

**ECO SUMMER SCHOOL
«GOGREEN WITH RUSSIAN»**

Offline mode with online broadcasting (Izhevsk time GMT+4)

WEEK ONE	SUNDAY 08.08.21	<i>Arrival Day (accommodation in local hostels, hotels)</i>			
		<i>10.00 – 10.45</i>	<i>11.00 - 12.00</i>	<i>12.30 – 14.30</i>	<i>after 15.00</i>
	MONDAY 9.08.21	OPENING CEREMONY <i>UdSU</i>	LUNCH BREAK	UDMURTIA IN LANDSCAPE DIMENSION: NATURE. CULTURE. ETHNOS. (Landscape matrix of Izhevsk) <i>Izhevsk Central Park</i>	FREE TIME
	TUESDAY 10.08.21	Russian language <i>UdSU</i>		BIODIVERSITY OF THE KAMA REGION: FLORA (Plants for health and beauty. Making herbal collection) <i>UdSU Botanical Garden</i>	
	WEDNESDAY 11.08.21	Russian language <i>UdSU</i>		BIODIVERSITY OF THE KAMA REGION: FAUNA (Interactive excursion) <i>Izhevsk Zoo</i>	
	THURSDAY 12.08.21	Russian language <i>UdSU</i>		MONITORING OF NATURAL ENVIRONMENTS <i>UdSU</i>	
	FRIDAY 13.08.21	Russian language <i>UdSU</i>		TRIP TO MICROCOSM <i>UdSU</i>	
	SATURDAY 14.08.21	BIRDING SESSION <i>Visit to the Fishing farm “Pikhtovka”</i>			
	SUNDAY 15.08.21	FREE TIME			

WEEK TWO		<i>10.00 – 10.45</i>	<i>11.00 - 12.00</i>	<i>12.30 – 14.30</i>	<i>after 15.00</i>
	MONDAY 16.08	Russian language <i>UdSU</i>	LUNCH BREAK	SEPARATE COLLECTION OF WASTE IN UDMURTIA (workshop «Making Eco souvenirs») <i>UdSU or visit to Ecopoint</i>	FREE TIME
	TUESDAY 17.08	Russian language <i>UdSU</i>		ENVIRONMENTAL BIO TECHNOLOGIES (laboratory work: methods of cultivation of fungi, inoculation of plants and assessment of mycorrhizal infection in plant roots) <i>UdSU</i>	
	WEDNESDAY 18.08	Russian language <i>UdSU</i>		ENVIRONMENTAL PLANNING AND MANAGEMENT IN URBAN DESIGN (Green city management) <i>UdSU</i>	
	TURSDAY 19.08	Russian language <i>UdSU</i>		ENVIRONMENTAL PLANNING AND MANAGEMENT IN URBAN DESIGN (Green city management) <i>UdSU</i>	
	FRIDAY 20.08	Russian language <i>UdSU</i>		FINAL PROJECT (Kahoot QUIZ) CLOSING CEREMONY	
	SATURDAY 21.08	SOCIAL PROGRAMME: <i>Visit to the Museum of Tchaikovski in Votkinsk or Open-air ethnographical museum of the Udmurt culture “Ludorvay”</i>			
	SUNDAY 22.08	<i>Departure Day</i>			

Our experts and course preview



Aleksei Kashin, Candidate of Geography, Director of UdSU bio-ecological station

Interests: physical and social geography, bio-geography, landscapes

UDMURTIA IN LANDSCAPE DIMENSION: NATURE. CULTURE. ETHNOS. (Landscape matrix of Izhevsk)

Cities are laid out with a purpose. Sometimes they grow near the rivers confluence, other times – next to resource deposits or important traffic arteries. However, it has been observed that many cities appear on conspicuous landscape borders. Izhevsk is no exception. The city was founded in 1760 as a steelworks. At first glance, its location is inexplicable: far from main land and water ways, in a scarcely populated area, with no major iron deposits...

