

## Subject card

|                                             |                                                                                                                                                                                                                                                                              |                                                          |                                         |                                     |                                                                                                                      |            |     |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------|------------|-----|
| Subject name and code                       | Biogeography - lecture, PG_00119849                                                                                                                                                                                                                                          |                                                          |                                         |                                     |                                                                                                                      |            |     |
| Field of study                              | Geography                                                                                                                                                                                                                                                                    |                                                          |                                         |                                     |                                                                                                                      |            |     |
| Date of commencement of studies             | October 2025                                                                                                                                                                                                                                                                 |                                                          | Academic year of realisation of subject |                                     | 2025/2026                                                                                                            |            |     |
| Education level                             | Bachelor'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                             | Laboratory of Palaeoenvironmental Research -> Department of Geomorphology and Quaternary Geology -> Faculty of Oceanography and Geography -> Rector                                                                                                                          |                                                          |                                         |                                     |                                                                                                                      |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                           |                                                          | dr Sambor Czerwiński                    |                                     |                                                                                                                      |            |     |
|                                             | 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                                                       |                                         | 10.0                                |                                                                                                                      | 35.0       | 60  |
| Subject objectives                          | Biogeography is the science of the distribution of plants and animals on the Earth's surface and the historical, ecological and anthropogenic factors that are responsible. In broad terms, it is concerned with the basic processes of evolution, extinction and dispersal. |                                                          |                                         |                                     |                                                                                                                      |            |     |
|                                             | The aim of the subject is to understand the general patterns of species distribution.                                                                                                                                                                                        |                                                          |                                         |                                     |                                                                                                                      |            |     |

| Learning outcomes | Course outcome                                                                                                                                                                                                                                                                                                                                         | Subject outcome                                                                                                                                                                                                                                                         | Method of verification            |
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|                   | [GEOGRL3-W05] Has advanced knowledge of the environment Earth's geographic environment, understood as a unified system of interrelated and interacting each other's components; its diversity, functioning and dynamics of change, including the mutual interaction of environmental components in the area of South Baltic Coastal and Lake Districts | The student understands the diversity and functioning of the environment, its dynamics and the long-term human impact on ecosystems. He/she knows models and predictions about the distribution of species in relation to e.g. climate change.                          | [SW4] test/exam - oral or written |
|                   | [GEOGRL3-U03] use theoretical knowledge of geographic sciences and available sources of information to correctly interpret basic natural, social, economic and political processes                                                                                                                                                                     | The student understands the complex interactions between biogeographical and socio-economic processes and is able to use appropriate places to find such information.                                                                                                   | [SU4] test/exam - oral or written |
|                   | [GEOGRL3-W02] key concepts in geography and theories on spatial variation and distribution of processes and phenomena on the Earth's surface                                                                                                                                                                                                           | Knows and understands the key concepts of biogeography and the patterns and theories of species distribution on Earth.                                                                                                                                                  | [SW4] test/exam - oral or written |
|                   | [GEOGRL3-W06] interactions between the natural and anthropogenic environment at different spatial and temporal scales, in particular the processes and phenomena occurring in the area of the South Baltic Coastal and Lake District and the determinants of these interactions                                                                        | Students understand the relationship between nature and its anthropogenic transformation that took place in the past in various places on Earth.                                                                                                                        | [SW4] test/exam - oral or written |
|                   | [GEOGRL3-U01] identify and analyze basic natural and socio-economic processes and phenomena and analyze their causes and course                                                                                                                                                                                                                        | Students understand natural processes such as dispersal of organisms, speciation and climate change and their effects. At the same time he/she knows the basic socio-economic mechanisms of their effects on, among other things, biodiversity and ecosystem structure. | [SU4] test/exam - oral or written |
|                   | [GEOGRL3-W07] on advanced level methods of acquiring data on the natural and anthropogenic environment, including operation of specialized equipment                                                                                                                                                                                                   | Knows and understands to an advanced level the methods of acquiring data concerning the study of various aspects of the distribution of organisms on our planet.                                                                                                        | [SW4] test/exam - oral or written |
|                   | [GEOGRL3-W03] in an advanced degree the processes and phenomena occurring in the natural environment of the Earth, with particular emphasis on the processes and phenomena occurring on the territory of Poland, especially the Coastal and South Baltic Lake Districts                                                                                | - Understands advanced biogeographical processes and phenomena in the Earth's natural environment and its effects on the distribution of plant and animal ranges                                                                                                        | [SW4] test/exam - oral or written |
|                   | [GEOGRL3-W08] at an advanced level methods and principles development of data on the natural and anthropogenic environment, and methods of their analysis and interpretation                                                                                                                                                                           | .to an advanced degree, methods and principles of compiling data on the biosphere, and methods of their analysis and interpretation                                                                                                                                     | [SW4] test/exam - oral or written |

