

## Subject card

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                          |                                                                                                                                                                                                   |                                     |                                                                                   |            |     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------|------------|-----|
| Subject name and code                       | Geographical information systems, PG_00154332                                                                                                                                                                                                                                                                                                                                                                         |                                                          |                                                                                                                                                                                                   |                                     |                                                                                   |            |     |
| Field of study                              | Natural Resources Conservation                                                                                                                                                                                                                                                                                                                                                                                        |                                                          |                                                                                                                                                                                                   |                                     |                                                                                   |            |     |
| Date of commencement of studies             | October 2024                                                                                                                                                                                                                                                                                                                                                                                                          |                                                          | Academic year of realisation of subject                                                                                                                                                           |                                     | 2024/2025                                                                         |            |     |
| Education level                             | undergraduate studies                                                                                                                                                                                                                                                                                                                                                                                                 |                                                          | Subject group                                                                                                                                                                                     |                                     | Obligatory subject group 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                           | 1                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                          | ECTS credits                                                                                                                                                                                      |                                     | 1.0                                                                               |            |     |
| Learning profile                            | academic                                                                                                                                                                                                                                                                                                                                                                                                              |                                                          | Assessment form                                                                                                                                                                                   |                                     |                                                                                   |            |     |
| Conducting unit                             | Katedra Taksonomii Roślin i Ochrony Przyrody -> Faculty of Biology                                                                                                                                                                                                                                                                                                                                                    |                                                          |                                                                                                                                                                                                   |                                     |                                                                                   |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                                                                                                                                                                    |                                                          | dr Magdalena Lazarus                                                                                                                                                                              |                                     |                                                                                   |            |     |
|                                             | Teachers                                                                                                                                                                                                                                                                                                                                                                                                              |                                                          | dr Magdalena Lazarus                                                                                                                                                                              |                                     |                                                                                   |            |     |
| 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                                 |                                                                                   | 8.0        | 25  |
| Subject objectives                          | Familiarization with Geographic Information Systems (GIS) and the possibilities of their practical use in the work of a naturalist.                                                                                                                                                                                                                                                                                   |                                                          |                                                                                                                                                                                                   |                                     |                                                                                   |            |     |
| Learning outcomes                           | Course outcome                                                                                                                                                                                                                                                                                                                                                                                                        |                                                          | Subject outcome                                                                                                                                                                                   |                                     | Method of verification                                                            |            |     |
|                                             | [OZPL3_U07] The graduate is able to draw correct conclusions on the basis of analysis and synthesis of data from various sources                                                                                                                                                                                                                                                                                      |                                                          | The student analyzes and synthesizes data from various sources (botanical, zoological, habitat properties, distribution of protected areas data) and draws appropriate conclusions on this basis. |                                     | [SU1] oral statement/conversation/discussion                                      |            |     |
|                                             | [OZPL3_W10] The graduate possesses a comprehensive understanding of current issues in biology and related fields                                                                                                                                                                                                                                                                                                      |                                                          | The student presents and describes contemporary problems in biology and disciplines related such as cartography and computer science.                                                             |                                     | [SW4] test/exam - oral or written<br>[SW1] oral statement/conversation/discussion |            |     |
|                                             | [OZPL3_W12] The graduate possesses knowledge of statistical methods and IT tools relevant to the field of study.                                                                                                                                                                                                                                                                                                      |                                                          | The student has knowledge of the use of IT tools for introducing, collecting, processing and visualizing nature spatial data.                                                                     |                                     | [SW4] test/exam - oral or written                                                 |            |     |
|                                             | [OZPL3_K01] The graduate is ready to recognise the limitations in his/her own knowledge and understands the need for continuous learning and development                                                                                                                                                                                                                                                              |                                                          | The student knows the limits of their own knowledge and understands the need for constant learning and development.                                                                               |                                     | [SK1] oral statement/conversation/discussion                                      |            |     |
| Subject contents                            | Definition and properties of maps, including digital maps. Geographic coordinate systems and cartographic projections. Methods of preparing maps and presenting natural data. Spatial data models and sources of data acquisition. ArcGIS software modules and their use. Selection of visualization methods. Basic functions of vector and raster data analysis. The use of Landsat satellite images in nature work. |                                                          |                                                                                                                                                                                                   |                                     |                                                                                   |            |     |
| Prerequisites and co-requisites             |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                          |                                                                                                                                                                                                   |                                     |                                                                                   |            |     |

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| Assessment methods and criteria                                | Subject passing criteria                                                                                | Passing threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Percentage of the final grade |
|                                                                | Written test                                                                                            | 51.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 100.0%                        |
| Recommended reading                                            | Basic literature                                                                                        | Urbański J. 2008. GIS w badaniach przyrodniczych. Wyd. UG. Gdańsk.                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |
|                                                                | Supplementary literature                                                                                | Longley P.A., Goodchild M.F., Maguire D.J., Rhind D.W. 2008. GIS Teoria i praktyka. PWN, Warszawa<br>Manikowska-Ślepówrońska B., Lazarus M., Żółkoś K., Jakubas D. 2016. Influence of landscape features on the location of grey heron Ardea cinerea colonies in Poland. Comptes Rendus Biologies 339(11-12).<br>Paślawski J. 2010. Wprowadzenie do kartografii i topografii. Wyd. Nowa Era, Warszawa.<br>Urbański J. 1997. Zrozumieć GIS. Analiza informacji przestrzennej. PWN, Warszawa. |                               |
|                                                                | eResources addresses                                                                                    | Adresy na platformie eNauczanie:                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                               |
| Example issues/<br>example questions/<br>tasks being completed | 1. Give the definition of cartographic projection.<br><br>2. What is the CORINE Land Cover project for? |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |
| Work placement                                                 | Not applicable                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |

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