



COURSE DESCRIPTION CARD - SYLLABUS

Course name

RESILIENT CITIES FACING THE CLIMATE AND ENVIRONMENTAL CRISIS [S5AIU>RMWKKS]

Course

Proposed by Discipline

—

Year/Semester

2/4

Level of study

Doctoral School

Course offered in

English

Form of study

full-time

Requirements

elective

Number of hours

Lecture

4

Laboratory classes

0

Other

0

Tutorials

0

Projects/seminars

0

Number of credit points

1,00

Coordinators

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Lecturers

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 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].

Skills:

A PhD student 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].

Social competencies:

A PhD student is ready to:

1) critically assess the achievements within a given scientific discipline, [P8S_KK/SzD_K01].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Methods for verification of learning outcomes:

Discussion related to the topic of the lecture.

Written research study related to the topic of the lecture.

Assessment criteria:

Completeness and relevance of knowledge. Substantive, structural and editorial correctness of the research study. Critical approach to the topic.

Programme content

The course curriculum covers the IPCC and IPBES Global Assessment Reports, scenarios and impacts of climate and environmental change, the specific nature of urban climate and urban ecosystems, as well as opportunities for mitigation and adaptation. The primary goal is to build urban resilience. This course provides basic information on the principles of sustainable and interdisciplinary spatial planning and urban water management in the face of the climate and environmental crisis.

Course topics

1. Climate and environmental change – scenarios, interconnections, and consequences. Goals and tools for climate change mitigation and adaptation, and urban environmental regeneration.
2. Urban climate – specific characteristics and threats (urban heat islands and heatwaves, urban flash floods, etc.). Urban ecosystems – threats and ecosystem services.
3. Resilient cities – principles of sustainable and interdisciplinary spatial planning and urban management. Urban resilience strategies and adaptation plans integrated with urban policy.
4. Solutions to climate change: nature-based, technological, social, and integrated.

Teaching methods

Lecture: multimedia presentation, inclusive discussion, individual research study

Bibliography

Basic:

IPCC, 2022: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. Cambridge University Press, Cambridge, UK and New York, NY, USA, 3056 pp., doi:10.1017/9781009325844.

IPCC, 2022: Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem (eds.)]. In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3-33, doi:10.1017/9781009325844.001.

Januchta-Szostak A., River-friendly cities. Peter Lang, Berlin, Bern, Bruxelles, New York, Oxford,

Additional:

European Commission: Directorate-General for Research and Innovation, Hedegaard, C., Mysiak, J., Lera St. Clair, A., Scicluna Bartoli, M. et al., A climate resilient Europe – Prepare Europe for climate disruptions and accelerate the transformation to a climate resilient and just Europe by 2030, Publications Office, 2020, <https://data.europa.eu/doi/10.2777/69766>

Climate-ADAPT: sharing adaptation knowledge for a climate-resilient Europe, <https://climate-adapt.eea.europa.eu/en>

Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), <https://www.ipbes.net/> IPBES (2024). Summary for Policymakers of the Thematic Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. O'Brien, K., Garibaldi, L., Agrawal, A., Bennett, E., Biggs, R., Calderón Contreras, R., Carr, E., Frantzeskaki, N., Gosnell, H., Gurung, J., Lambertucci, S., Leventon, J., Liao, C., Reyes García, V., Shannon, L., Villasante, S., Wickson, F., Zinngrebe, Y., and Perianin, L. (eds.). IPBES secretariat, Bonn, Germany. DOI: <https://doi.org/10.5281/zenodo.11382230>.

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	4	0,00
Doctoral student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation)	21	1,00