

Master Profile program “Management and evaluation of Land resources” (Soil science)

Degree	Master of Science
Date of introduction	01.09.2014
Web site of the education program	www.sfedu.ru
Special field of science	Medicine and health science Economic, legal and social science Mathematics and natural science Informatics Engineering
Number of ECTS and duration of studies	4 semesters 120 credits
Начало обучения	Fall semester
Frequency	Annual uptake
Contact person	Minkina Tatyana, Doctor of Biology., Professor, Department of Soil Science and Land Evaluation of the Faculty of Biological Sciences, Southern Federal University, Rostov-on-Don, Russia, e-mail: tminkina@mail.ru , тел: 8-918-5531632 Olga Biryukova, Doctor of Science in Agriculture, professor Department of Soil Science and Land Evaluation of the Faculty of Biological Sciences, Southern Federal University, Rostov-on-Don, Russia, e-mail: Olga_alexan@mail.ru , tel.: 89043418622
Number of places	10
Tuition fee	90 000 roubles
Target group	Graduates of high schools from Southern Federal District, the North-Caucasian Federal District, Russia as a whole and international students.
Form of studies	Full time
Prerequisites for admission	Applicants must have a Bachelor Diploma, a master Diploma in the relevant field.

Objectives

The master program is aimed at training specialists who will be able to observe, evaluate and predict changes in soil and soil cover, provide evaluation of land resources and organize a rational land tenure.

The object of graduates professional activities are:

the soil cover of the Earth, landscapes, soils and bedrock, minerals, plants and soil bios, soil fertility and its regulation, soil water, soil and land resources, natural and techno - genesis processes in soil and upper soil cover, soil conservation and restoration, ecological and social and economic functions of soil cover.

Internship

Students conduct internahip at: experimental analytical laboratory of the Biology research Institute, Sarmat company, Yuzhgioprozem. The experts from the following organizations are

engaged as research consultants or reviewers or members of the state attestation commission: “the 21st century” agricultural and industrial company, Don State agrarian university, Research Institute named after Kalinenko, Don experimental station of oilseeds, Biryuchekutsk vegetable selection station, Don regional research Institute of agriculture, Rostov branch of State expertise agency.

Career prospects

The graduates of the program can work in production, technological, research and project spheres. The Master graduate can continue their studies as Ph.D. students or start working in:

Organizations of the Russian academy of science, Ministry of natural resources of RF, Ministry of agriculture RF;

academic and research organizations engaged in soil studies;

ecological, soil, melioration, agricultural organizations;

environmental organizations;

universities.

Module catalog

Management and Evaluation of Land Resources Master Module catalog

Semester 1

1. Name of module and code	Soil Science
2. Responsible for module	Professor Tatiana Minkina tel. +79185531632
3. Type of module	Elective
4. Level of module	Master
5. Number of academic hours per week	12 including self study
6. Number of ECTS - credits	6 ECTS
7. Form of study	Full time
8. Term and duration	18 weeks each autumn semester
9. Number of students	25
10. Prerequisites of module	Bachelor diploma
11. Content:	History and Methodology of Soil Science - 3ECTS Current topics in Soil Science – 3 ECTS
12. Learning outcomes	To know: history of soil science development, contribution of Russian and foreign scientists; the role of philosophy in the system of scientific knowledge, To understand: causes and consequences of soil science development and actual problems of soil science. To be able to: sum up, analyze soil science data, find causes of problems and suggest solutions, critically assess the main philosophical schools,.
13. Final assessment	exam
14. Forms of teaching	Lectures and seminars