So, how come a factory was built in a remote back-country location and became one of the biggest of its kind not only in Russia but the world? How come it grew into one of the largest Russian cities with its population taking 20th place? We will answer this and many other questions during our tour. One of the most fascinating things about the tour is the point from which we will be observing the city: standing on the high bank of the Izhevsk Lake, next to the dam, we will see both the dense forest to the north of the city and treeless densely populated territory to the south. The two parts are divided by the natural border which can be easily discerned even on the space photos – the river Izh – the river which gave birth to the lake and the factory.

We will make an attempt not just to see but to feel how the combination of natural components forms a matrix defining the settling patterns, configuration of transport ways, agricultural and industrial patterns, and even the lifestyle and mentality of people inhabiting this place.

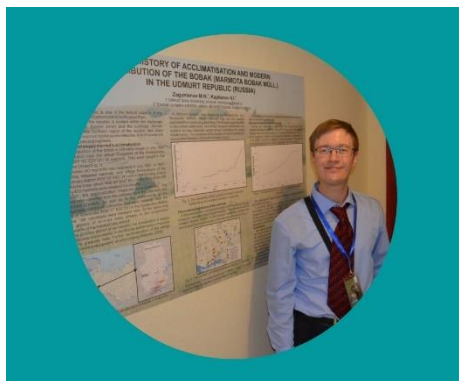


Nelly Veselkova, Candidate of Biology

Interests: botany, agricultural eco-systems, population and morphological research

BIODIVERSITY OF THE KAMA REGION: FLORA

You will learn how to use plants in aromatherapy and cosmetology. On a hot summer day you will quench your thirst with self-made herbal tea. Besides drinks, plants are also used in the Udmurt national cuisine. In our workshops you will get skills to prepare your own herbarium and make a “Health”-pillow. Do you know the difference between apophytes and invasive plants, the Red and the Black Books? The ‘Flora’ class will equip you with this knowledge.



Mikhail Zgumenov, Candidate of Biology

Interests: mammology, ornithology, introduction, study of groundhogs population

BIODIVERSITY OF THE KAMA REGION: FAUNA

During the interactive tour, you will get to know the basic mammals and birds of the region. Using data charts and the instructor's guidance, they will be finding out whether the region is the habitat for a particular species.

BIRDING

You are going to watch birds in their natural habitat: on the ponds of Pikhtovka fishing farm - one of the most densely populated ornithological spots in Udmurtia. The place hosts up to 170 bird species. During the trip you will meet the feathered diversity of Pikhtovka, learn how to use binoculars and define bird species with help of field guide.



Alsu Semakina, Candidate of Geography

Interests: ecological monitoring, air contamination, mapping

MONITORING OF NATURAL ENVIRONMENTS

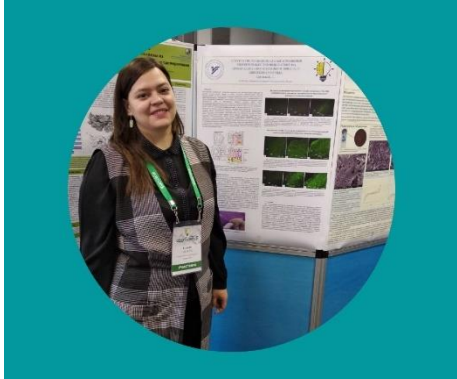
Subject of research: level of natural air, water and soil pollution, state of flora and fauna

Research methods: sampling and analysis of natural air, water and soil; assessment of degradation factor of plant community and wildlife on a monitoring site.

Learning outcomes: you will get basic knowledge required to conduct the environmental state assessment. You will acquire skills of samples drawing and analysis. Based on the results of the tests you will be able conclude about the sustainability of the environment.

Equipment: gas analyzer ГАНК-4 (to measure air chemical contamination), meteoscope-M (to measure the microclimatic parameters), noise meter АССИСТЕHT СИU (to measure the level of noise pollution), eco-tester «СозК 3» (to measure radiation level), ph-meter (to measure soil and water acidity)

Monitoring site: UdSU, green zone near Zenit stadium.



