

## **Master of Ecology and Environmental Protection**

Master's program to acquire "Master of Ecology and Environmental Protection" provides a solid theoretical and practical training as a basis for realization of specialists in all areas and activities related to environmental protection.

Training of students in master's program provides comprehensive scientific theoretical and specialized training in the specialty, by building over the fundamental knowledge obtained in the course of training for degree "bachelor" in the specialty "Ecology and environmental protection".

The emphasis is on increasing the professional competence and skill formation for making strategic and tactical management decisions, work in business management programs in the field of environmental protection, performing a specialized research and on developing creativity teaching and expertise.

The acquisition of "Master of Ecology and Environmental Protection" is a prerequisite for professional development of students such as experts, government officials and heads of departments to manage the environment; in information systems environment, the structures of the ministries municipalities and other environmental authorities, in carrying out research and teaching on issues of sustainable (environmentally friendly) development and environmental protection, etc.

## Structure of the curriculum

**Specialty: Ecology and environmental protection**

**“Master”**

<b>First year</b>			
<b>First semester</b>	<b>ECTS credits</b>	<b>Second semester</b>	<b>ECTS credits</b>
Environmental Protection Management	<b>6</b>	Meteorology and Climatology	<b>6</b>
Soil Science, Soil Pollution and its Impact on Ecosystems	<b>6</b>	Fundamentals of Ecology	<b>6</b>
Air pollution and impact of ecosystems	<b>6</b>	Water Pollution and Impact on Ecosystems	<b>6</b>
Conservation of Biodiversity	<b>6</b>	Treatment of solid waste	<b>6</b>
Environmental Monitoring	<b>6</b>	Fluid Purification	<b>6</b>
<b>Second year</b>			
<b>Third semester</b>	<b>ECTS credits</b>	<b>Fourth semester</b>	<b>ECTS credits</b>
Ecosystem services	<b>6</b>	Remote methods for environmental monitoring	<b>4</b>
Water Resources Management	<b>6</b>	Nature Conservation	<b>4</b>
Soil and soil fertility preservation	<b>6</b>	Urbanization and Environment	<b>4</b>
Waste management	<b>6</b>	Elective course 1 (from Group II)	<b>3</b>
Elective course 1 (from Group I)	<b>3</b>	Development and defense of graduation work	<b>15</b>
Elective course 2 (from Group I)	<b>3</b>		
<b>Elective courses</b> (Students choose two subjects from Group I)		<b>Elective courses</b> (Students choose one subject from Group II)	
<b>I Group</b>	<b>3</b>	<b>II Group</b>	<b>3</b>
Renewable energy sources		Management of protected areas	
Ecological programs		Public relations in environmental protection	
Problems of sustainable development		Regional programs for environmental protection	
Ecological Risk			
Computer Cartography and Geographic Information Systems			
Mathematical Models in Ecology and Environmental Protection			
	<b>Total</b> <b>60</b>		<b>Total</b> <b>60</b>

**TOTAL FOR BOTH SEMESTERS: 120 credits**

## ENVIRONMENTAL PROTECTION MANAGEMENT

**ECTS credits:** 6

**Weekly hours:** 3 lectures + 1 practical exercises

**Form of assessment:** current control and exam

Type of exam: written

**Semester:** I

**Methodological guide:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Prof. Dr. Emilia Varadinova

**E-mail:** [emilia.varadinova@swu.bg](mailto:emilia.varadinova@swu.bg)

**Anotation:** The course "Environmental Protection Management" studies the principles and approaches for managing the process of environmental protection. Students are introduced to European and national environmental institutions and their thematic activities. The responsibilities of authorized environmental management structures are analyzed. The training provides necessary knowledge and competencies for participation in expert teams in the development of strategies, programs and management plans, as well as in the preparation of environmental expertise and assessments.