15. Language of tuition	Russian
16. Literature	<p>Журналы:</p> <ol style="list-style-type: none"> 1. ACTA AGRICULTURAE SCANDINAVICA SECTION B-SOIL AND PLANT SCIENCE 2. APPLIED SOIL ECOLOGY 3. BIOLOGY AND FERTILITY OF SOILS 4. CANADIAN JOURNAL OF SOIL SCIENCE 5. CATENA 6. CLAYS AND CLAY MINERALS 7. COMMUNICATIONS IN SOIL SCIENCE AND PLANT ANALYSIS 8. EUROPEAN JOURNAL OF SOIL SCIENCE 9. GEODERMA 10. JOURNAL OF PLANT NUTRITION AND SOIL SCIENCE 11. JOURNAL OF SOIL AND WATER CONSERVATION 12. LAND DEGRADATION & DEVELOPMENT 13. NUTRIENT CYCLING IN AGROECOSYSTEMS 14. PEDOBIOLOGIA 15. PLANT AND SOIL 16. SOIL & TILLAGE RESEARCH 17. SOIL BIOLOGY & BIOCHEMISTRY 18. SOIL RESEARCH 19. SOIL SCIENCE 20. SOIL SCIENCE AND PLANT NUTRITION 21. SOIL SCIENCE SOCIETY OF AMERICA JOURNAL 22. SOIL USE AND MANAGEMENT <p>Интернет-ресурсы: http://elibrary.ru/ http://www.sciencedirect.com/ pochva.com http://biblioclub.ru/</p>
17. Renovation date	Annually by the beginning of the new academic year

1. Name of module and code	<i>Natural sciences</i>
2. Responsible for module	Professor Tatiana Minkina tel +79185531632
3. Type of module	Elective
4. Level of module	Master
5. Number of academic hours per week	11 hours of class work and 17 hours of self study
6. Number of ECTS	14 ECTS
7. Form of study	Full time
8. Semester and duration	18 weeks every autumn semester
9. Number of students	25
10. Module prerequisites	Bachelor Diploma
11. Content	Russian Natural Science within global science (3 ECTS) Philosophical problems of Natural Science (4 ECTS) Environmental Chemistry 4 ECTS Biosphere studies 3 ECTS
12. Learning outcomes	To know: geochemical role of the live substances, structure of biosphere, main energetic streams and bio-geo-chemical cycles, main directions of negative effects of human activities . To be able to: build main bio-geo-chemical cycles of the important elements, calculate productivity of natural and man-made systems of biosphere, to forecast future changes in biosphere, to make prognosis of migration and transformation ways of chemical compounds in environment.
13. Final assessment	exam
14. Forms of teaching	Lectures and seminars
14. Language of tuition	Russian
16. Literature	Philosophy: textbook for non-philosophy students / [A.Apollonov.] ; MSU. - 6-th edition. Journals 1. SOIL BIOLOGY & BIOCHEMISTRY Internet resources: http://elibrary.ru/ http://www.sciencedirect.com/ pochva.com http://biblioclub.ru/
17. Renovation date	Annually by the beginning of the new academic year

