 05.03.2020 г. № 133

Квалификация выпускника магистр

Направленность программы (профиль, специализация):

**Экономика управления природными ресурсами**

Нормативный срок освоения программы 2 года

Форма обучения - очная

Руководитель программы:  
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2020 г.

## **Description of the educational program**

### **General characteristics of the educational programs of higher education (EP HE)**

#### ***1.1. The purpose (mission).***

The objective of EP HE is to train highly sought after in the labor market professionals with an active lifestyle, broad erudition, high level of theoretical training, practice-oriented skills and knowledge of environmental problems and solutions in the field of wildlife management objectives. EP HE develops students' responsible attitude to take decisions in their professional activities, upholding environmental interests. Education the program is aimed at the formation of general cultural (universal), of general and professional competencies in accordance with the requirements of the EP HE PFUR towards training 05.04.06 – ecology and environmental management.

#### ***1.2. Basic information.***

*Education Level* - Graduate (Master's degree).

*Form of implementation* - full-time training.

*Orientation* - Ecology and Nature Management.

Type of professional activity, to which graduates are prepared: research, design and production, control and audit, organizational-administrative, pedagogical.

Masters in direction "Ecology and Environmental Management" prepared to work with the natural, man-made, natural and economic, ecological and economic, industrial, social, territorial public systems and structures at the global, national, regional and local levels. Masters may exercise state planning, control, monitoring, organize and examine the environmental components of all forms of economic activity, to develop and implement programs for sustainable development at all levels. In addition, they can work in the field of education, education, health savings and demographics.

For information about the features of the implementation of the basic educational program. The program is implemented with the use of modern educational technologies to the fullest involvement of modern software tools used in the practice of management of natural resources and environmental management. Particular attention is paid to cooperation with potential employers. The contents of EP HE harmonized with the demands of the labor market. In the development of teaching materials disciplines used foreign experience, including experience of environmental management and environmental management in the countries of reception. Specificity EP HE due to the peculiarities of the educational standard of People's Friendship University.

*Subject Field* - applied ecology and environmental protection.

*Place of realization* - ecological department of People's Friendship University.

#### ***1.3. Features of the educational programs of higher education.***

*Use of the network form of realization of the basic educational program.* The possibility of training in the direction of "Ecology and Environmental Management" in the master's environmental faculty implemented a network where forms of training (in the framework of SCO, BRICS, in the form of joint programs with leading universities of the member states of the SCO and BRICS).

*The use of e-learning.* The program is widely used e-learning. Organized access to electronic textbooks and scientific literature. Over 90% of the courses involve extensive use multimediatehcnology. Not less than 20% of the course involves the use of specialized software, used to meet in the practical activity of employers.

*The use of distance learning technologies.* Distant technologies are applied in independent work of students in the consideration of additional issues (in-depth study of course), in the framework of extracurricular activities.

*The use of the modular principle of presenting the content of the basic educational program and the construction of curricula.* In the current curriculum does not include disciplines studied in module format. The use of the modular principle possible in the formation of disciplines and constructing educational course (for example, in the study of large blocks of subjects studied by a variety of educational technologies: case studies, trainers, problem solving using specialized software).

*Implementation of the program in a foreign language.* The program includes subjects taught in a foreign language.

#### ***1.4. labor market demand for graduates of the educational program of higher education.***

*For information about potential employers - consumers of graduates of the educational program:*

- design, development, research, production, marketing, consulting, economic, legal, educational and expert divisions, departments, bureaus, centers, firms, companies, institutions;

- The federal and regional nature conservation and environmental authorities (Ministry of Natural Resources and other environmental authorities and institutions);

- The federal and regional agencies of the Ministry of Regional Development, the Ministry of Emergency Situations, Ministry of Economic Development and Trade of the Russian Federation, Federal Agency for Construction and Housing and Communal Services, Ministry of Health and Social Development, Ministry of Culture and Mass Communications of the Russian Federation, Ministry of Education and science, the Ministry of agriculture of the Russian Federation and their subordinate federal services and agencies, as well as the Federal service for Hydrometeorology and Environmental monitoring, the Federal Atomic energy agency, the Federal agency for Tourism, the Federal service of the Russian security and other departments and agencies;

- the authority and control of the RF subjects and municipalities; academic and institutional research organizations; educational organizations of secondary, secondary vocational and higher education, and public awareness; media and communication; social organizations and foundations; representation of foreign companies.

*Focusing on the labor market.* The educational program of higher education is focused on the labor market in the manufacturing sector, housing and communal services (the position of environmentalists, labor protection specialists, industrial and environmental safety), research, consulting, and project organizations, governing bodies. Activities in the field of ecology and nature management organizations in great demand in all regions of the country, in all sectors of the economy. The development of the labor market due to the interest of the manufacturing sector in the improvement of the environmental performance of production, popularizing the ideas of the green economy, sustainable development and compliance with environmental ethics.

