

Subject card

Subject name and code	Phylogeography, PG_00154738						
Field of study	Biology						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2026/2027		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Optional subject group		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Anna Wysocka				
	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		8.0	25
Subject objectives	Knowledge of the basic patterns (models) of the geographical distribution of genetic variation, principles and factors to which processes are subject affecting gene variability in time and space. Understanding the role of demographic processes and geographical distribution of populations in speciation models. Understanding the relationships between genealogies and geography.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[BIOLMU2_W05] the graduate understands the dynamic development of the biological sciences and is familiar with new research directions and disciplines		characterizes the relationship between phylogeny and demography; understands the relationship between phylogeography and speciation processes		[SW4] test/exam - oral or written		
	[BIOLMU2_W01] the graduate has an in-depth knowledge and understanding of natural phenomena and processes at different levels of complexity		defines the concept of phylogeography and explains its place among intermediate disciplines; explains intraspecific phylogeographic patterns		[SW4] test/exam - oral or written		
	[BIOLMU2_U01] the graduate is able to select and apply research techniques and tools appropriate to the problems of the biological sciences specialisation studied		proposes methods for analysing the spatial distribution of genetic variation; analyzes the relationship between genealogy of genes and geography		[SU4] test/exam - oral or written		

Subject contents	Empirical foundations of phylogeography, definition, place among related disciplines. Relationships between phylogeny and demography. Intra-population maternal lines. Spatial structure of the population. Genealogies of nuclear genes. Intraspecific phylogeographical patterns (distributions of genetic variation): human and other species. Aspects of genealogical correspondence in phylogeographical inference: level gene, species group of co-occurring species, biogeographical regions. Phylogeography and speciation processes.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	final test	51.0%	100.0%
Recommended reading	Basic literature	Avise J.C., 2000. Phylogeography. The History and Formation of Species. Harvard University Press, Cambridge.Avise J.C. 2008. Molecular markers: natural history and evolution. University of Warsaw PressAvise J.C. 2012. Molecular markers, Natural History and Evolution. Sinauer Associates, Sunderland, MA, USA	
	Supplementary literature	Wysocka A., Grabowski M., Sworobowicz L., Mamos T., Burzyński A., Sell J. 2014. Origin of the Lake Ohrid gammarid species flock: ancient local phylogenetic lineage diversification. Journal of Biogeography, 41(9): 17581768; DOI:10.1111/jbi.12335Sworobowicz L., Grabowski M., Mamos T., Burzyński A., Kilikowska A., Sell J., Wysocka A. 2015. Revisiting COI phylogeography of <i>Asellus aquaticus</i> in Europe: insight into cryptic diversity and spatiotemporal diversification. Freshwater Biology, 60 (9): 1824-1840; DOI: doi:10.1111/fwb.12613Sworobowicz L. , Mamos T., Grabowski M., Wysocka A.: Lasting through the ice age: the role of the proglacial refugia in the maintenance of genetic diversity, population growth, and high dispersal rate in a widespread freshwater crustacean, w: Freshwater Biology, nr online first, 2020, ss. 1-1, DOI: 10.1111/fwb.13487Wattier R. , Mamos T., CopilaşCiocianu D. [i in.] : Continental-scale patterns of hyper-cryptic diversity within the freshwater model taxon <i>Gammarus fossarum</i> (Crustacea, Amphipoda), w: Scientific Reports, vol. 10, 2020, ss. 1-16, Numer artykułu:16536, DOI:10.1038/s41598-020 73739-0	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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