SYLLABUS-CONCEPT OF THE EDUCATIONAL COURSE

| **Name of the course** | **EU Climate Change Adaptation and Sustainable Urban Ecosystems** |
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| Course type | Multidisciplinary |
| Course visitors | Students of the Bachelor's course, 8th semester (social majors; technical majors)<br>Masters 2nd semester (social specialties; technical specialties) |
| The amount of the course | 3 ECTS credits |
| The total number of classroom hours | **46** |
| including lectures | 16 |
| seminars | 14 |
| case-stage | 16 |
| Individual work, hours | **44** |
| Prerequisites for trainees | Students will spend in average 46 of contact hours during the academic term participating in the teaching, learning and assessment processes. |
| Planned educational activities per week on average - classroom | 1 x 1 hour of lectures per week, 1 x 1 hour of seminar per week (for a typical 15-week semester) |
| Planned case studies using the cloud environment: | 1 x 1 class hour per week of online supervised collaborative learning |

**Course content**

This course will allow students to explore the sustainable development of urban ecosystems in a complex of ecological, economic and technical components. The policy of the European Green Deal (Green Deal) regarding sustainable development requires the training of personnel who can promote economic greening, turn Europe into a climate-neutral continent, improve the well-being of citizens, and protect biological diversity by solving specific applied problems within technogenically burdened urboecosystems.

The course is appointed to form students' knowledge about climate change, adapt to its negative consequences from a scientific, social and political point of view, taking into account the peculiarities of technogenically burdened regions and its natural resource base, ensure the sustainable development of urbanized territories, taking into account the direction of their production, such as enterprises of the metallurgical industry, energy complex, building industry, food production, etc.

In the process of course studying on the basis of EU green practices, theoretical and practical skills in solving problems related to the impact of climate change on the functioning of the natural and technogenical component of urban ecosystems of man-made regions will be acquired; multi-purpose nature protection measures to mitigate the consequences of climate change and ensure environmental safety of urban areas will be developed; adaptation mechanisms and stimulation of self-recovery processes of urboecosystems will be formed taking into account the global goals of sustainable development, namely, the European Green Agreement on climate measures and UN SDG 13: climate measures.

**Course results**

To understand and be able to use in practice the basic principles of environmental actions and/or environmental projects management aimed at adaptation to climate changes and increasing the environmental safety of technogenically burdened regions.

Solve problems in the field of environmental protection using generally accepted and/or standard approaches regarding EU green practices and domestic experience.

Successfully cooperate with government (national, state and local) departments and national and regional development agencies in the field of ensuring environmental safety and maintaining the stability of technogenical urban ecosystems, taking into account the economic component.

**Course plan**

Topic 1. Causes and consequences of climate change.
Topic 2. Strategy of adaptation of urban ecosystems to climate change: technological solutions, ecosystem adaptation, management and legislative approaches.
Topic 3. The experience of the EU regarding adaptation measures to reduce the impact of the negative consequences of climate change on the urban ecosystems sustainability.
Topic 4. Preparation Stages of adaptation measures regarding climate change at the level of urban ecosystems in technogenically burdened regions.
Topic 5. Implementation of WASP achievements in sustainable urboecosystems formation in the conditions of climate change.
Topic 6. Ensuring the ecological safety of urban areas in the conditions of climate change.

**Additional Information:**

This module is designed around the sustainable development of highly urbanized areas for understanding the expediency of making ethical decisions in the field of using natural resource and environmental protection while organizing production activities and business taking into account social responsibility.

Seminar classes and case studies will require students to learn collaboratively and apply the content of specific lectures to case studies, practical exercises and role-plays in a variety of contexts.

EU Adaptation to Climate Change and Sustainable Urban Ecosystems is an interdisciplinary module that will be interesting for OPP undergraduate and graduate students in natural and social sciences, engineering and architecture.