1. Module name and code	<i>Research methods</i>
2. Responsible for module	Professor Tatiana Minkina
3. Type of module	Elective
4. Level of module	Master
5. Number of academic hours per week	8 hours of class work, 12 hours self study
6. Number of ECTS - credits	10 ECTS
7. Form of study	Full time
8. Semester and duration	18 weeks every autumn semester
9. Number of students	25
10. Module prerequisites	Bachelor Diploma
11. Content	Digital Soil cartography and modeling (4 ECTS) State-of-the-art physical and chemical methods in soil science (3 ECTS) Analysis and modeling of soil poly - disperse systems (3 ECTS)
12. Learning outcomes	To know: foundations of digital soil mapping and mathematical modeling in soil science, approaches of selection of effective methods of soil analysis, methodological principles of soil evaluation. To be able to: use mathematical models and information technologies for studying soil cover, analyze and synthesize research findings, use state-of-the-art methods within poly – disperse soil systems. To have: skills of using geo –information technologies in various soil research, skills to use state-of-the art equipment for soil research
13. Final assessment:	Pass/fail
14. Forms of teaching	Lectures, workshops, practical training, laboratory work, Excursions
15. Language of tuition	Russian/English
16. Literature	Journals: 1. ACTA AGRICULTURAE SCANDINAVICA SECTION B-SOIL AND PLANT SCIENCE 2. APPLIED SOIL ECOLOGY 3. BIOLOGY AND FERTILITY OF SOILS 4. CANADIAN JOURNAL OF SOIL SCIENCE 5. CATENA 6. CLAYS AND CLAY MINERALS 7. COMMUNICATIONS IN SOIL SCIENCE AND PLANT ANALYSIS 8. EUROPEAN JOURNAL OF SOIL SCIENCE 9. GEODERMA 10. JOURNAL OF PLANT NUTRITION AND SOIL SCIENCE 11. JOURNAL OF SOIL AND WATER CONSERVATION 12. LAND DEGRADATION & DEVELOPMENT 13. NUTRIENT CYCLING IN AGROECOSYSTEMS 14. PEDOBIOLOGIA 15. PLANT AND SOIL 16. SOIL & TILLAGE RESEARCH 17. SOIL BIOLOGY & BIOCHEMISTRY 18. SOIL RESEARCH 19. SOIL SCIENCE 20. SOIL SCIENCE AND PLANT NUTRITION 21. SOIL SCIENCE SOCIETY OF AMERICA JOURNAL 22. SOIL USE AND MANAGEMENT Internet resources: http://elibrary.ru/ http://www.sciencedirect.com/ pochva.com

	http://biblioclub.ru/
17. Date of renovation	Annually by the beginning of a new academic year

Semester 2

1. module name and code	<i>Foreign language (professional)</i>
2. responsible for module	Associate professor M. Belousova
3. type of module	Basic obligatory
4. level of module	Master
5. number of academic hours per week	13 including self study
6. number of ECTS credits	4 ECTS
7. Form of study	Full time
8. Semester and duration	11 weeks every spring semester
9. Number of students	25
10. Module prerequisites	B1
11. Content	Foreign language for professional communication (4 ECTS)
12. Learning outcomes	Knowledge: soil science terminology, main grammar structures. To be able: to understand oral speech in soil science field, to take part in relevant research discussions.
13. Final assessment	exam
14. Forms of teaching	Practical training
15. Language of tuition	English
16. Literature	Teaching aid / [Akopova A.] ; SFedU. – Rostov-on-Don. English language: teaching aid. - Minsk : http://biblioclub.ru/index.php?page=book&id=11193 Sheveleva, S.A. English grammar: teaching aid / ISBN 978-5-238-01755-6 ; http://biblioclub.ru/index.php?page=book&id=114804 English for Master students : teaching aid / V.P.Frolova, L.V.Kozhanova, E.A. Молодых, С.В. Павлова ; Министерство образования и науки РФ, - Voronezh : . http://biblioclub.ru/index.php?page=book&id=255897 Internet resources: http://elibrary.ru/ http://www.sciencedirect.com/ pochva.com http://biblioclub.ru/
17. Renovation date	Annually by the beginning of a new academic year