## SOIL SCIENCE, SOIL POLLUTION AND IT'S IMPACT ON ECOSYSTEMS

**ECTS credits :** 6

**Hours per week:** 3л+0cy+0лы+1пы+p

**Forms of assessment:** on going control and exam

**Exam type:** Test

**Semester:** I

**Methodological guidance:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Assist. Prof. Miroslav Ivanov, PhD

**E-mail:** [m\\_ivanov@swu.bg](mailto:m_ivanov@swu.bg)

**Anotation:** he discipline "Soil Science, Soil Pollution and it's Impact on Ecosystems" is a mandatory course for students specializing in "Ecology and Environmental Conservation." Soil preservation is an extremely important issue from both a global and regional perspective, not only due to humanity's food security but also because of the optimal functioning of all terrestrial ecosystems. The natural evolutionary processes of soil formation are today drastically influenced by intensified anthropogenic impacts from the use of various natural resources and the development of different economic sectors. Global pollution of the Earth, irrational use of arable land, deforestation, soil erosion, and several other direct and indirect negative impacts on the soil demand urgent and adequate measures for soil conservation and the enhancement of soil fertility. The aim of the discipline is the students to acquire the necessary knowledge about soil as a natural body, as well as the modern problems in conserving soils from degradation and pollution, and on maintaining and restoring soil fertility in natural landscapes and in territories used for agriculture and livestock farming.

## AIR POLLUTION AND IMPACT ON ECOSYSTEMS

**ECTS credits:** 6

**Weekly hours:** 3 lectures + 1 practical exercises

**Form of assessment:** current control and exam

**Type of exam:** written

**Semester:** I

**Methodological guide:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Prof. Dr. Emilia Varadinova

**E-mail:** [emilia.varadinova@swu.bg](mailto:emilia.varadinova@swu.bg)

**Anotation:** The course "Air pollution and impact of ecosystems" studies the sources of air pollution, the factors influencing the processes of pollution and the transfer of pollutants, the theoretical statements, legislative framework and practical orientation of the problems related to atmospheric pollution and the protection of air purity. The emphasis is on climate change, the adverse impacts of air pollution on the environment, and the health and economic aspects of air pollution are examined.

## CONSERVATION OF BIODIVERSITY

**ECTS credits:** 6

**Weekly hours:** 21

**Form of assessment:** exam

**Type of exam:** written

**Semester:** I

**Methodological guide:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Assoc. Prof. Konstantin Tyufekchiev, PhD

**E-mail:** [konstantinat@swu.bg](mailto:konstantinat@swu.bg)

**Annotation:** The course "Conservation of Biodiversity" provides the necessary knowledge about the contemporary problems in the conservation of rapidly declining biological diversity (abbreviated biodiversity), which is the result of evolutionary processes and random genetic changes over hundreds of millions of years in the past. It represents an integrated approach to knowledge for the conservation and management of biodiversity, which uses appropriate principles and knowledge: from basic biological fields, such as genetics, biology and ecology; from natural resource management fields, such as hunting, fishing and wildlife; and from social sciences, such as anthropology, sociology, philosophy and economics.

## ECOLOGICAL MONITORING

**ECTS credits:** 6

**Weekly hours:** 3 lectures + 1 practical exercises

**Form of assessment:** current control and exam

**Type of exam:** written

**Semester:** I

**Methodological guide:**

Department of Geography, Ecology and Environmental Protection  
Faculty of Mathematics and Natural Sciences  
**Lecturer:** Prof. Dr. Emilia Varadinova  
**E-mail:** [emilia.varadinova@swu.bg](mailto:emilia.varadinova@swu.bg)

**Annotation:** The course "Environmental Monitoring" studies the structure, organization and management of the National environmental monitoring system, the provision of material-technical, methodological and program-informational resources necessary for its functioning and development. The course provides knowledge about the national networks for monitoring atmospheric air, water, land and soil, forests and protected areas, biodiversity, radiological monitoring and noise monitoring, as well as control and information systems for emissions of harmful substances into the atmospheric air, wastewater in water bodies and waste management.

## METEOROLOGY AND CLIMATOLOGY

**ECTS credits:** 6

**Hours per week:** 3l+1pe

**Form of assessment:** on-going control and exam

**Examination type:** written

**Semester:** II

**Methodological guidance:**

Department: "Geography, ecology and environmental protection"

Faculty of Mathematics and natural sciences

**Lecturers:** Assoc. prof. Krasimir Stoyanov, PhD

**E-mail:** [krasi\\_sto@swu.bg](mailto:krasi_sto@swu.bg)

**Annotation:** The academic course "Meteorology and Climatology" is offered as a mandatory component of the curriculum for students enrolled in the Master's programme in Ecology and Environmental Protection. The primary objective of this programme is to provide fundamental knowledge regarding the structure, composition, and key processes occurring in the atmosphere, as well as the regularities in the formation, geographical distribution, and temporal variations of the climate.

