Introduction to Biogeography

Einführung in die Biogeographie

Bachelor – Winter Term (Wintersemester)
The course will be given in English if foreign students are attending

Module 7, 10 or 11	Introduction to Biogeography	study points 10

Biogeography is the study of the past, present and future geographic patterns of biological diversity, as well the complex causes of these patterns. Students will get acquainted with the scientific foundation of biogeography, including the historical and ecological foundations to understand the distribution of animals and plants, interactions between species and their environment, the world's major biomes and biogeographic regions, concepts to measure and analyze biodiversity, and the role of biodiversity for ecosystems and the services they provide. Students will learn how to read, critically reflect on, and summarize primary research literature, develop presentation skills, and learn how to work efficiently in teams. Student will also deepen and broaden their statistical, geoprocessing, and modeling skills to analyze and answer questions related to the distribution and conservation plants and animals, including their programming skills in the statistical language R.

Prerequisites: Modules M3 (Statistics) and M6 (GIS)

Type	SWS	Workload (SP)	Topics
Lecture	2	90 hours (3 SP) 25 hours in the classroom, 65 hours preparation, exercises and readings	Introduction to biogeography, including the topics: - History of biogeography - Taxonomy and systematics - Niches and ranges - Dispersal and immigration - Speciation and extinction - Island biogeography - Floristic & zoographic realms, and biomes - Concepts of biodiversity (genes, populations, species, communities; alpha-, beta-, gamma-diversity) - Role of biodiversity for ecosystem functioning and ecosystem services - Introduction to conservation biogeography
Seminar	2	150 hours (5 SP) 25 hours in the classroom, 125 hours preparation, exercises and readings	Deepening of lecture topics via reading and discussing primary literature. Introduction in the basic concepts and tools to analyze biodiversity patterns and dynamics (e.g., species-area curves, species distribution models) using the statistical programming environment R.
TEX		30 hours (1 SP) 8h excursion, 12h preparation & reporting	1 Excursion (Natural History Museum, Botanical Garden)
Final exam		30 hours (1 SP)	Exam, 90 min (1 SP) or Project report (5 pages ~ 8.000 - 10.000 characters without appendices) (1 SP) or similar requirement
Duration		☒ 1 term	☐ 2 terms
Start		☒ Winter term or	☐ Summer term