1. Name of module and code	<i>Evaluation of land resources</i>
2. responsible for module	Professor Minkina, tel +79185531632
3. type of module	Elective
4. level of module	Master
5. number of academic hours per week	26 hours including self study
6. number of ECTS credits	13 ECTS
7. Form of study	Full time
8. Term and duration	18 weeks spring semester
9. Number of students	25
10. Module prerequisites	Basic knowledge of soil science and natural sciences (natural sciences module, soil science module)
11. Content	Evaluation of soil and land resources of Russia and the world (3 ECTS) Agricultural and chemical resources in the world agriculture (5 ECTS) Engineering soil science (2 ECTS) Sustainable development and ecological safety of agricultural landscapes (3 ECTS)
12. Learning outcomes	To know: foundations of soil fertility, ecological, economic and legal factors of using minerals, engineering processes in soil science, impact of physical soil properties and regimes on the landscape quality, main approaches to soil sustainability evaluation; buffer possibilities of different soil types. To be able to: use legal documents for soil evaluation, to identify differences in agricultural productions, use mechanisms of state regulation of agricultural production in the EC, the USA and RF, to find methods of enhancing mineral effectiveness in agriculture, solve typical expert problems, interpret analytical data, to range soils by sustainability level and to draw maps of soil sustainability, give recommendation for soil sustainability.
13. Final assessment	Pass/fail
14. Forms of teaching	Lectures, seminars, practical training, laboratory work, Excursions
15. Language of tuition	Russian/English
16. Literature	Dobrovolsky G.V. "Soil ecology" Moscow Golovanov A. I. Recultivation of soils. Shumalova G. Current problems in agricultural ecology. Journals: ACTA AGRICULTURAE SCANDINAVICA SECTION B-SOIL AND PLANT SCIENCE APPLIED SOIL ECOLOGY CLAYS AND CLAY MINERALS COMMUNICATIONS IN SOIL SCIENCE AND PLANT ANALYSIS EUROPEAN JOURNAL OF SOIL SCIENCE GEODERMA PLANT AND SOIL SOIL RESEARCH SOIL SCIENCE SOIL SCIENCE AND PLANT NUTRITION SOIL SCIENCE SOCIETY OF AMERICA JOURNAL Интернет-ресурсы: http://elibrary.ru/ http://www.sciencedirect.com/

	pochva.com http://biblioclub.ru/
17. Renovation date	Annually by the beginning of a new academic year

1. Name of module and code	<i>Field and laboratory practice</i>
2. responsible for module	Professor Tatiana Minkina, tel. +79185531632
3. type of module	Basic
4. level of module	Master
5. number of academic hours per week	Total: 108 hours
6. number of ECTS credits	4 ECTS
7. Form of study	Full time
8. Term and duration	4 weeks spring semester
9. Number of students	25
10. Module prerequisites	<i>Research methods</i>
11. Content	<p>Field practice and laboratory work. Field practice is aimed at getting first professional skills.</p> <p>Field practice is conducted on the following sites: the Botany garden, Laboratory of ecological monitoring, “Agrokhimservice” state centre, “Belaya rechka” field centre, Institute of corn plants, “Don” Golf and Country club, “Yuzhgiprozem”.</p> <p>Field practice includes field and laboratory stages.</p> <p>During the field expeditions the students investigate morphological, physical and chemical properties, and processes of black soils in Rostov region and the Botany Garden. The students will learn how to divide territory for soil survey depending on complexity level; how to map soil cover, to lay out small trenches and soil vertical profiles, will study main morphological properties and soil- forming processes, define types of soil-forming and field soil description, collect soil samples.</p> <p>During the laboratory stage students carry out physical and chemical analysis of soils.</p> <p>The cameral stage of practice is carried out at the department of soil science and land resources assessment. Students prepare materials for mapping, learn methods of distance research of soil cover and methods of documenting soil map and soil map legend.</p>
12. Learning outcomes	<p>After Learning practice students should be able:</p> <ul style="list-style-type: none"> To be fluent in the-state-of-the art physical and chemical methods used in soil science; To assess the feasibility of methods; To use mathematical models and information technologies for soil cover studies; To synthesize and analyze research material. <p>The students will master methods of comparative analysis of soils, of geo-information analysis, will get skills of using geo-information technologies for solving various soil science problems; of using software packages for the implementation of ready-made programs.</p> <p>The students will be able to use the state-of-the art equipment, to calculate and interpret data.</p>
13. Final assessment	report
14. Forms of teaching	Self – study under supervision
15. Language of tuition	Russian/English