The course places particular emphasis on the structure and interactions within the climate system, which encompasses the atmosphere, oceans, cryosphere, terrestrial surface, and biomass. It is closely related to other physical-geographical sciences, such as atmospheric physics, hydrology, and geomorphology, thereby enabling an integrated understanding of natural processes and their interconnections.

The programme is designed to equip students with a comprehensive understanding of meteorological phenomena, encompassing both theoretical and applied aspects. Students will gain insight into the factors that determine meteorological phenomena and their specific characteristics. The course is designed to cultivate competencies in the formulation of synoptic forecasts, with a pronounced emphasis on the analysis and evaluation of hazardous weather phenomena.

## FUNDAMENTALS OF ECOLOGY

**ECTS credits: 6**

**Form of assessment:** on-going control and exam

**Semester: II**

**Methodological guidance:**

Department: "Geography, ecology and environmental protection"

Faculty of Mathematics and natural sciences

**Lecturers:** Assoc. prof. Lidia Sakelarieva, PhD

**Hours per week: 3l+1pe**

**Examination type:** written

**Annotation:** The course "Fundamentals of Ecology" focuses on the core approaches and concepts in ecology as an interdisciplinary science that links together the biological, physical and social sciences and is closely related to environmental protection. The main goal of the course is to provide basic knowledge and form skills and competencies about environmental factors in different living environments (terrestrial-air, aquatic, soil) and the adaptation of organisms to different environmental regimes, as well as about the structure and functioning of biological macrosystems – populations, biocenoses (biotic communities), ecosystems.

## WATER POLLUTION AND IMPACT ON ECOSYSTEMS

**ECTS credits: 6**

**Weekly hours:** 3 lectures + 1 practical exercises

**Form of assessment:** current control and exam

**Type of exam:** written

**Semester: II**

**Methodological guide:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Prof. Dr. Emilia Varadinova

**E-mail:** [emilia.varadinova@swu.bg](mailto:emilia.varadinova@swu.bg)

**Annotation:** The course "Water Pollution and Impact on Ecosystems" studies the sources of water pollution, the factors influencing the processes of pollution, the degradation and transport of pollutants, and the impact of water pollution on ecosystems. Practical exercises provide an opportunity for independent work of students related to the collection of biological samples, measurement of basic physicochemical parameters of the aquatic environment and determination of nutrients

## TREATMENT OF SOLID WASTE

<b>ECTS credits: 6</b>	<b>Semester: II (second)</b>
<b>Methods of teaching:</b> Lectures and lab.	<b>Hours per week:</b> 3 lectures+1 lab.
<b>Form of assessment:</b> on-going control and examination	<b>Examination type:</b> written
<b>Methodological guidance:</b> Department "Geography, Ecology and	<b>Type of course:</b> Compulsory

Environmental Protection” e-mail: <a href="mailto:katedrageoos@swu.bg">katedrageoos@swu.bg</a> Faculty of Mathematics and Natural Sciences	
<b>Lecturers:</b> Chief assistant prof. Veselina Dalgacheva, PhD, <a href="mailto:dalgacheva@swu.bg">dalgacheva@swu.bg</a> Department “Geography, Ecology and Environmental Protection” e-mail: <a href="mailto:katedrageoos@swu.bg">katedrageoos@swu.bg</a>	<b>Registration for the course:</b> According to the regulations for mandatory courses <b>Registration for the exam:</b> Agreed upon with the lecturer and the academic administration

**Annotation:** The purpose of the course is to acquaint students with the basic concepts of the accepted European and Bulgarian hierarchy in waste management and the resulting priorities. The discipline aims to prepare staff to carry out waste integrated management, the control activities, to participate in the development of plans, programs, expertise and EIA reports in the field of waste management. Emphasis in the training is placed on sustainable development, involving the application of environmentally friendly technologies, the specific benefits of their implementation, with elements of waste minimization, recovery, reuse and final disposal.

