Course title:	Development, maintenance and socio-economic context of blue-green infrastructure in cities
Course title in Polish:	Tworzenie, utrzymanie oraz społeczno-ekonomiczny wymiar błękitno-zielonej infrastruktury w miastach
Course for discipline:	envronmental engineering, mining and energetics, agriculture and horticulture, economy and finances, forestry, biology

Semester:	3	**Status of course:**	faculty	**Language:**	english
Academic year:		**Catalog number:**			

Coordinator of course:	Daria Sikorska
Lecturer od course:	Nina Drejerska, Arkadiusz Przybysz, Agnieszka Bańkowska-Sobczak, Daria Sikorska
Executing unit:	Centre for Climate Research
Ordering unit:	Doctoral School SGGW
Assumptions, goals and description of the course:	This course introduces the interdisciplinary field of blue-green infrastructure (BGI) in urban environments, with a focus on ecological, socio-economic, and governance dimensions. Students will explore how BGI contributes to urban resilience, climate adaptation, and sustainable development, using Warsaw as a primary case study. Through selected readings and discussions, the course offers insight into both global achievements and local practices, enabling participants to understand and critically evaluate current paradigms and development trends. Grounded in ecological science and urban economics, the course supports students in assessing scientific research and expert practice in shaping BGI implementation. Emphasis is placed on interdisciplinary collaboration, critical reflection, and independent thinking. Students will engage with diverse perspectives to address complex urban challenges and explore the role of nature-based solutions within circular economy models. Example lecture topics: (1) Blue-Green Infrastructure in Urban Planning: Concepts, Functions, and Contested Paradigms (2) Ecosystem Services and Urban Resilience: Ecological Foundations of BGI (3) Financing and Maintaining BGI: Economic Instruments, Costs, and Benefits (4) Circular Economy and BGI: Closing Resource Loops in Urban Water and Land Systems (5) Case Study: Transforming Warsaw's Infrastructure – Lessons from Practice and Policy
Didactic form, number of hours:	classes, 10
Teaching methods:	case study, brain storming, team work, lecture, discussion
Limit of people in the group:	15

Learning outcomes

KNOWLEDGE - the graduate knows and understands:	**SKILLS - the graduate is able to:**	**COMPETENCES - the graduate is ready to:**
To the extent enabling to revise the existing pradigms in the field/discipline - the world achievments, gathering theoretical background as well as general and selected detailed issues	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	Critically evaluate the achievments in the field/discipline represented
Major general development trends in the field/discipline		Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect
		Support the ethos of scientific circles and conduct independent research

The method of verification of learning outcomes:	project
Form of documentation of achieved learning outcomes:	project archiving, EHMS, attendance list
Elements and weights of the final grade:	project assesment 80%, individual activity during classes 20%
Place of the course:	SGGW campus, study visits if possible

Basic and supplementary literature

1. Van Eynde, R., Greenford, D. H., O'Neill, D. W., & Demaria, F. (2024). Modelling what matters: How do current models handle environmental limits and social outcomes? Journal of Cleaner Production, 476, 143777. https://doi.org/10.1016/j.jclepro.2024.143777
2. Tanguay, G. A., Rajaonson, J., Lefebvre, J.-F., & Lanoie, P. (2010). Measuring the sustainability of cities: An analysis of the use of local indicators. Ecological Indicators, 10(2), 407–418. https://doi.org/10.1016/j.ecolind.2009.07.013
3. Hansen, R., & Pauleit, S. (2014). From multifunctionality to multiple ecosystem services? A conceptual framework for multifunctionality in green infrastructure planning. Ambio, 43(4), 516–529. https://doi.org/10.1007/s13280-014-0510-2
4. Gómez-Baggethun, E., & Barton, D. N. (2013). Classifying and valuing ecosystem services for urban planning. Ecological Economics, 86, 235–245. https://doi.org/10.1016/j.ecolecon.2012.08.019

Comments:	Students of all semesters of Doctoral School are encouraged to join the course.

Estimated number of hours of work of the doctoral student necessary to achieve the assumed learning outcomes:	25

Leraning outcomes reference to the second degree characteristics of the National Qualification Framework (level 8) covering doctoral competences:

Symbol:	**Learning outcomes:**	**8 level NQF**
SD1_KW01	To the extent enabling to revise the existing pradigms in the field/discipline - the world achievments, gathering theoretical background as well as general and selected detailed issues	P8S_WG

SD1_KW02	Major general development trends in the field/discipline	P8S_WG
SD1_KU05	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	P8S_UW
SD1_KK01	Critically evaluate the achievments in the field/discipline represented	P8S_KK
SD1_KK03	Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect	P8S_KK
SD1_KK08	Support the ethos of scientific circles and conduct independent research	P8S_KR