16. Literature	<p>Zaushintsena, A.V. Soil science practicum: teaching aid / A.B. Okolelova, A.A.. Ecology of soils and landscapes. Teaching aid.</p> <p>Kulikov, Ya.K. Soil resources: teaching aid.</p> <p>Koposov, G.F. How to find nitrogen, phosphorus, and potassium in soils: teaching aid. Kazan.</p> <p>Bezuglova O.S. Soils of Rostov region: teaching aid.</p> <p>Cheshev A.S. Land resources of Rostov region and their use in the agriculture.</p> <p>Kolesnikov S.I. Ecology and functions of chemically contaminated soils.</p> <p>Shein E.V. Physics of soils.</p> <p>Varlamov A.A. Land cadastre.</p> <p>Dobrovolsky V.V. Geochemistry of soils and landscapes.</p> <p>Internet resources: http://elibrary.ru/ http://www.sciencedirect.com/ pochva.com http://biblioclub.ru/</p>
17. Renovation date	Annually by the beginning of a new academic year

1. Name of module and code	<i>Research seminar - 1</i>
2. responsible for module	Professor T. Minkina, tel +79185531632
3. type of module	Basic obligatory
4. level of module	Master
5. number of academic hours per week	40,5 hours including self study
6. number of ECTS credits	9 ECTS
7. Form of study	Full time
8. Term and duration	8 weeks spring semester
9. Number of students	25
10. Module prerequisites	Knowledge of main regulations and methods of soil science; of soil processes; of main methods of studying physical and chemical properties of soils
11. Content	Research work
12. Learning outcomes	To know: foundations of research methods used in specific field of research; Skills to: conduct laboratory research on a specific topic, to analyze and interpret experimental data, to use the-state-of-the art research equipment.
13. Final assessment	exam
14. Forms of teaching	Laboratory work, research work, excursions, workshop
15. Language of tuition	Русский/английский
16. Literature	Journals: 1. ACTA AGRICULTURAE SCANDINAVICA SECTION B-SOIL AND PLANT SCIENCE 2. APPLIED SOIL ECOLOGY 3. BIOLOGY AND FERTILITY OF SOILS 4. CANADIAN JOURNAL OF SOIL SCIENCE 5. CATENA 6. CLAYS AND CLAY MINERALS 7. COMMUNICATIONS IN SOIL SCIENCE AND PLANT ANALYSIS 8. EUROPEAN JOURNAL OF SOIL SCIENCE 9. GEODERMA 10. JOURNAL OF PLANT NUTRITION AND SOIL SCIENCE 11. JOURNAL OF SOIL AND WATER CONSERVATION 12. LAND DEGRADATION & DEVELOPMENT 13. NUTRIENT CYCLING IN AGROECOSYSTEMS 14. PEDOBIOLOGIA 15. PLANT AND SOIL 16. SOIL & TILLAGE RESEARCH 17. SOIL BIOLOGY & BIOCHEMISTRY 18. SOIL RESEARCH 19. SOIL SCIENCE 20. SOIL SCIENCE AND PLANT NUTRITION 21. SOIL SCIENCE SOCIETY OF AMERICA JOURNAL 22. SOIL USE AND MANAGEMENT Internet resources: http://elibrary.ru/ http://www.sciencedirect.com/ pochva.com http://biblioclub.ru/
7. Renovation date	Annually after students' evaluation

3d semester

1. Name of module and code	<i>Management of land resources</i>
2. responsible for module	Professor Olga Biryukova
3. type of module	elective
4. level of module	Master
5. number of academic hours per week	18 hours including self study
6. number of ECTS credits	9 ECTS
7. Form of study	Full time
8. Term and duration	18 weeks every autumn semester
9. Number of students	25
10. Module prerequisites	Evaluation of Land resources
11. Content	Certification and cadastre evaluation of soils and grounds (3 ECTS) Modern systems of land use (3 ECTS) Evaluation of soil sustainability to human influence (3 ECTS)
12. Learning outcomes	To know: foundations of state land cadastre and land evaluation, products certifying, systems of certification, methods of land cadastre evaluation; main approaches of soil sustainability evaluation to various types of human influence. Skills: to gather and analyze initial experimental field and statistical information, to evaluate effectiveness and competitiveness of investment and innovation production in the field of land planning, to make a prognosis of land resources use and agricultural producers' activities with regard to direct and indirect impact on biosphere.
13. Final assessment	exam
14. Forms of teaching	Lectures, seminars, excursions
15. Language of tuition	Russian
16. Literature	Kavchuk S.V. Geodesy support for land and real estate cadastre. Androsova I.A. Land Cadastre and evaluation. Practicum on technical and chemical control of plant production. Dobrovolsky G.V. Soil ecology. Journals: APPLIED SOIL ECOLOGY CANADIAN JOURNAL OF SOIL SCIENCE CATENA EUROPEAN JOURNAL OF SOIL SCIENCE GEODERMA JOURNAL OF SOIL AND WATER CONSERVATION LAND DEGRADATION & DEVELOPMENT NUTRIENT CYCLING IN AGROECOSYSTEMS PLANT AND SOIL SOIL & TILLAGE RESEARCH SOIL RESEARCH SOIL SCIENCE SOIL USE AND MANAGEMENT Internet resources: http://elibrary.ru/ http://www.sciencedirect.com/ pochva.com http://biblioclub.ru/
17. Renovation date	Annually by the beginning of a new academic year