## FLUID PURIFICATION

**ECTS credits:** 6

**Form of assessment:** on-going control and exam

**Semester:** II

**Methodological guidance:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Assoc. Prof. Dimitrina Kerina, PhD

**E-mail:** [d\\_kerina@swu.bg](mailto:d_kerina@swu.bg)

**Hours per week:** 3l+1pe

**Examination type:** written

**Annotation:** The course in Fluid Purification is mandatory for students in Ecology and Environmental Protection Master's program. The course consists of 60 total teaching hours including 45 lecture hours, 15 laboratory exercises hours and 120 extracurricular activities hours.

The aim of the course is to teach students to methods and equipment for fluid purification. The content of the course material is structured in three sections: fluid mechanics; purification of dust-gas fluids and wastewater treatment.

## ECOSYSTEM SERVICES

**ECTS credits:** 6

**Form of assessment:** on-going control and exam

**Semester:** III

**Methodological guidance:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Hours per week:** 3l+1pe

**Examination type:** written

**Lecturer:** Assoc. Prof. Lidia Sakelarieva, PhD

**Annotation:** Prosperity of human society have always been closely linked with the natural environment, and the presence of natural resources such as minerals, oil, valuable timber and fertile land was crucial for the material wealth of each country. Over the past two decades, the notion of the value of natural resources has changed radically as the state of the environment is deteriorating rapidly. Elements of nature such as clean air, abundant clean drinking water, greenery in cities and beautiful landscapes, until recently taken for granted, have become more and more valued by people. The main objective of the course is to provide basic knowledge about ecosystem services - the benefits, direct and indirect, that people derive from ecosystems functioning, and to develop skills for assessment of these services.

### WATER RESOURCES MANAGEMENT

**ECTS credits:** 6

**Weekly hours:** 3 lectures + 1 practical exercises

**Form of assessment:** current control and exam

Type of exam: written

**Semester:** III

**Methodological guide:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Prof. Dr. Emilia Varadinova

**E-mail:** [emilia.varadinova@swu.bg](mailto:emilia.varadinova@swu.bg)

**Annotation:** The course "Water Resources Management" studies the principles and vision of Europe and Bulgaria for ensuring and guaranteeing the necessary quantity and sufficiently good quality of water for all legal needs, through better implementation of the legislative regulations in the field of water, integration of water policy objectives in other areas and overcoming gaps in regulatory regulations.

### SOIL AND SOIL FERTILITY PRESERVATION

**ECTS credits :** 6

**Hours per week:** 3л+0cy+0лы+1py+p

**Forms of assessment:** on going control and exam

**Exam type:** Test

**Semester:** III

**Methodological guidance:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Assist. Prof. Miroslav Ivanov, PhD

**E-mail:** [m\\_ivanov@swu.bg](mailto:m_ivanov@swu.bg)

**Anotation:** The discipline "Soil and soil fertility preservation" is a mandatory course for students enrolled in the specialty "Ecology and Environmental Protection," MSc degree program — 2 semesters. Soil conservation is an extremely important issue on a global and regional scale not only for the food security of humanity but also for the optimal functioning of all terrestrial ecosystems. Natural evolutionary processes of soil formation today are heavily influenced by intensified anthropogenic impact due to the utilization of various natural resources and the development of different economic sectors. Global pollution of the



Earth, irrational land use, deforestation, soil erosion, and various other direct and indirect negative effects on soil necessitate urgent and adequate measures for soil protection and enhancement of soil fertility.

The aim of this course is for students in the specialty of acquiring essential knowledge about soil as a natural body and to understand modern problems related to soil degradation and pollution, as well as soil preservation and restoration of soil fertility in natural landscapes and areas used for agriculture and animal husbandry.

