University of Gdańsk

Subject card

Subject name and code	Water Protection and Restoration, PG_00174305						
Field of study	Physical geography and geoinformation						
Date of commencement of studies	October 2025		Academic year of realisation of subject	2026/2027			
Education level	Master's studies		Subject group	Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study			
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	2		Language of instruction	English			
Semester of study	3		ECTS credits	2.0			
Learning profile	academic		Assessment form	credit			
Conducting unit	Centrum Monitoringu i Ochrony Wód -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Julita Dunalska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	15		5.0		30.0	50
Subject objectives	Familiarization with the problems of water protection and restoration; preparation to take action to improve water quality.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GFGMU2_U07] efficiently perform, present and discuss the results of individual or group research, using a properly understood cause-and-effect sequence of the applied research procedure, visualizing the results of spatial data analysis and reliably documenting own contribution to the conducted procedure	Has the ability to analytical and synthetic reasoning the obtained environmental data and on their basis propose methods of restoration. Understands the opportunities and threats to the implementation of the proposed activities.	[SU1] oral statement/conversation/ discussion [SU5] implementation of a problem task
[GFGMU2_W02] issues in the field of exact sciences enabling the understanding of complex processes and phenomena occurring in the Earth's natural environment, and in their interpretations consistently relay on empirical foundations, using qualitative and quantitative methods	Knows and understands the phenomena and processes occurring in surface waters; has knowledge of the principles of lake protection and restoration; defines methods for the water resources restoration.	[SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
[GFGMU2_K02] active actions to raise awareness of changes occurring in the natural environment and their consequences, as well as initiating activities for the protection of the natural environment	When inferencing, it demonstrates the attitude of conscious and reliable assessment of the impact of human activities on the aquatic environment.	[SK1] oral statement/conversation/ discussion

Subject contents

- Challenges and opportunities of aquatic ecosystems protection.

- Methods and techniques of water protection and restoration (presentation of solutions implemented in New Zealand, Australia, Florida U.S. and Poland).

- The concept of modern water protection and restoration in accordance with "Nature-Based Solutions" and "Circular Economy".

- The role of "Citizen Science" in the planning of conservation and restoration activities.

Prerequisites and co-requisites

Knowledge of English

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
After confirming the implementation of learning outcomes, the student obtains a grade depending on the score obtained (51-60% - 3.0; 61-70% - 3.5; 71-80% - 4.0; 81-90% - 4.5; 91-100% - 5.0).	51.0%	100.0%

Recommended reading

Basic literature	- Cooke G. D., E. B. Welch, S. A. Peterson, S. A. Nichols. 2005. Restoration and management of lakes and reservoirs. Third edition. Boca Raton: Taylor&Francis.
Supplementary literature	- Abell J. 2018. Ecofish - shallow lakes restoration review - final shallow lakes: A literature review. Waikato Regional Council Technical Report, 13. - Hamilton D.P, Dada A. 2016. Lake management: A restoration perspective. In: Advances in New Zealand Freshwater Science. Jellyman PG, Davie TLA, Pearson CP, Harding JS (Eds.). New Zealand Freshwater Sciences Society and New Zealand Hydrological Society Publishers, 531-552. - Jeppesen E., Søndergaard M., Jensen H.S., Ventäla A-M. 2009. Lake and reservoir management. Encyclopedia of Inland Waters, 295-309. - Klapper H. 2003. Technologies for lake restoration. J. Limnol., 62(1): 73-90.
eResources addresses	

Example issues/ example questions/ tasks being completed	Analysis of lake restoration techniques
Work placement	Not applicable

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