University of Gdańsk

Subject card

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| Subject name and code | Freshwater biodiversity and protection, PG_00207333 | | |
| Field of study | Biology | | |
| Date of commencement of studies | October 2026 | Academic year of realisation of subject | 2026/2027 |
| Education level | Master's studies | Subject group | Obligatory subject group in the field of study<br>Optional subject group<br>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 | | |

| 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 |

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| Subject objectives | 1. Knowledge of the general taxonomic diversity and the main threats to biodiversity in inland waters.<br>2. Ability to identify common plant and animal species found in aquatic ecosystems.<br>3. Introduction to methods of aquatic environment assessment based on phyto- and zoobenthos.<br>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] has a deep knowledge and understanding of natural phenomena and processes at various 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.<br>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_U07] is able to critically compare biological information from various sources and draw justified conclusions on this basis | The graduate analyses and correctly interprets the basic problems of freshwater conservation based on acquired knowledge. | [SU3] text preparation/written work |
| [BIOLMU2_U04] is able to plan and carry out complex research tasks or expert opinions in the field of the biological specialty studied, independently or in a team, also in changing and unforeseen conditions | 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<br>[SU8] observation of student's independent or team work |
| [BIOLMU2_K02] is ready to work effectively as a team member and to comply with the rules of teamwork and take responsibility for the tasks carried out | 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 |

**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**

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| Basic literature | Kolada A. (red.). 2020. Podręcznik do monitoringu elementów biologicznych i klasyfikacji stanu ekologicznego wód powierzchniowych. Aktualizacja metod. Biblioteka Monitoringu Środowiska, Warszawa.<br>Podbielkowski Z., Tomaszewicz H. 1996. Zarys hydrobotaniki. PWN, Warszawa.<br>Szmeja J. 2006. Przewodnik do badań roślinności wodnej. Wyd. Uniw. Gdańskiego, Gdańsk.<br>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.<br><br>Jones I.D., Smol J.P. 2024. Wetzel's Limnology: Lake and River Ecosystems, Fourth Edition. Academic Press, Elsevier.<br><br>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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