## WASTE MANAGEMENT

<b>ECTS credits:</b> 6	<b>Semester:</b> III
<b>Methods of teaching:</b> Lectures and lab.	<b>Hours per week:</b> 3 lectures+1lab.
<b>Form of assessment:</b> on-going control and examination	<b>Examination type:</b> written
<b>Methodological guidance:</b> Department "Geography, Ecology and Environmental Protection" e-mail: <a href="mailto:katedrageoos@swu.bg">katedrageoos@swu.bg</a> Faculty of Mathematics and Natural Sciences	<b>Type of course:</b> Compulsory
<b>Lecturers:</b> Chief Assistant Prof. Veselina Dalgacheva, PhD, <a href="mailto:dalgacheva@swu.bg">dalgacheva@swu.bg</a> Department "Geography, Ecology and Environmental Protection" e-mail: <a href="mailto:katedrageoos@swu.bg">katedrageoos@swu.bg</a>	<b>Registration for the course:</b> According to the regulations for mandatory courses <b>Registration for the exam:</b> Agreed upon with the lecturer and the academic administration

**Annotation:** The course "Waste management" gives the opportunity to students to study the concept of environmentally friendly waste management; sustainable development, which involves the application of environmentally friendly technologies, as well as the efficient use of resources and the circular economy; modern methods and technologies for waste treatment; regulatory requirements of the European Union and national legislation; economic and health aspects of environmentally friendly waste management and the efficient use of resources.

## ECOLOGICAL PROGRAMS

**ECTS credits:** 3

**Form of assessment:** exam

**Semester:** III

**Methodological guide:**

Department of Geography, Ecology and Environmental Protection  
Faculty of Mathematics and Natural Sciences

**Lecturer:** Prof. Dr. Emilia Varadinova

**E-mail:** [emilia.varadinova@swu.bg](mailto:emilia.varadinova@swu.bg)

**Weekly hours:** 2 lectures

**Type of exam:** written

**Annotation:** The main goal of environmental protection at the European and national levels is to accelerate the ecological transition in a fair and inclusive manner, with priorities aimed at reducing greenhouse gas emissions, adapting to climate change, striving for zero environmental pollution, protecting and restoring biodiversity. The course "Ecological programs" studies the principles of developing and implementing regulated environmentally friendly mechanisms and incentive initiatives related to the protection of environmental components. An important tool in this direction is the development of environmental plans, programs and strategies, as well as the implementation of the mechanisms of the European Union operational programs.

## PROBLEMS OF SUSTAINABLE DEVELOPMENT

**ECTS credits:** 3

**Form of assessment:** exam

**Semester:** III

**Methodological guide:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Assoc. Prof. Konstantin Tyufekchiev, PhD

**E-mail:** [konstantinat@swu.bg](mailto:konstantinat@swu.bg)

**Weekly hours:** 21

**Type of exam:** written

**Annotation:** The aim of the course "Problems of sustainable development" is to give the students in "Ecology and Environmental Protection" – "Master program" basic knowledge of the legal framework and approaches for realizing the concept of sustainable development.

Students acquire skills to analyze and evaluate various issues relating to sustainable development posed by poor forecasting and strategic planning, due to deficiencies in the organization and implementation of "best practices" to achieve sustainable development, etc. Particular attention is paid to the implementation of effective approaches resursopolzvane, greater involvement of renewable energies in energy systems and others.

## ECOLOGICAL RISK

<b>ECTS credits:</b> 3	<b>Semester:</b> III
<b>Methods of teaching:</b> Lectures and lab.	<b>Hours per week:</b> 21
<b>Form of assessment:</b> on-going control and examination	<b>Examination type:</b> written
<b>Methodological guidance:</b> Department "Geography, Ecology and Environmental Protection" e-mail: <a href="mailto:katedrageoos@swu.bg">katedrageoos@swu.bg</a> Faculty of Mathematics and Natural Sciences	<b>Type of course:</b> Compulsory
<b>Lecturers:</b> Prof. Emiliya Varadinova, PhD,	<b>Registration for the course:</b> According to the regulations for mandatory

<a href="mailto:emilia.varadinova@swu.bg">emilia.varadinova@swu.bg</a> Department “Geography, Ecology and Environmental Protection” e-mail: <a href="mailto:katedrageoos@swu.bg">katedrageoos@swu.bg</a>	courses <b>Registration for the exam:</b> Agreed upon with the lecturer and the academic administration
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**Annotation:** The purpose of the course "Environmental Risk" is to enable students to build on their knowledge from the bachelor's degree and to gain new knowledge about the nature of environmental risk, the types of threats to the environment and the achievement of environmental security in the context of sustainable development.

