

## Subject card

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                          |                                         |                                     |         |                                                                                                                      |     |
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| Subject name and code                       | Biodiversity/ Biological variety, PG_00103636                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                          |                                         |                                     |         |                                                                                                                      |     |
| Field of study                              | Environmental Protection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                          |                                         |                                     |         |                                                                                                                      |     |
| 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<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                         |                                     |         |                                                                                                                      |     |
| Conducting unit                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                          |                                         |                                     |         |                                                                                                                      |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                          | dr hab. Przemysław Baranow              |                                     |         |                                                                                                                      |     |
|                                             | 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                                                       |                                         | 2.0                                 |         | 33.0                                                                                                                 | 50  |
| Subject objectives                          | To learn the definition of biodiversity (at the intra-species, species and ecosystem level), methods of measuring species diversity, factors (anthropogenic and natural) affecting biodiversity, threats to biodiversity and ways to protect it. To learn about the diversity and variability of living organisms with particular emphasis on national flora and fauna species of economic, sanitary, bioindication, protected, extinct or endangered, and key species in the functioning of ecosystems (examples) |                                                          |                                         |                                     |         |                                                                                                                      |     |

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| Learning outcomes               | Course outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Subject outcome                                                                                                                                                                                   | Method of verification            |
|                                 | [OŚMU2_U01] On the basis of the acquired knowledge, proposes to solve environmental problems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Student knows how to plan and carry out field surveys using appropriate methods used in the study of fauna and flora and interpret the results in terms of their conservation                     | [SU4] test/exam - oral or written |
|                                 | [OŚMU2_K02] Recognises threats, creates safe work conditions and is responsible for the safety of own and other people's work.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Recognizes hazards, creates conditions for safe work and takes responsibility for the safety of his own work and that of others                                                                   | [SK4] test/exam - oral or written |
|                                 | [OŚMU2_W06] Analyses the impact of human activities on biodiversity and environmental quality on a local, regional and global scale.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | The student describes and analyzes the impact of human activities on the diversity of organisms at the local, regional and global scales                                                          | [SW4] test/exam - oral or written |
|                                 | [OŚMU2_W03] Characterises the effects of human interference in the natural environment and explains the mechanisms of reaction of living organisms to its pollution.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Student knows the effects of human interference with the natural environment (including those resulting from environmental pollution) and the resulting changes in flora and fauna                | [SW4] test/exam - oral or written |
|                                 | [OŚMU2_W04] Chooses methods, techniques and research tools used in environmental protection.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | By selecting appropriate methods, techniques and research tools, the student describes the diversity of the flora and fauna of Poland and the complex phenomena and processes occurring in nature | [SW4] test/exam - oral or written |
| Subject contents                | Definition of biodiversity, levels at which it is considered, ways to determine the degree of biodiversity, factors affecting the degree of biodiversity (including anthropogenic), threats and ways to protect biodiversity. Review of selected groups of microorganisms, fungi, plants and animals occurring in Poland, including extinct, endangered, protected species, having bioindication significance or invasive. Methods for quantitative assessment of species diversity.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                   |                                   |
| Prerequisites and co-requisites | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                   |                                   |
| Assessment methods and criteria | Subject passing criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Passing threshold                                                                                                                                                                                 | Percentage of the final grade     |
|                                 | Test exam                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 51.0%                                                                                                                                                                                             | 100.0%                            |
| Recommended reading             | <p>Basic literature</p> <p>Maćkowiak M., Michalak A. (red.) 2008. Biologia: jedność i różnorodność. Warszawa. (wybrane rozdz.)</p> <p>Pławiłszczikow N. 1972. Klucz do oznaczania owadów. PWRiL, Warszawa.</p> <p>Rutkowski L. 2008. Klucz do oznaczania roślin naczyniowych Polski Niżowej. Wyd. Nauk. PWN, Warszawa.</p> <p>Rybak J. I. 2001. Przewodnik do rozpoznawania niektórych bezkręgowych zwierząt słodkowodnych, PWN, Warszawa.</p> <p>Szafer W., Kulczyński S., Pawłowski B. 1988. Rośliny polskie. PWN, Warszawa.</p> <p>Szwejkowska A., Szwejkowski J. 2009. Botanika. Tom 1 i 2. PWN, Warszawa. (wybrane rozdz.)</p> <p>A.2. studiowana samodzielnie przez studenta:</p> <p>Andrzejewski R., Weigle A. 2003. Różnorodność biologiczna Polski. Narodowa Fundacja Ochrony Środowiska., Warszawa.</p> <p>Bogdanowicz W., Chudzicka E., Pilipiuk I., Skibińska E. [red.] 2004, 2007, 2008, 2014. Fauna Polski charakterystyka i wykaz gatunków. T I-IV</p> <p>Muzeum i Instytut Zoologii PAN, Warszawa.</p> <p>Głowaciński Z. 2001 [red.] Polska czerwona księga zwierząt. Kręgowce. PWRiL, Warszawa</p> <p>Głowaciński Z., Nowacki J. [red.] 2005. Polska czerwona księga zwierząt. Bezkręgowce. Instytut Ochrony Przyrody PAN, Kraków i Akademia</p> <p>Rolnicza im. A. Cieszkowskiego, Poznań.</p> <p>Müller E., Loeffler W. 1987. Zarys Mykologii. PWRiL, Warszawa.</p> <p>Rothmaler W., Jäger E., Werner K. 2007. Exkursionsflora von Deutschland. Gefäßpflanzen: Atlasband. Spektrum Akademischer Verlag, München.</p> <p>Szafer W., Zarzycki K. (red.) 1977. Szata roślinna Polski. T. 1-2. PWN, Warszawa.</p> <p>Szwejkowska A., Szwejkowski J. 2016. Botanika. Tom 1 i 2. PWN, Warszawa.</p> |                                                                                                                                                                                                   |                                   |

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|                                                                | Supplementary literature | Garbarczyk H. (red.) 1983. Świat zwierząt. PWRiL, Warszawa.<br>Weiner J. 2020. Życie i ewolucja biosfery. PWN.<br>Wilson E. O. 1999. Różnorodność życia. PIW, Warszawa.<br>Wszalek-Rożek K., Lazarus M., Afranowicz-Cieślak R., Gołębiewska J., Kuczyńska A., Jarosińska M., Eichmann A., Markowski R. 2018. Endangered flora of Gdańsk Pomerania - its distinctiveness and diversity. Biodiversity: Research and Conservation, vol. 50, p. 53-60. |
|                                                                | eResources addresses     | Adresy na platformie eNauczanie:                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Example issues/<br>example questions/<br>tasks being completed |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Work placement                                                 | Not applicable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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