#### ***1.5. Eligibility Requirements.***

By learning the master's program allowed a person with higher education. For admission to the Master's program, the candidate should provide proof of completion of the training program or an undergraduate specialties, pass an entrance exam.

*Audition is not provided.*

#### ***1.6. Characteristics of professional activities OP graduate.***

1.6.1. The area of professional activity:

- design, development, research, production, marketing, consulting, economic, legal, educational and expert divisions, departments, bureaus, centers, firms, companies, institutions;

- The federal and regional nature conservation and environmental authorities (Ministry of Natural Resources and other environmental authorities and institutions);

- The federal and regional agencies of the Ministry of Regional Development, the

Ministry of Emergency Situations, Ministry of Economic Development and Trade of the Russian Federation, Federal Agency for Construction and Housing and Communal Services, Ministry of Health and Social Development, Ministry of Culture and Mass Communications of the Russian Federation, Ministry of Education and science, the Ministry of agriculture of the Russian Federation and their subordinate federal services and agencies, as well as the Federal service for Hydrometeorology and Environmental monitoring, the Federal Atomic energy agency, the Federal agency for Tourism, the Federal service of the Russian security and other departments and agencies;

- the authority and control of the RF subjects and municipalities; academic and institutional research organizations; educational organizations of secondary, secondary vocational and higher education, and public awareness; media and communication; social organizations and foundations; representation of foreign companies.

*Specifics of professional activity of graduates due to their training.* This activity on the organization of learning and ensuring the rational use of natural resources, protection of wildlife, landscapes, environmental maintenance of economic activity in production and non-production sphere, education and training in sustainable development activities in the field of collection, analysis and dissemination of environmentally relevant information.

1.6.2. The objects of professional master's degrees in direction "Ecology and Environmental Management" are: natural, man-made, natural and economic, ecological and economic, industrial, social, territorial public systems and structures at the global, national, regional and local levels; government planning, control, monitoring, examination of the environmental components of all forms of economic activity; environmental programs and programs for sustainable development; education, education, saving the health of the population, demographics.

1.6.3. Professional activities:

- research and development activities;
- design and production activities;
- control and expert activities;
- organizational and management activities;
- teaching activities.

1.6.4. Objectives of professional activity.

Master of the direction of preparation 05.04.06 "Ecology and Environmental Management" prepared to address the following professional tasks in accordance with the professional activities:

*Research activities:*

- Identification of problems, objectives and methods of scientific research; new information on the basis of observations, experiments, scientific analysis of empirical data;
- abstracting of scientific papers, preparation of analytical reviews of data accumulated in the world of science and production activities;
- generalization of the results obtained in the context of previously accumulated knowledge in science;
- formulation of conclusions and practical recommendations based on representative and original research results;
- Conduct comprehensive research branch, regional, national and global environmental problems, the development of recommendations for their resolution;
- condition assessment, sustainability and forecast of natural systems; assessment of the state of health of the population and the region's key demographic trends on available statistical reporting data;

*Design and production activities:*

- designing standard of environmental protection measures; impact assessment of the planned construction or other forms of economic activity on the environment; implementation of environmental monitoring;

- Analysis of private and common problems of natural conditions and resources, environmental management;
- detection and diagnosis of the problems of nature conservation, the development of practical recommendations for the conservation of the natural environment; Waste management;

*Auditing activities:*

- environmental impact assessment of various types of project tasks; development of practical recommendations for the conservation of the natural environment; Auditing activities, environmental audits; organizational and managerial activities: management of department activities, sector working groups; determination of the procedure to achieve their goals and detailing tasks; distribution of tasks and monitoring of timely and quality performance;

- identifying the shortcomings in the implementation of the work and to take timely measures to eliminate them;

- maintaining work discipline and recruitment within a specific competence;
- preparation of final documents on the results of the production or research assignment;
- Development of environmental management systems, environmental enterprises and industries;

*Educational activity:*

- pedagogical work in educational institutions;
- educational and methodical planning activities of environmental education and education for sustainable development;

- teachers' consultations on the content of environmental education.

***1.7. Requirements for the results of the development of the educational programs of higher education.***

As a result of the development of the master's program at the graduate will be formed general cultural, professional and general professional competence.

*The general cultural competence (GC):*

- The ability to abstract thinking, analysis, synthesis (GC-1);
- Willingness to act in unusual situations, bear social and ethical responsibility for decisions (GC-2);
- Willingness to self-development, self-realization, the use of creative potential (GC-3).