## COMPUTER CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS

**ECTS credits:** 3

**Hours per week:** 21

**Form of assessment:** on-going control and exam

**Examination type:** written

**Semester:** III

**Methodological guidance:**

Department: “Geography, ecology and environmental protection”

Faculty of Mathematics and natural sciences

**Lecturer:** Ass. prof. Galina Bezinska, PhD

**E-mail:** [galinabezinska@swu.bg](mailto:galinabezinska@swu.bg)

**Course Description:** The elective course “*Computer Cartography and Geographic Information Systems*” is intended for master’s degree students specializing in *Ecology and Environmental Protection*. It builds upon the foundational knowledge acquired during bachelor-level studies in cartography and GIS and aims to enhance and apply these competencies through the use of contemporary geospatial technologies in real-world environmental contexts.

The course offers an in-depth exploration of the creation, analysis, and visualization of spatial data. It develops students’ ability to integrate various sources of geoinformation—such as satellite imagery, GPS data, field measurements, and open-access datasets. Lectures are practice-oriented and incorporate case-based learning, enabling students to gain proficiency in advanced techniques for thematic mapping, spatial modelling of environmental processes (e.g., pollution, erosion, biodiversity), and the creation of web-based visualizations and Story Maps suitable for both administrative and public communication.

Course content is closely connected to related subjects, including *Ecological Cartography*, *Geographic Information Systems*, *Remote Sensing Methods for Environmental Monitoring*, and *Environmental Modelling*. This interdisciplinary alignment fosters a comprehensive understanding of the spatial dimensions of ecological processes and environmental policy-making.

Upon successful completion, students will demonstrate competencies in spatial analysis, map design and interpretation with an ecological focus, and the practical use of GIS platforms for evidence-based decision-making in environmental management. The course encourages the integration of theoretical knowledge with practical applications, effective communication of spatial data through visual tools, and the use of GIS as a key instrument in environmental planning, monitoring, and assessment within institutional frameworks.

The knowledge, skills, and competencies acquired through the course will prepare students for professional careers in public administration, research institutions, and non-governmental organizations engaged in natural resource management, sustainable development, and environmental monitoring.

## MATHEMATICAL MODELS IN ECOLOGY AND ENVIRONMENTAL PROTECTION

**ECTS credits:** 3

**Form of assessment:** on-going control and exam

**Semester:** III

**Methodological guidance:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Assoc. Prof. Kostadin Samardzhiev, PhD,

Department of Mathematics, University of SWU "Neofit Rilski" - Blagoevgrad

**Hours per week:** 2l

**Examination type:** written

**Annotation:** The educational process in this course includes teaching of ecology in order to apply the methods of mathematical modeling for investigation of ecological problems, ecosystems and problems of the environment, in particular the air and water pollution, climatic changes etc. Basic mathematical models in ecology will be considered and analyzed with special attention to the application of the population theory.

## REMOTE METHODS FOR ENVIRONMENTAL MONITORING

**ECTS credits:** 4

**Form of assessment:** exam

**Semester:** IV

**Methodological guide:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Assoc. Prof. Konstantin Tyufekchiev, PhD

**E-mail:** [konstantinat@swu.bg](mailto:konstantinat@swu.bg)

**Weekly hours:** 2l+1pe

**Type of exam:** written

**Annotation:** The discipline aims to familiarize students with the possibilities and application of aerospace methods, technical means and technologies in solving one of the most important problems of modern humanity, namely - research in the field of ecology and the environment. The curriculum of the discipline examines aerospace research, with an emphasis on remote aerospace research of the Earth. The various methods and means for remote research are discussed, as well as the various techniques and processes for processing the captured images to achieve optimal environmental monitoring.

