University of Gdańsk

Subject card

Subject name and code	Freshwater biodiversity and protection, PG_00189316		
Field of study	Biology		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
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	1	Language of instruction	Polish
Semester of study	2	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Faculty of Biology -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Tadeusz Namiotko	
	Teachers	prof. dr hab. Tadeusz Namiotko	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	30.0	0.0	0.0	0.0	30

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	30	4.0	16.0	50

Subject objectives

1. Knowledge of the general taxonomic diversity and the main threats to biodiversity in inland waters.
2. Ability to identify common plant and animal species found in aquatic ecosystems.
3. Introduction to methods of aquatic environment assessment based on phyto- and zoobenthos.
4. Ability to assess aquatic ecosystems on the basis of the characteristics of the abiotic environment and the structure of biocoenoses.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLMU2_W01] the graduate has an in-depth knowledge and understanding of natural phenomena and processes at different levels of complexity	The graduate understands the basic assumptions of the use of bioassays in relation to water quality assessment and critically evaluates the different systems used to assess the aquatic environment. The graduate has knowledge of the general taxonomic diversity of inland waters and knows how to measure it and is aware of threats and ways to protect freshwater biodiversity.	[SW4] test/exam - oral or written
[BIOLMU2_K02] the graduate is ready to work effectively as a member of a team and to comply with the rules of teamwork and take responsibility for the tasks performed	The graduate works in a small team during data collection, analysis of results and formulation of conclusions. He/she is responsible for his/her own work and follows the rules of teamwork. Discusses and poses questions on contemporary problems of quality assessment and protection of aquatic ecosystems and understands the need to update this knowledge.	[SK8] observation of student's independent or team work
[BIOLMU2_U04] the graduate is able to plan and carry out independently or in a team research tasks or expertises in the field of the studied biological speciality	The graduate is able to make independently a basic assessment of freshwater quality. Can present the results of own research work and evaluate it critically.	[SU3] text preparation/written work [SU8] observation of student's independent or team work
[BIOLMU2_U07] the graduate is able to critically confront biological information from a variety of sources and, on this basis, draw valid conclusions	The graduate analyses and correctly interprets the basic problems of freshwater conservation based on acquired knowledge.	[SU3] text preparation/written work

Subject contents

Species richness of plant and animal organisms living in inland waters. Threats to freshwater biodiversity. Adaptations of animals to life in subterranean waters. Phyto- and zoobenthos survey methods. Overview of the most important groups of organisms used in assessing the status of inland water quality. Water quality assessment systems, methods for assessing the susceptibility of lakes to degradation.

Prerequisites and co-requisites

Knowledge of basic general ecology and plant and animal systematics will be useful.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
reports	51.0%	25.0%
written exam test	51.0%	75.0%

Recommended reading

Basic literature	Kolada A. (red.). 2020. Podręcznik do monitoringu elementów biologicznych i klasyfikacji stanu ekologicznego wód powierzchniowych. Aktualizacja metod. Biblioteka Monitoringu Środowiska, Warszawa. Podbielkowski Z., Tomaszewicz H. 1996. Zarys hydrobotaniki. PWN, Warszawa. Szmeja J. 2006. Przewodnik do badań roślinności wodnej. Wyd. Uniw. Gdańskiego, Gdańsk. Kryska G. 2013. Freshwater invertebrates in Central Europe. A field guide. Springer-Verlag, Wiedeń
Supplementary literature	Dambska I. 1964. Flora słodkowodna Polski. Charophyta ramienice. PWN, Warszawa. Jones I.D., Smol J.P. 2024. Wetzel's Limnology: Lake and River Ecosystems, Fourth Edition. Academic Press, Elsevier. Pełechaty, M., Pukacz, A., 2008. Klucz do oznaczania ramienic jezior i rzek. Inspekcja Ochrony Środowiska. Biblioteka Monitoringu Środowiska, Warszawa.
eResources addresses	

Example issues/ example questions/ tasks being completed

Work placement

Not applicable

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