*The General professional competences (GP):*

- Possession of knowledge of the philosophical concepts of natural science and the basics of the methodology of scientific knowledge in the study of various levels of organization of matter, space and time (GP-1);

- The ability to use modern computer technology in the collection, storage, processing, analysis and transmission of environmental and geographic information and solutions for research and development and production and technological tasks of professional activity (GP-2);

- The ability to actively communicate in scientific, industrial, social and public spheres; the ability to freely use Russian and foreign languages as a means of business communication; the ability of an active social mobility (GP-3);

- Confluence of methods of assessing the representativeness of the material, the volume of the sample during the quantitative research, statistical methods, comparison of the data and determine the laws (GP-4);

- The ability to use-depth knowledge of the legal and ethical standards in the assessment of the consequences of their professional activities, the design and implementation of social projects; to practice the skills in the organization of scientific research and research and production activities in the management of scientific staff (GP-5);

- Willingness for independent scientific research work and the work of the scientific team, the ability to generate new ideas (creativity) (GP-6);

- Willing to lead the team in their professional activities, tolerant perceiving social,

ethnic, religious and cultural differences (GP-7).

*The Professional competence (PC):*

*Research activity:*

- The ability to formulate problems, objectives and methods of scientific research; obtain new reliable facts based on observations, experiments, scientific analysis of empirical data; abstracted research papers, prepare analytical reviews of data accumulated in the world of science and production activities; to generalize the results obtained in the context of previously accumulated knowledge in science; formulate conclusions and practical recommendations based on representative and original research results (PC-1);

- The ability to creatively use in scientific and industrial-technological activity the knowledge of fundamental and applied sections special graduate program disciplines (PC-2);

- Knowledge of the basics of design, expert-analytical activities and perform research using modern approaches and methods, apparatus, and computer systems (PC-3);

- The ability to use modern methods of processing and interpretation of environmental information for scientific and industrial research (PC-4);

*Design and production activities:*

- The ability to develop standard environmental protection measures; assess the impact of the planned construction or other forms of economic activity on the environment and human health (PC-5);

- The ability to diagnose problems of environmental protection, to develop practical recommendations for its conservation and sustainable development (PC-6);

- The ability to use the normative documents regulating the organization of production and environmental technology works; methodically competently to develop an action plan for environmental auditing, monitoring compliance with environmental requirements, environmental management of production processes (PC-7);

*Control and expert activities:*

- The ability to carry out environmental impact assessment of various types of project tasks, to carry out an environmental audit of an object and develop recommendations for the conservation of the natural environment (PC-8);

*Organizational and managerial activities:*

- The ability to carry out the organization and management of research and scientific production and expert-analytical work with in-depth knowledge in the field of environmental management (PC-9);

*Pedagogical activities:*

- Possession of theoretical knowledge and practical skills for teaching in educational institutions; the ability to competently carry out educational and methodical planning activities of environmental education and education for sustainable development to meet modern environmental and natural resource problems (PC-10).

### 1.8. Competence Matrix.

#### Requirements for the results of the development of educational programs (M.Sc.)

Educational program: Applied Ecology (Master's Degree Program)

Type of professional activity: Practice-oriented activity

	The name disciplines (modules) in accordance with the curriculum	The general cultural competence		
		Competences code		
		GC-1	GC-2	GC-3
<b>Block 1</b>	<b>Base part</b>			
M.1.B.1	Foreign (Russian) language			
M.1.B.2	Philosophical problems of nature sciences	X		
M.1.B.3	IT in ecology and natural resources management			
M.1.B.4	Mapping and GIS-technologies			
M.1.B.5	Radioecology			
M.1.B.6	Fundamentals of ecological biotechnology			
	<b>Variable part</b>			
M.2.B.1	Modern problems of Ecology			X
M.2.B.2	Sustainable development			
M.2.B.3	Ecological psychology		X	
M.2.B.4	Monitoring of environmental pollution			
M.2.B.5	Modern technologies for nature protection			
M.2.B.6	Investigation techniques of environmental pollution			
M.2.B.7	Standards of environmental quality management and occupational safety			
M.2.B.8	Landscape planning			
	<b>Elective courses</b>			
M.2.B.9	Management of ecological projects			
	International cooperation in the field of nature protection			
M.2.B.10	Methods and tools for forensic ecological examination			
	Computer methods of environment quality assurance			
M.2.B.11	Ecological Metrology			
	Biological methods of environmental control (biotesting, bioindication)			
M.2.B.12	Wastes: Landfills, Processing and Recycling			
	Industrial safety			

	The name disciplines (modules) in accordance with the curriculum	The general cultural competence		
		Competences code		
		GC-1	GC-2	GC-3
<b>Block 2</b>	<b>Practice, including research work (SRW)</b>			
	Research practice			X
	Research work			X
<b>Block 3</b>	<b>Final state attestation</b>			
	Final state exam			
	Master thesis			
	Protection of master's thesis			

*Note:*

GC-1 – The ability to abstract thinking, analysis, synthesis;

GC-2 – Willingness to act in unusual situations, bear social and ethical responsibility for decisions;

GC-3 – Willingness to self-development, self-realization, the use of creative potential.

