COURSE DESCRIPTION CARD - SYLLABUS

Course name
CLIMATE RESILIENT CITY

Course

Proposed by Discipline
Architecture and Urban Planning

Year/Semester
II/3, III/5

Type of studies
Doctoral School

Course offered in
English

Form of study
full-time

Requirements
elective

Number of hours

Lecture
4

Tutorials

Projects/seminars

Number of credit points

1

Lecturers

Responsible for the course/lecturer:
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Faculty of Architecture
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Responsible for the course/lecturer:

Prerequisites

Knowledge: student has a basic knowledge of climate change and contemporary civilization challenges. Understands the complexity of environmental, social, economic, legal and other conditions related to urban planning and tools for shaping urban policy.

Skills: communication skills, competence in critical analysis, ability to contribute to scientific discourse.

Social competencies: student understands the need for lifelong learning, is aware of the need for interdisciplinary research and the social role of science.

Course objective

Gaining in-depth knowledge of the principles of sustainable and interdisciplinary spatial planning and city management in the face of the climate and environmental crisis. Getting to know the latest trends in urban planning, the principles of shaping and monitoring urban policy, tools for mitigating and adapting cities to climate change, and improving their resilience and the quality of life of residents.

Presentation of examples of the implementation of the latest scientific achievements in the field of urban planning, climatology, environmental engineering and water management.

Course-related learning outcomes

Knowledge

A PhD student who graduated from doctoral school knows and understands:
1) global achievements, covering theoretical foundations as well as general and selected specific issues that are relevant to scientific disciplines studied at the doctoral school, to the extent that enables revision of existing paradigms, [P8S_WG/SzD_W01]
2) fundamental dilemmas of the contemporary civilization, [P8S_WK/SzD_W05]
3) economic, legal, ethical and other vital conditions related to scientific activity. [P8S_WK/SzD_W06]

Skills

A PhD student who graduated from doctoral school can:
1) use the knowledge from different branches of science to creatively identify, formulate and to innovatively solve complex problems or to execute research tasks, [P8S_UW/SzD_U01]
2) ransfer the results of scientific activity to the economic and social sphere. [P8S_UW/SzD_U03]

Social competences

A PhD student who graduated from doctoral school is ready to:
1) critically assess the achievements within a given scientific discipline, [P8S_KK/SzD_K01]
2) fulfilling the social obligations of researchers and creators. [P8S_KO/SzD_K04]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

PQF code	Methods for verification of learning outcomes	Assessment criteria
W01, W05, W06	Discussion related to the topic of the lecture. Written research study related to the topic of the lecture	Completeness and relevance of knowledge
U01, U03	Written research study related to the topic of the lecture	Substantive, structural and editorial correctness of the reseach study
K01, K04	Written research study related to the topic of the lecture	Critical approach to the topic and awareness of social responsibility

Programme content

1. Climate change - scenarios and economic, social and environmental consequences. Aims and tools of mitigation and adaptation.
2. City climate - specificity and threats (urban heat island and heat waves, urban flash floods, etc.).
3. Resilient city - principles of sustainable and interdisciplinary spatial planning and city management.

Urban policy.
4. Blue-green infrastructure, nature-based solutions.

Teaching methods

Lecture: multimedia presentation including illustrations and examples.

Bibliography

Basic

1. Prasad, N., Ranghieri, F., Shah, F., Trohanis, Z., Kessler, E., & Sinha, R. (2009). Climate resilient cities: A primer on reducing vulnerabilities to disasters. World Bank Publications.

2. Januchta-Szostak, A. (2020). River-friendly cities, Peter Lang, Berlin.

3.Dolman, N. (2021). Integration of water management and urban design for climate resilient cities. In Climate Resilient Urban Areas (pp. 21-43). Palgrave Macmillan, Cham.

Additional

1. IPCC reports

2. Bahri, A. (2015). Integrated urban water management. Global Water Partnership, Stockholm, DOI: 10.13140/RG.2.1.4187.0160.

3.Nik, V. M., Perera, A. T. D., & Chen, D. (2021). Towards climate resilient urban energy systems: a review. National Science Review, 8(3), nwaa134.

4. Bigio, A. G., Ochoa, M. C., & Amirtahmasebi, R. (2014). Climate-resilient, Climate-friendly world heritage cities.

5. Kundzewicz, Z.W., Hegger, D.L.T., Matczak, P., Driessen P.P.J., Flood-risk reduction: Structural measures and diverse strategies. PNAS (Proceedings of the Nation-al Academy of Sciences of the United States of America) 115(49): 12321-12325 Published: DEC 4 2018

6. Yamagata, Y., & Sharifi, A. (2018). Resilience-oriented urban planning. Lecture Notes in Energy, (65).

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,0
Classes requiring direct contact with the teacher	4	0,2
Student's own work (literature studies, project preparation, consultations with the teacher) [1]	21	0,8

[1] delete or add other activities as appropriate