Course title:	Nature-Based Bioeconomy: Policy, Management, and Environmental Restoration
Course title in Polish:	Biogospodarka oparta na naturze: uwarunkowania polityczne, zarządzanie i odtwarzanie środowiska
Course for discipline:	envronmental engineering, mining and energetics, agriculture and horticulture, economics and finances, forestry, biology

Semester:	6	**Status of course:**	faculty	**Language:**	english
Academic year:	2027/28	**Catalog number:**	124/2025/26		

Coordinator of course:	Nina Drejerska
Lecturer od course:	Nina Drejerska, Mateusz Grygoruk, Axel Schwerk, Arkadiusz Przybysz, Agnieszka Bańkowska-Sobczak, Daria Sikorska, Hanna Moniuszko, Robert Popek
Executing unit:	Centre for Climate Research
Ordering unit:	Doctoral School SGGW
Assumptions, goals and description of the course:	The aim of the course is to familiarize students with contemporary trends in environmental management, taking into account economic, political and legislative conditions. During an interdisciplinary course covering several scientific disciplines (environmental engineering, economics and finance, forestry, agriculture and horticulture, and biology), students will gain cross-cutting knowledge that will broaden their horizons. Course topics: (1) Sustainable development – perspectives and challenges, (2) Basics of the bioeconomy (including the circular bioeconomy), (3) Principles and methods of ecosystem restoration, (4) Stakeholders in the environmental management process (possible simulation game), (5) Nature-based Solutions – ideas, examples and effectiveness assessment, (6) How to measure development progress? From GDP to wellbeing-based approaches and new indicators supporting public decision-making, (7) Environmental limits to development and the regenerative approach (including the "doughnut economics" framework) as a context for contemporary environmental management. Upon completion of the course, the student is expected to embed his/her scientific approach in a broad contemporary social, economic and environmental context.
Didactic form, number of hours:	15 hours
Teaching methods:	case study, brain storming, team work, lecture, discussion, possible simulation game
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:	essay
Form of documentation of achieved learning outcomes:	essay archiving, EHMS, attendance list
Elements and weights of the final grade:	essay 80%, individual activity during classes 20%
Place of the course:	SGGW campus

Basic and supplementary literature

J.C.J.M. Van den Bergh & G. Kallis, 2012. Growth, A-Growth or Degrowth to Stay within Planetary Boundaries? Journal of Economic Issues 46(4):909-920
DOI: 10.2753/JEI0021-3624460404 ;
IUCN, 2020. Global Standard for Nature based Solutions. A user-friendly framework for the verification, design and scaling up of NbS;
Lanzerath D., Schurr U., Pinsdorf Ch., Stake M. (Eds.), 2023. Bioeconomy and Sustainability. Perspectives from Natural and Social Sciences, Economics and Ethics. Springer Cham. Handbook on the Bioeconomy, Edited by Davide Viaggi, 2025, Edward Elgar Publishing;
Raworth, K. (2025), The Evolving Doughnut. Doughnut Economics Action Lab, Oxford. https://doi.org/10.64981/XGRX2738;
McCartney, G., Büchs, M., Hensher, M., & Mazzei, M. (2025). What is a Wellbeing Economy, and what might its impact be on population health? PubMed, 10(10), e879–e889. https://doi.org/10.1016/s2468-2667(25)00192-6

Comments:	

Estimated number of hours of work of the doctoral student necessary to achieve the assumed learning outcomes:	30

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