	The name disciplines (modules) in accordance with the curriculum	General professional competences						
		Competences code						
		GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7
<b>Block 1</b>	<b>Base part</b>							
M.1.B.1	Foreign (Russian) language			X				X
M.1.B.2	Philosophical problems of nature sciences	X						
M.1.B.3	IT in ecology and natural resources management		X		X			
M.1.B.4	Mapping and GIS-technologies		X					
M.1.B.5	Radioecology							
M.1.B.6	Fundamentals of ecological biotechnology		X					
	<b>Variable part</b>							
M.2.B.1	Modern problems of Ecology			X				
M.2.B.2	Sustainable development						X	
M.2.B.3	Ecological psychology							X
M.2.B.4	Monitoring of environmental pollution							
M.2.B.5	Modern technologies for nature protection		X					
M.2.B.6	Investigation techniques of environmental pollution							
M.2.B.7	Standards of environmental quality management and occupational safety					X		



	The name disciplines (modules) in accordance with the curriculum	General professional competences						
		Competences code						
		GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7
M.2.B.8	Landscape planning					X	X	
	<b>Elective courses</b>							
M.2.B.9	Management of ecological projects					X		
	International cooperation in the field of nature protection			X				X
M.2.B.10	Methods and tools for forensic ecological examination							
	Computer methods of environment quality assurance		X		X			
M.2.B.11	Ecological Metrology				X			
	Biological methods of environmental control (biotesting, bioindication)							
M.2.B.12	Wastes: Landfills, Processing and Recycling		X					
	Industrial safety							
<b>Block 2</b>	<b>Practice, including research work (SRW)</b>							
	Research practice						X	
	Research work	X					X	
<b>Block 3</b>	<b>Final state attestation</b>							
	Final state exam							
	Master thesis							
	Protection of master's thesis							

*Note:*

GP-1 – possession of knowledge of the philosophical concepts of natural science and the basics of the methodology of scientific knowledge in the study of various levels of organization of matter, space and time;

GP-2 – the ability to use modern computer technology in the collection, storage, processing, analysis and transmission of environmental and geographic information and solutions for research and development and production and technological tasks of professional activity;

GP-3 – the ability to actively communicate in scientific, industrial, social and public spheres; the ability to freely use Russian and foreign languages as a means of business communication; the ability of an active social mobility;

GP-4 – Confluence of methods of assessing the representativeness of the material, the volume of the sample during the quantitative research, statistical methods, comparison of the data and determine the laws;

GP-5 – the ability to use-depth knowledge of the legal and ethical standards in the assessment of the consequences of their professional activities, the design and implementation of social projects; to practice the skills in the organization of scientific research and research and production activities in the management of scientific staff;

GP-6 – willingness for independent scientific research work and the work of the scientific team, the ability to generate new ideas (creativity);

GP-7 – willing to lead the team in their professional activities, tolerant perceiving social, ethnic, religious and cultural differences.



*Note:*

PC-1 - the ability to formulate problems, objectives and methods of scientific research; obtain new reliable facts based on observations, experiments, scientific analysis of empirical data; abstracted research papers, prepare analytical reviews of data accumulated in the world of science and production activities; to generalize the results obtained in the context of previously accumulated knowledge in science; formulate conclusions and practical recommendations based on representative and original research results;

PC-2 - the ability to creatively use in scientific and industrial-technological activity the knowledge of fundamental and applied sections of special disciplines graduate programs;

PC-3 - know the basics of design, expert-analytical activities and perform research using modern approaches and methods, apparatus, and computer systems;

PC-4 - the ability to use modern methods of processing and interpretation of environmental information for scientific and industrial research;

PC-5 - the ability to develop standard environmental protection measures; assess the impact of the planned construction or other forms of economic activity on the environment and human health;

PC-6 - the ability to diagnose the problems of environmental protection, to develop practical recommendations for its conservation and sustainable development;

PC-7 - the ability to use the normative documents regulating the organization of production and environmental technology works; methodically competently to develop an action plan for environmental auditing, monitoring compliance with environmental requirements, environmental management of production processes;

PC-8 - the ability to carry out environmental impact assessment of various types of project tasks, to carry out an environmental audit of an object and develop recommendations for the conservation of the natural environment;

PC-9 - the ability to carry out the organization and management of research and scientific production and expert-analytical work with in-depth knowledge in the field of environmental management;

PC-10 - possess the theoretical knowledge and practical skills for teaching in educational institutions; ability to competently carry out educational and methodical planning activities of environmental education and education for sustainable development based on modern problems of ecology and nature.