1. Name of module and code	<i>Internship</i>
2. responsible for module	Professor Minkina, tel. +79185531632
3. type of module	Basic obligatory
4. level of module	Master
5. number of academic hours per week	36 hours per week including self-reflection
6. number of ECTS credits	6 ECTS
7. Form of study	Full time
8. Term and duration	Every autumn semester 6 weeks
9. Number of students	25
10. Module prerequisites	research methods, evaluation of land resources, management of land resources
11. Content	Internship is held in the following organizations: Sarmat company, "Rostovsky" state agricultural centre, "Yuzhgiprozem" company, Centre of forensic expertise, "Don" Golf and Country club, International Institute of plant nutrition, All-Russian Institute of corn plants.
12. Learning outcomes	Skills: to conduct field research, to draw maps of soils, to describe soils, to select soil samples and to analyze them, to make reports and surveys
13. Final assessment	exam
14. Forms of tuition	Internship, consultations
15. Language of tuition	Russian/English
16. Literature	<p>Journals:</p> <ol style="list-style-type: none"> 1. ACTA AGRICULTURAE SCANDINAVICA SECTION B-SOIL AND PLANT SCIENCE 2. APPLIED SOIL ECOLOGY 3. BIOLOGY AND FERTILITY OF SOILS 4. CANADIAN JOURNAL OF SOIL SCIENCE 5. CATENA 6. CLAYS AND CLAY MINERALS 7. COMMUNICATIONS IN SOIL SCIENCE AND PLANT ANALYSIS 8. EUROPEAN JOURNAL OF SOIL SCIENCE 9. GEODERMA 10. JOURNAL OF PLANT NUTRITION AND SOIL SCIENCE 11. JOURNAL OF SOIL AND WATER CONSERVATION 12. LAND DEGRADATION & DEVELOPMENT 13. NUTRIENT CYCLING IN AGROECOSYSTEMS 14. PEDOBIOLOGIA 15. PLANT AND SOIL 16. SOIL & TILLAGE RESEARCH 17. SOIL BIOLOGY & BIOCHEMISTRY 18. SOIL RESEARCH 19. SOIL SCIENCE 20. SOIL SCIENCE AND PLANT NUTRITION 21. SOIL SCIENCE SOCIETY OF AMERICA JOURNAL 22. SOIL USE AND MANAGEMENT <p>Internet-resources: http://elibrary.ru/ http://www.sciencedirect.com/ pochva.com http://biblioclub.ru/</p>
17. Renovation date	Annually after the students' evaluation