## NATURE CONSERVATION

**ECTS credits:** 4

**Form of assessment:** on-going control and exam

**Semester:** IV

**Methodological guide:**

**Weekly hours:** 2l+1pe

**Type of exam:** written

Department of Geography, Ecology and Environmental Protection  
Faculty of Mathematics and Natural Sciences  
**Lecturer:** Assoc. Prof. Konstantin Tyufekchiev, PhD  
**E-mail:** [konstantinat@swu.bg](mailto:konstantinat@swu.bg)

**Annotation:** Discipline “Nature Conservation” is learned by students in the specialty “Ecology and Environmental Protection (EEP)” in order to obtain basic knowledge for the conservation of natural areas and objects by placing them under a certain mode of protection (conservation). The course is relatively new scientific discipline that separates mainly focus on theoretical and practical problems of conservation as a current method in modern nature conservation.

## URBANIZATION AND ENVIRONMENT

**ECTS credits:** 4  
**Form of assessment:** on-going control and exam  
**Semester:** IV  
**Methodological guidance:** Department of Geography, Ecology and Environmental Protection  
Faculty of Mathematics and Natural Sciences  
**Lecturer:** Assoc. Prof. Lidia Sakelarieva, PhD  
**Hours per week:** 2l+1pe  
**Examination type:** written

**Annotation:** As the population grows, the relative share of people living in cities also increases. Never before have cities been so large in size and population and never have they had such a significant impact on natural ecosystems. With their production and consumption patterns, they contribute significantly to environmental problems. As heterotrophic ecosystems, whose existence is impossible without the constant supply of huge amounts of energy, water, food and many other resources, they act as parasites on the natural environment - they destroy it directly, deplete its resources, release large amounts of solid, liquid and gaseous substances that pollute the soil, water and air. The course examines the process of emergence, development and growth of cities, as well as the impact of urbanization on the atmosphere, lithosphere, atmosphere and biosphere. Attention is paid to sustainable urban development, criteria and indicators for such development, urban agglomerations and the cities in Bulgaria and environmental problems they cause.

## PROTECTED AREAS MANAGEMENT

**ECTS credits:** 3  
**Form of assessment:** on-going control and exam  
**Semester:** IV  
**Methodological guide:**  
Department of Geography, Ecology and Environmental Protection  
Faculty of Mathematics and Natural Sciences  
**Lecturer:** Assoc. Prof. Konstantin Tyufekchiev, PhD  
**E-mail:** [konstantinat@swu.bg](mailto:konstantinat@swu.bg)  
**Weekly hours:** 2l+1pe  
**Type of exam:** written

**Annotation:** Course "Protected Areas Management" is learned by students in the specialty "EEP" degree of Master of Ecology to broaden and deepen the knowledge of management of protected areas. By students acquire skills for making management decisions on various activities in guarding and use of protected areas.

The course "Protected Areas Management" includes issues related to methodologies for developing strategies, programs and management plans for various types of protected areas.

## **PUBLIC RELATIONS IN ENVIRONMENTAL PROTECTION**

**ECTS CREDITS: 3**

Weekly workload: 2 lect.

Form of knowledge control: **Exam**

Exam type: **Written**

Semester: **IV**

### **Methodological Guidance:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Chief Assistant Professor Milena Yankova, PhD

Department of Public Relations

e-mail: [yankova\\_milena@swu.bg](mailto:yankova_milena@swu.bg)

**Annotation:** The course aims to inform the students about the history and development of Public Relations. Emphasis is placed on the communication with various target audiences for raising environmental awareness, with the aim of changing attitudes and modifying behaviour.

The lectures place an emphasis on effective communication for promoting an inclusive, fair and productive dialogue on issues related to the environment. The course pays attention to the professional and ethical principles of communication on environmental topics.

## **REGIONAL PROGRAMMES FOR ENVIRONMENT PROTECTION**

**ECTS credits: 3**

**Weekly hours: 2 lectures**

**Form of assessment:** exam

**Type of exam:** written

Semester: **IV**

### **Methodological guide:**

Department of Geography, Ecology and Environmental Protection

Faculty of Mathematics and Natural Sciences

**Lecturer:** Prof. Dr. Emilia Varadinova

**E-mail:** [emilia.varadinova@swu.bg](mailto:emilia.varadinova@swu.bg)

**Annotation:** Solving the problems of the protection of environment components and the stable development of a particular region is based on developed programmes with events planned within the action plans.

Plans and programmes on regional level provide integrated environment management in accordance with the principles and objectives of the Environment Protection Law, the Law on Regional Development and their corresponding National strategies.