

Subject card

Subject name and code	Animal Migrations-Field Course, PG_00183141						
Field of study	Biology						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Optional subject group		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		English English		
Semester of study	6		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Bird Migration Research Station -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Magdalena Remisiewicz				
	Teachers		prof. dr hab. Magdalena Remisiewicz mgr Ignacy Gołębiwski mgr Zuzanna Marynkiewicz				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	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		25.0	50
Subject objectives	Understanding reasons, mechanisms and adaptations of animals to migrations, as an important element of animals life cycle in seasonal climates.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
			B2_W01: A student consistently applies and disseminates the principle of a strict, based on empirical data, interpretation of biological phenomena and processes in research and practical activities B2_W04: A student has in-depth knowledge of the animal movements. B2_U06: A student selects and applies knowledge on animal movements to interpret and conclude on empirical data related to animal movements. B2_K05: A student understands the need to use recognized sources of scientific and popular science information on animal behaviour in order to deepen knowledge.		[SK1] oral statement/conversation/discussion [SK4] test/exam - oral or written		

Subject contents	1. General patterns and rules in animal migrations. 2. Migrations between breeding and non-breeding sites in different animals (e.g. insects, amphibians, reptiles, birds). 3. Seasonal regular migrations vs irruptive and irregular movements. 4. Demonstrating mechanisms and patterns of birds and animal orientation and navigation during migration. 5. Patterns of daily/nocturnal activities of migratory animals. 6. Novel techniques in studies of animal movements (e.g. loggers, geolocators, audio recordings etc.).		
Prerequisites and co-requisites	English at level B2		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	60.0%	100.0%
Recommended reading	Basic literature	1. Hansson L.-A., Åkesson S., (eds). <i>Animal Movement Across Scales</i> . Oxford: Oxford University Press, 2014. Oxford Scholarship Online, 2014. doi: 10.1093/acprof:oso/9780199677184.001.0001. 2. Dingle H. 1996. Migration: The Biology of Life on the Move . Oxford University Press.	
	Supplementary literature	1. Gołębiewski, I., & Remisiewicz, M. (2023). Carry-Over Effects of Climate Variability at Breeding and Non-Breeding Grounds on Spring Migration in the European Wren <i>Troglodytes troglodytes</i> at the Baltic Coast. <i>Animals</i> , 13(12), 2015. 2. Remisiewicz M, Underhill LG. 2022. Climate in Africa sequentially shapes spring passage of Willow Warbler <i>Phylloscopus trochilus</i> across the Baltic coast. PeerJ 10:e12964 DOI 10.7717/peerj.12964 3. Jetz W, Tertitski G, Kays R, Mueller U, Wikelski M. and Supporting authors (including Remisiewicz M.). 2022. Biological Earth observation with animal sensors. <i>Trends in Ecology & Evolution</i> 37 (4): 293298. 4. Milner-Gulland, E.J., J.M. Fryxell, Sinclair A.R.E.2011. Animal Migration: A Synthesis . Oxford University Press. 5. Lucas, M.C. and Baras, E. 2001. <i>Migration of freshwater fishes</i> . Blackwell Science. 6. Drake, V.A. and Gatehouse, A. G. 1995. <i>Insect migration: tracking resources through space and time</i> . Cambridge University Press. 7. Newton I. 2010. <i>Bird Migration</i> . Harper Collins . 8. Elphick, J. 1995. <i>The atlas of bird migration: tracing the great journeys of the world's birds</i> . Random House. 9. Berthold, P. 2003. <i>Avian migration</i> . Springer.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	1. Observation of spring migrations of amphibians. 2. Visit at bird ringing station and observation of migrating birds, and methods of studying them. 3. Demonstrating mechanisms and patterns of birds and animal orientation and navigation during migration. 4. Demonstration of novel techniques in studies of animal movements (e.g. loggers, geolocators, audio recordings etc.).		
Work placement	Not applicable		

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