1. Name of module and code	<i>Research seminar - 2</i>
2. responsible for module	Professor Minkina, tel +79185531632
3. type of module	Basic obligatory
4. level of module	Master
5. number of academic hours per week	30 hours including self study work
6. number of ECTS credits	15 ECTS
7. Form of study	Full time
8. Term and duration	15 weeks autumn semester
9. Number of students	25
10. Module prerequisites	Research seminar-1 module
11. Content	Research work on the chosen topic
12. Learning outcomes	To know: research methods used in the chosen field of study; Skills: to conduct laboratory research work on a specific topic; to analyze and interpret experimental data in the field of research, to use the-state-of-the art research equipment
13. Final assessment	exam
14. Forms of teaching	Independent and supervised Research work and discussions
15. Language of tuition	Russian/English
16. Literature	Journals: 1. ACTA AGRICULTURAE SCANDINAVICA SECTION B-SOIL AND PLANT SCIENCE 2. APPLIED SOIL ECOLOGY 3. BIOLOGY AND FERTILITY OF SOILS 4. CANADIAN JOURNAL OF SOIL SCIENCE 5. CATENA 6. CLAYS AND CLAY MINERALS 7. COMMUNICATIONS IN SOIL SCIENCE AND PLANT ANALYSIS 8. EUROPEAN JOURNAL OF SOIL SCIENCE 9. GEODERMA 10. JOURNAL OF PLANT NUTRITION AND SOIL SCIENCE 11. JOURNAL OF SOIL AND WATER CONSERVATION 12. LAND DEGRADATION & DEVELOPMENT 13. NUTRIENT CYCLING IN AGROECOSYSTEMS 14. PEDOBIOLOGIA 15. PLANT AND SOIL 16. SOIL & TILLAGE RESEARCH 17. SOIL BIOLOGY & BIOCHEMISTRY 18. SOIL RESEARCH 19. SOIL SCIENCE 20. SOIL SCIENCE AND PLANT NUTRITION 21. SOIL SCIENCE SOCIETY OF AMERICA JOURNAL 22. SOIL USE AND MANAGEMENT Internet resources: http://elibrary.ru/ http://www.sciencedirect.com/ pochva.com http://biblioclub.ru/
17. Renovation date	Annually by the beginning of a new academic year

1. Name of module and code	<i>Master thesis</i>
2. responsible for module	Professor Minkina, tel +79185531632
3. type of module	obligatory
4. level of module	Master
5. number of academic hours per week	Total : 1080 academic hours
6. number of ECTS credits	30 ECTS
7. Form of study	Full time
8. Term and duration	18 weeks spring semester
9. Number of students	25
10. Module prerequisites	90 ECTS of the Master program
11. Content	Research for Master thesis (19 ECTS) Final state exam (7 ECTS) Preparation and Defense of Master thesis (4 ECTS)
12. Learning outcomes	Master qualification
13. Final assessment	Exam and defense of the thesis
14. Forms of teaching	Independent research
15. Language of tuition	Russian
16. Literature	Journals: 1. ACTA AGRICULTURAE SCANDINAVICA SECTION B-SOIL AND PLANT SCIENCE 2. APPLIED SOIL ECOLOGY 3. BIOLOGY AND FERTILITY OF SOILS 4. CANADIAN JOURNAL OF SOIL SCIENCE 5. CATENA 6. CLAYS AND CLAY MINERALS 7. COMMUNICATIONS IN SOIL SCIENCE AND PLANT ANALYSIS 8. EUROPEAN JOURNAL OF SOIL SCIENCE 9. GEODERMA 10. JOURNAL OF PLANT NUTRITION AND SOIL SCIENCE 11. JOURNAL OF SOIL AND WATER CONSERVATION 12. LAND DEGRADATION & DEVELOPMENT 13. NUTRIENT CYCLING IN AGROECOSYSTEMS 14. PEDOBIOLOGIA 15. PLANT AND SOIL 16. SOIL & TILLAGE RESEARCH 17. SOIL BIOLOGY & BIOCHEMISTRY 18. SOIL RESEARCH 19. SOIL SCIENCE 20. SOIL SCIENCE AND PLANT NUTRITION 21. SOIL SCIENCE SOCIETY OF AMERICA JOURNAL 22. SOIL USE AND MANAGEMENT Internet resources: http://elibrary.ru/ http://www.sciencedirect.com/ pochva.com http://biblioclub.ru/
17. Renovation date	annually