Kseniia Sergeeva, master student majoring in ‘Cell biology’

Interests: cell biology, microscope techniques, neurodegeneration processes (Parkinson disease in particular)

TRIP TO MICROCOSM

You will learn about the design of modern light microscope, how to use it. You will make micro-photos of specimens with help of a digital microscope. The class will equip you with the basic knowledge of cellular texture of organisms representing different kingdom of wildlife, i.e. bacteria, fungi, plant and animal tissues. You will learn how to prepare objects for biological research with light microscope, and you will make your own temporary slide mounts.



Olga Druzhakina, candidate of engineering sciences, associate professor, Department of Engineering Protection of Environment

Interests: development of water treatment systems, technologies of waste water treatment, ecological audit of environmental engineering and water management projects

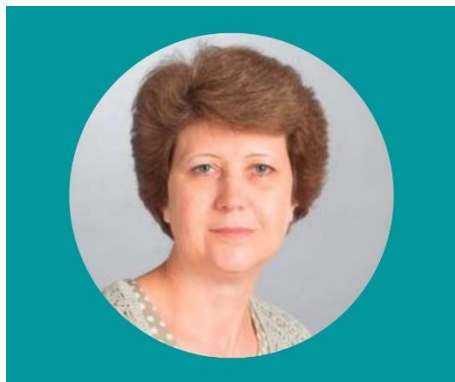
SEPARATE COLLECTION OF WASTE IN UDMURTIA (workshop «Making Eco souvenirs»)

Our class will take place in the first Eco-home of Izhevsk city which was opened just this March.

We will be cover the following topics:

1. Planning of separate waste collection: what to start with and why we need it. I will share with you the experience of the Udmurt Republic in the separate collection of waste, show you goods produced locally from recycled materials.
2. Responsible consumption as a way to reduce negative effects on the environment. How each of us can contribute. How not to buy waste at supermarkets. The rules of responsible behavior and lifehacks for everyday use.
3. Big discussion about ecological volunteering and the importance of building ecological ethics of the young generations.

For your hands-on experience we are going to decorate eco-bags which will hopefully substitute plastic bags. Some types of plastic are non-degradable; yet, bags made of them are dumped and contaminate our environment.



Irina Bukharina, Doctor of Biology, Professor, Director of the UdsU Institute of Civil Defense

Interests: development of biotechnological methods of plant tolerance management; use of mycorrhizal fungi and bacteria in phytoremediation of technogenically disturbed lands; functional state of woody plants in technogenic environment

ENVIRONMENTAL BIO TECHNOLOGIES

You will learn which biotechnologies are regarded as ecological, what they are used for, why they are considered nature-conformed. We will be discussing advantages and challenges which the use of such technologies involve, experience of different countries in their development and application. We will introduce you to the research performed in our “Ecological Biotechnologies” laboratory by UdsU young researchers and show you the results of their experiments where they infest (inoculate) plants with partner-mushrooms to increase their resistance.

In our workshop you will get a first-hand experience of modern microbiological research: you will study different mushroom species, prepare nutrient solution for their cultivation, see how we inoculate plants with mushrooms, what the roots of a plant look like after they have been infected with mushrooms, and, most importantly, how such plants are able to grow in extreme conditions.



Valeriy Sidorov, Candidate of Geography, Chair, Department of Geography

Interests: economic, social and political geography

ENVIRONMENTAL PLANNING AND MANAGEMENT IN URBAN DESIGN

(Green city management)

- Prospects of sustainable management of natural resources and its feasibility
 - Environmental planning and management as one of the components of sustainable resources management
 - Essence, principles and stages of environmental planning and management
 - Basic performance indicators of environmental planning and management activities
 - Ecological forecast – how reliable is it?
 - What are ‘urban territories and urban landscape?’
 - Is there an ultimate definition of urban territories?
 - Urban design and the concept of ‘right’ (‘smart’) city
 - Can a ‘smart’ city appear anywhere or they require ‘smart’ population?
 - ‘Green’ urban planning of new generation
 - Enhanced comfort of urban environment as the result of green urban planning and development
 - Evaluation of comfort level of the urban environment
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