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| Subject contents                | <p>- History of biogeography. Origins of modern historical biogeography.- The fundamentals of ecological biogeography.- The relationship between biogeography and ecology. Diversity in time and space. The mechanism of evolution.- Overview of the world's terrestrial biomes.- Biogeography of the oceans.- Range, geographical barriers, ecological niche, interspecies interactions, migration, invasion.- Biogeography of islands as a natural laboratory for the study of biogeographical processes because of their isolation, limited space and specific environmental conditions.- Biogeographical characteristics of Poland.- Human impact on ecosystems at local, regional and global scales in historical perspective.</p> |                                                                                                                                                                                                                                                                                                                                       |                               |
| Prerequisites and co-requisites |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                       |                               |
| Assessment methods and criteria | Subject passing criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Passing threshold                                                                                                                                                                                                                                                                                                                     | Percentage of the final grade |
|                                 | test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 51.0%                                                                                                                                                                                                                                                                                                                                 | 100.0%                        |
| Recommended reading             | Basic literature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>Cox C.B., Moore P.D. Biogeography: An Ecological and Evolutionary Approach 8th ed. John Wiley &amp; Sons, 2010</p> <p>Lomolino M.V., Riddle B.R., Whittaker R.J., James H. Brown J.H. Biogeography 4th ed. Sinauer Associates, Inc., 2010</p>                                                                                      |                               |
|                                 | Supplementary literature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p>Parenti L.R., Ebach M.C.. Comparative Biogeography: Discovering and Classifying Biogeographical Patterns of a Dynamic Earth (Species and Systematics) University of California Press, 2009 4.</p> <p>Morrone J.J. Evolutionary Biogeography: An Integrative Approach with Case Studies 1st ed. Columbia University Press, 2008</p> |                               |
|                                 | eResources addresses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                       |                               |

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| Example issues/<br>example questions/<br>tasks being completed | Historical versus ecological biogeography                                                                                                                |
|                                                                | Phytogeography and zoogeography                                                                                                                          |
|                                                                | The achievements of the most important scientists in the field of biogeography                                                                           |
|                                                                | - Charles Linnaeus- Georges-Louis Leclerc de Buffon- Alexander von Humboldt- Charles Lyell- Charles Darwin- Alfred Russel Wallace- Alfred Lothar Wegener |
|                                                                | Geographical vicariance                                                                                                                                  |
|                                                                | Mechanism of natural selection                                                                                                                           |
|                                                                | Wallace's line                                                                                                                                           |
|                                                                | Range disjunction                                                                                                                                        |
|                                                                | Ecology - definition                                                                                                                                     |
|                                                                | Ecosystem - definition                                                                                                                                   |
|                                                                | Biocenosis, biotope                                                                                                                                      |
|                                                                | Individual, population                                                                                                                                   |
|                                                                | Species                                                                                                                                                  |
|                                                                | Population and its characteristics                                                                                                                       |
|                                                                | K and r life strategy                                                                                                                                    |
|                                                                | Natural selection and its types                                                                                                                          |
|                                                                | Radiation and introgression speciation                                                                                                                   |
|                                                                | Specialisation due to causation                                                                                                                          |
|                                                                | Ring speciesRate of speciation                                                                                                                           |
|                                                                | Ecological nicheEcological tolerance range                                                                                                               |
|                                                                | Eurybionts vs. Stenobionts                                                                                                                               |
|                                                                | Trophic levels in an ecosystem                                                                                                                           |
|                                                                | Primary production                                                                                                                                       |
|                                                                | Mimicry and mimicry                                                                                                                                      |
|                                                                | Convergence and its examples                                                                                                                             |

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|                | <p>Ecological succession</p> <p>Metapopulation</p> <p>Biomes -</p> <p>Raunkiaer life forms</p> <p>Why are plant leaves larger the closer to the equator?</p> <p>In which places (biomes) is primary production highest?</p> <p>Biodiversity and its componentsHow much land is currently directly used by humans?</p> <p>Anthropogenic biomes</p> <p>Construction of a socio-ecological niche</p> <p>Extinction of megafauna</p> <p>Biomass proportions between humans, livestock and wildlife</p> <p>Columbian exchange - what is it and how has it affected the biosphere?</p> <p>The state of the biosphere according to anthropoecology</p> <p>Geobotany</p> <p>Factors influencing the distribution of plant formations on Earth</p> <p>Biomes</p> |
| Work placement | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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